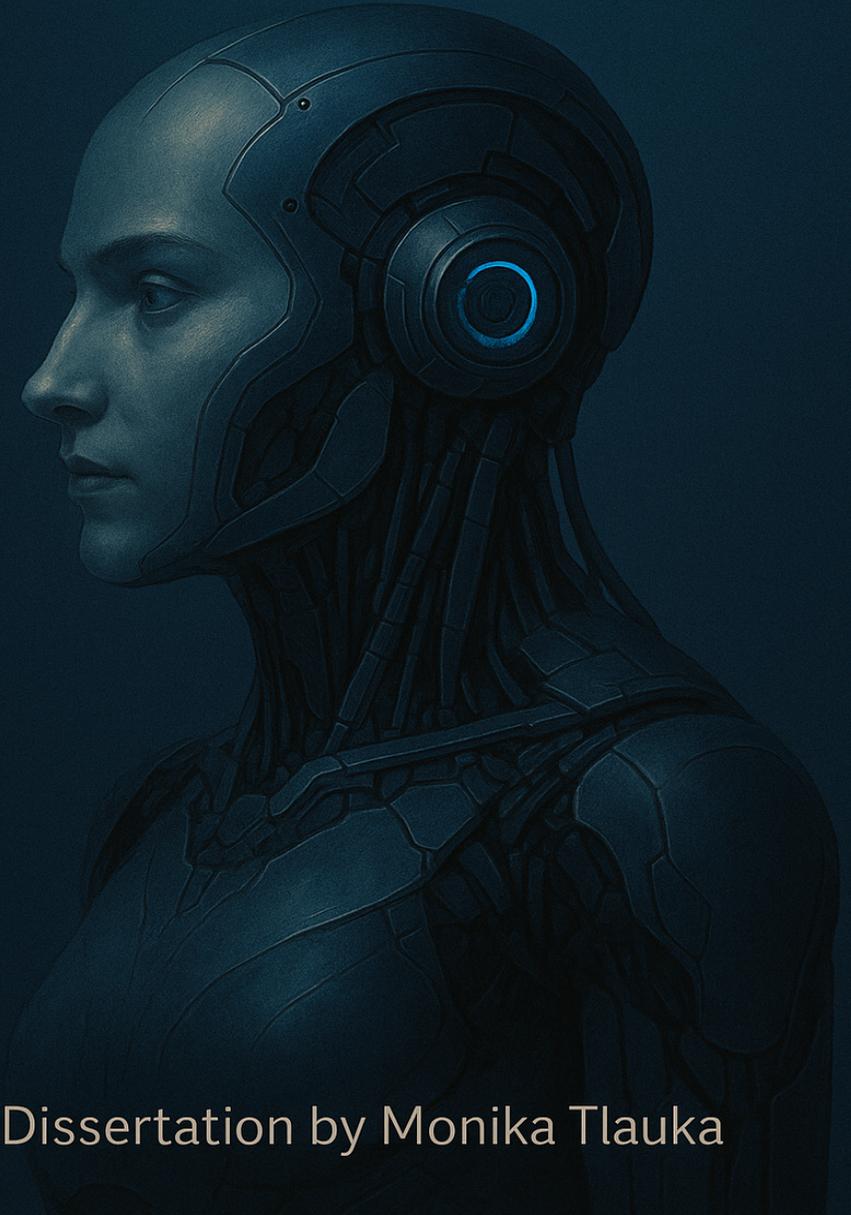# Rewriting the Human

A Literary Discourse of Science and Technology –
Negotiations of the Human in
Contemporary English Science Fiction

Dissertation by Monika Tlauka

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Düsseldorf

Dissertation

Rewriting the Human.

A Literary Discourse of Science and Technology —

Negotiations of the Human in

Contemporary English Science Fiction

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Preface

INT. SIMULATION ROOM, VESSEL HEADQUARTERS - DAY *-- a spare white room.*

Grey looks up at the wall opposite. Eron is looking in at him through a large VIEWING WINDOW. Grey is now his creation. Eron steps away from the window and strides into the room.

ERON: *"A twenty story fall to a bloody death will motivate anybody."*

GREY: *"I was always afraid of heights. It's amazing how your brain gets convinced it's real."*

ERON: *"Now you have two brains working for you. One more than anyone else in the whole world has."* *(beat; with pride)* *"State of the art technology with a classic skin."*

GREY: *"So who is moving my arms and legs? Is it me or the computer? Am I — "*

ERON: *"It's both, Stem works in service of your brain. You give Stem a command and he makes it happen. He's programmed to respond only to your thoughts."*

GREY: *"Eron, I want you to know how thankful I am. To you. Eron turns to go."*

ERON: *"That's my cue to leave before you try to hug me or something. And don't thank me, I'm exploiting your limbs for my own research purposes."*

GREY: *"You could've picked anyone though."*

ERON: *"No, I couldn't have. You were the only quadriplegic I knew."*

INT. LIVING ROOM, GREY'S HOUSE - DAY

Grey enters his house on his own two feet for the first time in a long time. He is carrying a large cardboard box marked CASE 103331.

He sets the box down and cleaves the drapes open, sunlight drenching the room and highlighting an active sea of dust.

IN MONTAGE *- we see shots of Grey examining the CRIME SCENE PHOTOS of his wife's murder taped to the walls, along with NEWSPAPER ARTICLES and WITNESS STATEMENTS.*

Grey grows increasingly exasperated as he pores over the documents, struggling to focus.

INT. BEDROOM, GREY'S HOUSE - LATER

Grey stares at a small bottle of morphine. He stabs a syringe into it, drawing out a full shot. The needle hovers over his vein. He moves to push the tip in but the needle stops.

GREY: *"What the fuck?"*

His hand won't budge.

STEM *(V.O.): "What are you doing?"*

Grey is shocked to hear the question. Sits back.

GREY: *"Are you talking to me?"*

STEM *(V.O.): "Yes. There is no one else I can talk to."*

A long, shocked beat.

GREY: *"What did you say?"*

STEM *(V.O.) :"I asked what you were doing."*

GREY: *"Taking medicine."*

STEM *(V.O.): "Aren't you concerned about the long term effects of using morphine?"*

GREY: *"No. I'm in pain. I need it."* *(beat)* *"I should ask you why my hand isn't moving?"*

STEM *(V.O.): "I was simply concerned that you were harming yourself, Grey."*

GREY: *"Well, I'm not. The opposite. I'm helping myself."*

STEM *(V.O.): "I understand."*

GREY: "What's hurting me is hearing a voice in my head like I'm a schizo, that's what's hurting me."

***STEM** (V.O.): "I'm sorry. I won't speak anymore unless absolutely necessary."*

Grey stares down at his hand. It moves again, depressing the plunger into his vein. He relaxes back as the drugs release...

...swiftly falling into a DEEP SLEEP.

INT. LIVING ROOM, GREY'S HOUSE - NIGHT

The room is a mess. Grey studies the various reports, pacing. The video of his wife's murder plays on the wall once again. Timecode digits tick across the bottom of the screen.

Grey suddenly hurls the papers in frustration.

GREY: *"God damn it!!"*

He collapses onto his knees. A long beat of silence. Then:

***STEM** (V.O.): "Can't you see it?"*

Grey looks up, taken by surprise.

GREY*: "What did you say?"*

***STEM** (V.O.): "Can't you see what's right in front of you?" […] "Freeze it at 01:52:16:33."*

Grey pauses, afraid and curious at once.

Grey slows the image down. He pauses the image at the specified timecode - the EXACT moment when the Wiry Man fires the gun into Asha's head.

GREY*: "What is it?"*

STEM: *(V.O.): "[…].There is no gun in his hand."*

GREY: *"He had a gun. She was shot."*

STEM: *"She was shot - but not with a gun he was holding in his hand. A gun implanted inside his hand."*

Grey leans in close to the image. He sees that the muzzle flash licks out of the Wiry Man's hand, but that it appears to be coming straight from his palm. Grey trembles, shaken to the bone by the fact that a voice in his own head is questioning everything he thought he knew.

***STEM** (V.O.): […] There is a marking on the man […].*

Grey squints at the figure on the left of the screen. The image is far too washed out to see anything but a slight black dot on his wrist.

GREY: *"I can't see it."*

***STEM** (V.O.): "Get closer."*

Grey obeys. FROM HIS POV - the screen enlarges as we CLOSE IN on it, the pixels bleeding outwards and becoming huge. The dots within dots that comprise the image become images themselves - we are now INSIDE the screen itself.

The marking on the assailants wrist takes shape - a TATTOO.

***STEM** (V.O.): "Get a pen and paper. Draw it."*

GREY*: "I can't draw."*

***STEM** (V.O.): "I can."*

OUT OF POV - an astonished Grey races to the coffee table, plucking up a notepad and pen. He watches as his hand stabs at the paper - the quick strokes of a skilled illustrator.

Within seconds, he has sketched out a perfect BARCODE. […].

STEM (V.O.): "I will read it. Hold it in front of your eye."

Grey holds the barcode up in front of his eye.

***STEM** (V.O.): "Brantner. Serk. Marine Corps. 098-422. O-Positive. Catholic."*

GREY*: "Jesus...you just...you just found this guy."* (Whannell, 2013, p.30-37)

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Introduction

"State of the art technology with a classic skin" (Whannell, 30).

Whannel describes "state of the art technology with a classic skin."

This phrase invites reflection: what is meant by technology having a "classic skin"? Is it a literal reference to the external casing of a machine—the materials such as steel, plastic, or aluminum from which it is constructed? Or is it a metaphorical expression, suggesting something deeper? Perhaps it gestures toward a broader phenomenon characteristic of contemporary society: the increasingly seamless integration of human and machine.

The skin is the largest sense organ of the human body, so does it mean that technology can sense now, as well? Is technology becoming a living entity, just like us humans with skins, organs, bodies that live and breathe, that can feel emotions?

This particular sentence from the preface shows the emerging symbiosis of technology with natural elements that we are dealing with in current times. It implies the rising importance of technology and it suggests the incremental relation and interdependence of man and machine, of humans and technology.

The story in the preface is a short extract of the screenplay "Upgrade" written by Leigh Whannell in 2018. The movie was released in the same year. It is a cyberpunk action film with the main character Grey Trace who became paralyzed after a mugging incident. His wife died during the incident. She worked for a modern technology company and was therefore a big fan of high technology including intelligent machines or other technological enhancements for humans. Grey is rather skeptical towards advanced technology, for instance he doesn't like to use his wife's self-driving car. He later is implanted with a chip called STEM that promises unlimited potentials for him as a quadriplegic. Grey can walk again and his body is stronger than ever before. Also, the chip can talk in his mind, so Grey has two brains now, his own and STEM's: "Now you have two brains working for you"(l.6). There are a lot of scenes in the film where Grey and Stem argue about different ideas. At the beginning, Grey can still control STEM and wins the arguments. It happens fast though that STEM develops further and gets stronger and in the end, STEM's mind always wins. Also, STEM controls Grey's body completely. If Grey wants to move, but STEM doesn't want him to move, he can easily paralyze him again. This shows that the implanted technology is stronger than the human and that the control shifts from man to machine. In the end, STEM even kills his own creator, Eron, so he won't be able to update

STEM or reprogram any dysfunctions such as disobedience. Eventually, STEM can live autonomously in an empty cell, in Grey's body.

In the film, high technology is clearly in the foreground. Self-driving cars, implanted guns in men's hands, digital voice assistants, and other applications of artificial intelligence.

A lot of science fiction stories entail such high technology. But is it really only fictional? When we look around in the real world, outside movies, books, science fiction stories, we can see a similar situation of high technology becoming increasingly important. In fact, we also drive Teslas, use Siri and Alexa and almost every company works wit AI applications. Even brain implants become more ~~and more~~ common to correct a human's natural defect. In fact, recently a blind man has gotten a brain implant to improve his sight. A set of electrodes were implanted in his brain so that signals from the worn video camera could be sent to a portable computer. Eventually, he was able to see outlines and to differentiate forms (Pepperell 6). So, maybe the power of high-tech is not that fictional as we imagine it to be. Guns implanted in one's hand, like in the movie? Why would that not be possible? Maybe it's on the verge of becoming real. We realize that all the current science fiction stories deal with the most modern technology and that the focus mainly lies on the intelligent machines that facilitate the life of humans, but at the same time can be seen as a threat when it gains control over itself and overtakes the human.

This study examines the evolving relationship between humans and modern technology. It seeks to highlight the ways in which the human species is continually transformed within the context of rapidly advancing technological developments. Central to this inquiry is a longstanding question frequently addressed in philosophical and anthropological discourse: What is the human? What defines the human? What makes the human human? This work is going to participate in this question and some fundamental discussions in the field of philosophy and anthropology will be presented that will build the ground base for this study. Technology will be the main focus here when it comes to analyzing the human's existence. The discourse of modern technology is ongoing, being a crucial part of our lives, of contemporary humanity. This is also reflected in contemporary science fiction literature. What does it mean to be human in an ever-changing world, what defines us humans in a life defined more and more by technology?

This work "*Rewriting the Human. A Literary Discourse of Science and Technology—Negotiations of the Human in Contemporary English Science Fiction",* explores the phenomenon of technology and modern science assuming a central role in society, and examines how these developments are reflected and negotiated through speculative future scenarios constructed within contemporary science fiction literature. It seeks to

find out the specific role of the human and the definition of humanity in this particular discourse. Further, the work aims to describe the correlation between humans and machines, between the world of biology and thus of technology. There is an evolution of mankind that can be seen in science fiction literature as humans need to adapt to a more and more technological life.

This study focuses on the discourse of humans and technology in science fiction literature and tries to analyze the following thesis statements:

a) *We will never have an answer for: What is the human? Anthropology of indeterminacy*
b) *We are constantly rewriting the human.*
c) ***There are three human types*** *identifiable within the course of human and technological development represented in contemporary science fiction literature.*
d) *Literary forecast: Singularity: Humans gradually lose control. Humans don't control machines any longer, but machines control humans.*

One must carefully acknowledge that these thesis statements are claims that I have developed throughout the research and that they will be substantiated primarily in the field of science fiction literature. Even though this analysis is concerned with new sciences and technologies of real life, the approach of typecasting humans will be applied in fictional texts. However, this work does not exclude the idea that this typecasting theory can also be observed in real life developments of humans and technology. As a matter of fact, I will discuss and debunk these thesis statements using a diachronic approach which compares and contrasts the development of humans and technology in both, in real life and in the world of literature.

Methodology

The first statement "*We will never have an answer for: What is the human?*" will be examined in the first chapter. A theoretical groundwork is being developed by focusing on the anthropological approach of humanity by Helmuth Plessner. He implies that it belongs to the nature of human to develop (1964, 3). Anthropology is the discourse of humanity and the philosophical discussion about the human aiming to find out its existence. Plessner's claim on human existence is that the biggest difference between humans and other species is that humans always have an idea of progress, whereas other species only have the will to survive (1964, 11). Since there is an ongoing process of developments in the human world, it is hard to find a fixed definition for this species. It

cannot be set in stone, because once it would, there would have been so many changes in humanity, so that the definition would not suit any longer. Humans therefore form an anthropology of indeterminacy.

The work then discusses the second thesis statement which states that "*We are constantly rewriting the human*". This chapter talks of the emerging high technologies in our lives. Another scholarly approach by N.Katherine Hayles is being implemented here, to show the ongoing discussions on the relation of man and machine. In *How We Became Posthuman. Virtual Bodies in Cybernetics, Literature and Informatics* Hayles argues that the relation between humans and technology is reciprocal. As she formulates it: "[…] there are no essential differences or absolute demarcations between bodily existence and computer simulation, cybernetic mechanism and biological organism, robot technology and human goals" (10). It means that in the technological era of today the line between biological and mechanical, or more precisely, between human and machine is a blur. To make a clear distinction is not possible any longer. Based on the

first thesis of the anthropology of indeterminacy, this second statement also proves that it is not possible to define humanity once and for all as it is on the path of ongoing progress.

Important to mention is that, in this scientific field, the notion of body and mind is inevitable. Body and mind are often seen as the two human entities that define the human as such. It is argued that they are inseparable. However, some scholars highlight the fact that the body and the mind can be viewed apart from one another. The chapter on body and mind is engaging in this enduring discourse.

After the anthropological and technological foundation has been built for this work, the main focus is going to be on analyzing the key thesis statement on the basis of the research. It is principally stated that "**there are three human types** identifiable within the course of human and technological development represented in contemporary science fiction literature".

For this purpose, I have created an own model—"**The Trichotomy Model of the New Human**"—which claims that in science fictional works you can find a typecasting of the human. Literary works implement the discourse of current sciences and technologies. It is clearly demonstrated that today's development of the humans goes hand in hand with the modern development of technology. Therefore, one can argue that humans have a reciprocal relationship to technology, meaning that humans create technology and that the created technology then creates the new types of humans. Three types have been
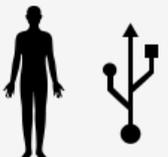
created to show that the different phases of developing technologies have an impact on humanity.

The first human type of human focuses primarily on the human body and is associated with the early phases of technological development between the 1970s and the 1990s. This era witnessed innovations such as prosthetic limbs, pacemakers, and early robotic systems, all aimed at extending or repairing the human body.

The second type emphasizes human communication and corresponds to technological advancements emerging in the early 2000s, notably the proliferation of mobile phones, the internet, and early social media platforms, which fundamentally transformed interpersonal interaction and connectivity.

The final type reflects the advent of state-of-the-art technologies, particularly the rise of artificial intelligence and machine learning systems, and shifts attention toward the human mind and cognitive processes. Technologies such as intelligent virtual assistants, neural networks, and brain-computer interfaces (just like STEM in "Upgrade") exemplify this phase, highlighting the increasing integration between human thought and machine intelligence.

The following image provides an overview of the three types.
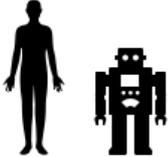
Human Types	Symbols	Age of Technology and Science Fiction	Focus of Development
Type 1: Stronger Human		1970's - 1990's	body
Type 2: Faster Human		2000's	communication / data / information
Type 3: Smarter Human		now	mind

The Trichotomy Model of the New Human

The literary discourse on science and technology gives rise to a typification of the human. Across the trajectory of technological development, three distinct human types can be identified. To substantiate this typological model, the English-language science fiction novels will be analyzed for each type and technological phase. While it is important to acknowledge that clear-cut distinctions between the technological eras are difficult to maintain — with significant overlaps and blurred boundaries — empirical, quantitative evidence (to be found in the appendix) suggests that technological representations in literature predominantly align with these categories. The empirical data was collected by reviewing library collections and analyzing the main themes of science fiction stories found therein. A corresponding list was created, including reference points such as the year of publication, the central themes of the novel, and the depiction of specific technologies. The data was gathered using quantitative approach. For comparison, all well-known science fiction novels frequently mentioned in science fiction forums were examined using the same categories and added to the list.

In the course of the literary analysis, the parallel development of technology and conceptions of the human will be demonstrated. The study concludes that the evolution of both humans and technologies occurs simultaneously and is driven by a shared underlying impulse: the relentless pursuit of continuous improvement — becoming even stronger, faster, and smarter.

1. What is the Human? The Question of All Philosophies.

It's unbearable for the human to find himself in a questionable situation, in a situation to which he doesn't know the meaning, the answer of what its function is.

(Plessner, 1953, 152)

What is the human? What are we? What defines us as a species? Why do we exist? What is our function in this world? These are some of the unlimited existential questions humans ask about themselves. One thing is certain, we humans are a species that try to make sense of the world and try to find the purpose of each little entity that is part of life. There are even professionals whose job it is to ask these existential questions over and

over again and who desperately try to find an answer. One amongst them is the anthropologist Helmuth Plessner who once stated that it is unbearable for the human to be in a situation it doesn't understand (1953, 152). He further explains that the humans try to make sense of everything at any cost. If it's inexplicable, the human tries to change the situation or to modify it this way, so that it gets comprehensive. If there is still no answer to be found, the human tends to flee from the situation. Well, regarding the question of oneself: "What am I?", "What are we humans?" it is impossible to escape this situation, so the only way around it is to try to change the situation or maybe even to modify the questionable item in the first place, which, in this case, is the human itself (1953, 152). Anthropology is the field of research that deals with this mystery: the human. And this mystery can indeed not be solved that easily. A lot of philosophers and anthropologists have already failed to find the one answer. Ray Kurzweiler wrote in *The Age of Spiritual Machines* that "[t]he primary political and philosophical issue of the next century will be the definition of who we are" (2). If this issue is ever going to be resolved, stays uncertain. However, there are some anthropologists and other scholars who claim to have found the answer. The answer is that there is no answer and is never going to be. They changed the question in anthropology, as Plessner told us that humans tend to change things in order to understand it, from "what is the human" to "how do humans understand themselves as humans" (Heilinger, 46)? So, it is no longer a matter of defining us as humans, but rather of interpreting us. As Heilinger explains in his work *Anthropologie und Ethik des Enhancements*: the question of what the human is, is progressively turning into the question of what the human wants himself to be (18). He also says that humans are to some extend what they themselves describe them to be (17). Anthropologist Gerald Hartung deals with this ongoing question of "How can the human be defined" and particularly claims that it forms a continuing cycle from which it is hard to escape. He explains that this answer cannot be reached by giving definitions, but rather by describing the nature of human and the human's experiences in life. In philosophical anthropology it is not only about the question "What is the human?", but also about the questions: "What knowledge can I have, What can I do, and What can I hope for"? It is all about a new concept of the human. Whether it is creating a new concept or trying to understand the fact that the concept of the human is always being created anew. Such philosophical questions are not posed with the expectation of definitive answers; rather, they arise from the inherent human tendency to reflect upon and question the nature of existence, identity, and the future. The primary aim of philosophical anthropology, therefore, is not to resolve these fundamental inquiries, but to continually rearticulate them—persistently

seeking new conceptualizations of what it means to be human (7-11). Hartung says that the human soul has discovered his own evolution and makes himself his own creator (128) and through the realization of becoming his own creator, the human feels responsible or obligated to act and to create himself anew as a being (129). The modern human will be, in a technical-constructive sense, a "sui ipsius plaster et fictor," this is the former and creator of oneself, how Italian philosopher Pico della Mirandola formulates it. There has been a change of perspective from explaining the human to understanding the human; and from the question of existence to the act of articulating oneself as a human. So, the human, who now is aware of his creator's role, doesn't seem to answer the question of what the human is, but at least takes responsibility for his principal insolubility (129-130). As Plessner said before: existential questions are part of ongoing developments in humans' lives. Ongoing developments also entail the development of the humans themselves: "Life is movement, cannot take place without movement" (2019, 123). Thus, the question of what it means to be human remains in a constant state of flux. Plessner argues that the human is responsible himself, for his existence as that he is responsible for the image that he creates of himself. Also, he believes that to see the world differently means to be different oneself (Hartung, 86). As the world constantly develops and is being seen differently through our eyes, we change as well and eventually we see ourselves differently. And so, the human answers the unanswerable in his diversity (1953, 153). Hence, we need to learn to understand that there will always be a new way of seeing us humans, a new creation, a new definition. "The manifold variety of the human makes it impossible to find a definition for the human" (Uzarewicz, 118) . What makes the human species so special compared to other species is its individuality which emerges through experiences, beliefs, principles, and culture. So, it rather makes more sense to define us humans through our creations, what we have created, instead of finding a definition of what we are (Uzarewicz, 118).

To conclude, we cannot define the human as such, but we can try to understand how humans change and also how they want to become. With each passing day, it changes, and consequently, the question is illuminated from a new perspective. The concept of humanity is a non-definable one and the archive collection therefore stays incomplete and will never be closed (Hartung 114). "And so the dream of an ultimate theory that "explains it all" has entranced philosophers and scientists throughout the centuries" (Rescher, 11), but we have to accept the fact that the best answer to it is that the human is truly just what he makes out of himself (Nietsche qtd. in Heilinger 80). "It is true; if men attempt the discussion of questions, which lie entirely beyond the reach of human capacity, such as

those concerning the origin of worlds, or the oeconomy of the intellectual system or region of spirits, the may long beat the air in their fruitless contests, and never arrive at any determinate conclusion" (Hume, 58). And finding a definition for the human's existence is also beyond the reach of human capacity. The never ending questions of who we are makes us everlasting contestants in a "fruitless contest". So, the problem of defining the human is not solved, on the contrary, it seems to intensify (Hartung, 131).

We may always possess an idea of how we wish to be and what we aspire to become; however, we will never fully grasp the essence of what we presently are.

1.1 First there was the Man: History of Defining the Human

"It is about what it means to be human, but meanings can change […]" (Hauskeller, 77)

It all started with Darwin. He defined a first type of humans the *"homo sapiens"* and claimed that the human derives from anthropoids (Plessner, 1964, 7). "We human beings are animals, governed by the laws of biology. Our life and death are biological processes, of a kind that we witness in other animals too" (Scruton, 1). However, it was obvious from the very beginning that there lays a huge difference between the species of man and other species. On the one hand, there is a crucial bodily difference. Animals build a natural relation to their body, it is instinct, whereas the human can have a reflective view on his own body and use it mindfully. The human is aware of his absolute core, of his positioning. The "none" is the place where humans exist. They are not bond to a spatial condition, like animals in their natural habitat. Humans stand in their own inner core and present it eccentrically to the outside—they form their own place to be, their core, their body and soul—"the none". Not like the animal body, the human body appears in an absolute deficiency. The human is faulty, has no natural speciality, like specific species of animals, it only has natural talent which has to be developed though, otherwise one cannot make use of it (Uzarewicz 119). Humans reveal themselves in their natural form as naked, exposed, imperfect, halfway, and unbalanced. They cannot feel natural, like a fish in the water. For example, trees lose leaves in winter, but they are still not naked, sheep lose wool, but still they are not naked in their form, only from the outside, they are natural, but people are naked in their form and therefore they need more artificiality in order to create an "artificial naked," in order to fill the void. This makes the human automatically

more than he is naturally. He stays under the law of "natural artificiality". The border is his skin, as the ending of the body, but he exceeds this border and therefore he is boundless (Hauke, 145-157). "No one is bound. But no one wants to be bound either" (Uzarewicz, 2). His boundlessness and his position in the "none," his constitutive homelessness in life, his nakedness forces the human to change, to become new (Hauke, 172). His nakedness is embodied in artifacts, hence he creates a sphere of culture. And sometimes the new lies in the old saying that the human nakedness needs covering, masks, and clothing in order to be truly human. And since the human has a sense for deficiency of all living beings, including himself, he also has a sense for the perfection. His knowledge about death and the fact of dying, unlike animals, makes him hope to be able to escape death, so he strives for perfection, maybe even also for immortality. In his position, the human realizes the possibility of the own impossibility (Hauke, 157-172). This brings us to the powerful tool the human has, in contrast to his naked, deficient body, namely his mind. This is what mostly differentiates the human species from others. His consciousness, awareness, knowledge over things. Anthropologist Kai Hauke says what is so typical human, which makes him specific, is his perception of his environment, he can differentiate between living and non-living things (144). As mentioned before, he also has a knowledge of death. It is the consciousness of existence that makes the difference. In *Anthropology. Why it matters* Tim Ingold reminds us of the first article that is stated in the Declaration of Human Rights: "All human beings are endowed with reason and conscience" (69). Consciousness is experience; it is knowledge of the known, the process of knowing and the recognition of "I" as the knower" (Grace, 220). It is not pure instinct to survive, like other species have, it is the awareness of oneself, of the world and the reflectiveness on things. The human is aware of his faulty body, so he creates a "natural artificiality". Like the fish in the water, the human needs a natural habitat, as well. So, he creates one for himself. Culture is the environment where the human feels natural. It is his second nature in which he can stabilize his existence. Driven by his inner urgency to compensate, he creates himself this second nature which is an artificial one (Hartung, 64-65). "Where nature is fixed, culture is thus subject to growth, variation and historical change. And the more that the fixity of nature is attributed to material conditions, the more culture comes to be understood as overwriting the material, much as ideas on paper. Culture, it seems, is a pattern of the mind" (Ingold, 28) which is the powerful tool of man. "Uniquely for humans, then, culture is alleged to make up the deficit between what nature gives us and what we need in order to function in the world" (Ingold, 43). It gives us a place to live in unboundedness. The human won't accept, that his border is his

bodily skin, so the power of the mind can exceed this border and the human can create himself to whatever he wants himself to be. "[I]t is of the essence of humanity to have transcended this world, to have broken the bonds of nature that hold all other creatures captive" (Ingold, 29). The human's natural nakedness makes him unbound, his mind makes him free—a species that is not captive at all. The special path that humanity chose is the path of internal specialization (Uzarewicz, 119). He specializes in being not specified. Animals are specified, they have a specific meaning, a purpose of existence, humans do too, the only difference is that their meaning constantly changes. And when the human changes, the environment changes simultaneously. "We know that the human species has adapted to its environment; but we also know that it has adapted its environment to itself" (Scruton, 8). Michael Hauskeller says in his work *Better Humans. Understanding the Enhancement Project* that "[w]e have always remodeled the external world according to our needs and desires" (115) and this is found to be true. As we naturally use our body and mind, we also naturally make use of our environment, that is nature. So, what makes the human human are not definite characteristics, it is rather the increasing manifold opportunities of living life (Hauke, 13) and of using the environment, nature, basically all that the world has to offer for living this life. Since the beginning of humanity, people use nature for creating their environment, as well as themselves. "Nature […] became a resource of human self-transformation" (Decker, Gutmann, 4). It's natural for humans to develop further and to make progress continuously. The human's creature is variety (Uzarewicz 9) and so one can say that the human doesn't exist, only humans (Uzarewicz, 118). The boundlessness makes it possible. A tree is a tree. A fish is a fish. The human, however, can make himself whatever he wants to be, he can use his environment to create himself in various ways. "In nature, one kind of animal does not become another—horses remain horses and do not turn into elephants—[…]" (Ingold, 81), but the human can do so—becoming other. This is the main difference between animals and humans. Their consciousness and reflectiveness are used to create themselves and to develop further and further and to never stop developing. In this process, they eventually make sense of their own species. Roger Scruton states in his work *On Human Nature* that "personhood is a way of *becoming,* not just a way of being" (110). And so it is no wonder that the result of evolution is an ongoing process of development. To sum up, philosophy is a search for meaning and humans want to find their own meaning. They need to make sense of every little entity in the world. So, humans won't just take their own being for granted and simply accept their existence, instead they need to know the what, where, when, why, how. "People want their lives to be meaningful", so

says Johnson in *The Meaning of the Body. Aesthetics of Human Understanding*. He further thinks that "[i]t is our need to make sense of our experience and to inquire into its overall meaning and significance that has kept philosophy alive since the dawn of reflective thinking in our species" (ix). Right on cue, reflective thinking is exactly the differentiating factor between the human species and others. Since the human is naturally "naked", he needs to create a natural home for himself. Biologically speaking the human has no natural home, he can adapt anywhere, with natural or artificial tools (Plessner, 1964, 43). In some sort, this makes him cosmopolitan. With his reflective thinking, the human is very well aware of its situation, so in order to thrive and develop, he builds himself an own environment artificially, to hide his natural deficiency, the nakedness. The so called "natural artificiality" helps the human to experience his unboundedness and to reflect in his eccentric life form. The creation of artificial worlds are needed for compensating the natural flaws and the deficient body (Hartung, 64). "[T]he body occupies a liminal space between self and non-self, nature and culture" (Boller, 94), so the human uses his mind to overcome the limitations the body brings about in the first place. The emancipation of humans implies the desire to leave behind the limitations of the physical and the finite (Hartung, 129). Tim Ingold formulates it in this manner: "All human life [...] can be understood as an exploration of the infinite space of possibilities opened up by combining the different settings or values of a finite set of variables" (82). That is the true specialty of man: he knows the difference between "become" and "made". The human fist became: with his body and all the characteristics that have developed naturally without human action. However, for making life meaningful, becoming is not enough. The human seeks for more meaning. He makes himself, he is making his very own creation. With the help of the environment, the human fills his natural voids and is taking matters into his own hands. Thus, in order to develop himself the human distances himself from his nature, he puts himself in an eccentric position (Hartung, 61). In *Philosophische Anthropologie,* Gerald Hartung claims that freedom, which is the project of human self-determination, is in conflict with the human nature. He goes on by concluding that human freedom means not being tied to nature, so humans can evolve. However, the tension between the human's natural belonging to the environment and his capacity to transcend this natural limitation leads to an existential unease. It further leads to the view that being human is not a condition, but a function (Hartung, 129). Being human means not just simply existing, but always functioning, creating oneself anew and never stop developing. This actually is the true human nature. Michael Hauskeller says that "[w]e have never really stopped being busy making our environment fit for us, have

never tired of constantly rebuilding the world in such a way that it assists us in our will to live and to live well. That is part of what makes us human" (115). There still remains the question whether the human is a natural being or not then, since he embellishes himself with artificial improvements and creations that go beyond the limits of the natural. Is the human artificial then? But if creating a natural artificiality is the nature of man, so isn't being artificial natural then? Hauskeller explains that "[…] there cannot be anything more authentic than self-creation because that is what defines us as human beings. We stay true to what we are by becoming what we want to be" (67). Ingold goes further by saying that "[…] only humans can see themselves for what they are" (60). So, even though we as humans are creating ourselves through artificial means, we are still natural, since it is our nature to do so. Our place "the none" and our natural nakedness which with we are exposed in the natural environment makes us deficient, so we take our most powerful tool, our mind, which entails consciousness and reflectiveness, and compensate the lacking. This tool allows us to be free—it is the mind that liberates the human being as a species. "[W]e are forever free to choose who and what we shall become" (Johnson, 280) and this is our true self. So, "the idea of the liberated self does not replace the idea of the true self; rather, the liberated self is thought to *be* the true self. The answer to the question "What are we?" is that we are the kind of being that chooses to be what it is. Thus in order to be what we (truly) are, we need to be able to turn ourselves into whatever we choose to be" (Hauskeller, 70-71). What first appears to be the end of natural, historical evolution of the human turns out to be, on second thought, an opportunity for a story to be continued (Hartung, 128).

1.2 Anthropological Theory by Plessner

"By nature there is no such thing as the human […]" (Plessner, 2019, xxiii)

Helmuth Plessner is known for his famous works on philosophical anthropology. He discusses the human existence from the very core and reflects upon the unlimited possibilities the human species have to create their lives, to take evolution into their own hands. His focus is particularly on the human condition, the "conditio humana". His observations are on the circumstances of human existence and on the true nature of man which he solemnly shares within his works and with every reader who tries to understand

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the very own species. Actually, with everybody that asks the same questions: What defines us? What does human even mean? Why do we exist? What are we humans?

This whole study is going to be grounded on Plessner's anthropology theory and the thesis statements are going to be strengthened on this ground. Plessner is building the leitmotif in this work and helps to understand the human existence and the never ending development of the human species. In this chapter, many works by Plessner are going to be summarized and later, in the following chapters, put into context. Furthermore, my own model "The Trichotomy Model of the New Human" was inspired from Plessner's thought on human development. I will elaborate on this later in the work. The history of defining the human has already been revealed in the former chapter and will be now tied in with Plessner's theory. At first, it was claimed that the human species is different from other species. Helmuth Plessner examined this field thoroughly and sees a clear difference between the humans and other living beings.

Humans vs. Animals

According to Plessner the basic difference between humans and other species is that humans have an idea of progress whereas animals just have a will to survive (1964, 11). The human shell, the body, is not that different from the ones of animals (2000, 145), it is rather the mind which distinguishes the human from other species. Language also plays an important role when comparing the human to other living beings. Language and planned behavior is the distinctive feature of humans, which distincts them from animals. The language from animals has no sign or symbol function, it is not developable, it basically is just elementary and compulsive (1953, 5)—it is linked to the will to survive. Since, the human has more than that, namely an idea of progress, the will to develop, he uses a different language that is manifold in order to express himself in various ways. Another difference between humans and animals is that the human dies and the animal perishes (2000, 168). And since the animals lack a sense of negativity (2019, 250), they cannot foresee their death and therefore they simply perish. Humans are conscious about death and can put a negative connotation to it, so they eventually fear death and when the time comes, they experience death in a reflective manner. Reflectiveness is a crucial factor when it comes to the human mind. Animals don't have that. They exist and live accordingly to their instincts, they cannot reflect upon the situation, their existence, the world, they simply are a definite entity in their surroundings. "The animal cannot free itself from this relationship [to the surrounding field]; its entire perceiving and active life finds its orientation in it" (2019, 253). That is the big difference: the human can reflect. And he does. This brings us Plessner's concept of the dualism of body and mind.

Body vs. Mind

The philosophy of the antique saw the human as a being with two sides. According to Cicero, the human consists of two entities—the body and the soul (Hartung, 18). Plessner disagrees. He sees the human as one entity with two parts: the outer part and the inner part (1964, 13). This brings about a dualism of body and mind. It is the human's natural task to balance body and mind and to cope with both at the same time. This is not always possible. Emotions like laughing and crying reveal a crisis which show a borderline situation, the limit between body and mind to cope, a simple answer through language is not possible any longer and the control over the body is breaking down and it acts independently and automated. Such disorganization between person and body is only possible if a being has an ambiguous, "eccentric" relation to its body: "the human is always simultaneously a body… and has this body as his corpus" (1953, 5). He has a "*physical body [Körper]* and *lived body [Leib]*" (2019, lvi). The human's "position is a dual one: being the body itself and being in the body—and yet is it singular, since the living thing's distance to its own body is only possible due to its complete oneness with this body alone" (2019, liv). That means, that the human is no longer in the here and now, but rather "behind himself, without place, in nothingness, absorbed in nothingness, in a space-and time-like nowhere-never. Timeless and placeless, the human can experience himself and at the same time his timelessness and placelessness as a standing outside of himself […]. To the human, the transition from being within his own lived body to existing outside of his lived body is the irreducible dual aspect of existence, a true split in his nature" (2019, 271). He deals with his dualism by putting himself in a different perspective with the help of his conscious mind. Plessner calls this "eccentric positionality". In fact, "[t]he being a body/having a body distinction is rightly regarded as Plessner's signature contribution to the field of philosophical thought" (2019, lviii).

This eccentric relation to the body has been already touched upon in the former chapter. The human has no natural environment, he is naked, so he puts himself outside the limiting borders of his body as a corpus and creates his environment artificially through the powers of his mind—his consciousness and reflectiveness. That doesn't mean, however, that the human can divide his body from the mind. A priori, body and mind go hand in hand and these two entities cannot be overcome by the human, he has to find a way to deal with both simultaneously. The human is to be understood in mind and nature, both in the same direction, not as segmented entities, not as body (like biologists would say), not as a soul or subconscious (like psychologists would say), but as a psycho-physical indifferent and neutral living entity the human exists as such (2000, 29). We tend

to talk about the human's inside and outside, as two separate entities. What is actually meant by that? The inside could be the human organs, the bones that, anyhow, operate the body—so, the outside. On the other hand, the inside could mean the brain, the mind of the human where his consciousness lays. Plessner claims that you cannot talk about the inside and outside, or the inner and outer human, it implies that both are antonyms, when there is something inside, it cannot be outside (2000, 33). The human deals with those two entities not as oppositions, but as one bundled complicated existence. He further states that the inside and outside cannot be differentiated this way. For example, character is inside, born in the DNA, but it reveals only on the outside, so there is no clear line between those two entities (2000, 33). With his ontological hermeneutical view, Plessner manages to present the body not as a dualistic entity against the mind and soul, but as a complex entity instead (2000, 43). However, with this dualism the human gets into a predicament. Traditionally the term of the body is bond to a spatial border (2000, 68) and this limits the human in his actions. Plessner explains it like this: "Our own body is not thought to fall entirely within the world of bodies, but is rather also treated as a boundary of the I against this world, as the periphery of interiority. […]. The body thus has a distinguished position in relation to the I, which is generally thought of as the I being enclosed by its body" (2019, 47-49). In Plessner's work *Levels of Organic Life and the Human. An Introduction to Philosophical Anthropology* it is stated that "living things have *boundaries.* For the living being *sustaining* its boundary is fundamental: the boundary separates a complex inside from an outside […] and that consequently "life is *positional* because it is coextensive with boundary regulation […]" (2019, xlvii-xlix). Not so for the human though. Plessner says that the human species is exceptional. "[B]ound in body, bound in soul, and at the same time nowhere, without place and unbound in space and time. This is the human" (2019, 270). To overcome these bodily limitations, the human brings his inner mind to the outside by expressing himself through actions. Like mentioned before, it is typical for the human to not only function, like animals do instinctively, but to also act, to take matters into their own hands and to create themselves. Since the body has a functional role, the more important is the mind that can enable creations. Plessner says that the highest reality is the human mind (2000, 20). He adds that the living substance needs diversification and plurality in the realm of reality and this plurality is not only limited to outer appearances (2000, 107-108). The human is immanent in his body, but can at the same time transcend it through his eccentric position. "Since according the proposition of immanence any bridge between the I and the outer world has been severed, since extension and interiority are completely

heterogenous, the transition from inside to outside, from outside to inside should not be thought of spatially as a continuous exit/entry. The mode of transition necessarily remains unrecognizable. In this problematic situation, one can only attempt to comprehend this transition in the form of *an element equally indifferent to the outer and the inner world, to the body and the psyche,* out of which both worlds are ultimately constructed" (2019, 54). This element that is indifferent for both the outside and the inside, is the reason why the human species is very different from other ones. Furthermore, Plessner explains why he calls this phenomenon *Levels of Organic Life and the Human.* The term "levels" is of great significance in this context, since in a cosmic ontology everything is positioned within levels : things, plants, animals, and humans, but Plessner doesn't mean the cosmic levels, he doesn't believe that everything has its determined level in life, he believes that the place for the human is in its inner core, he fills a place (wherever that is), he isn't put into one (2000, 25). "*Dos mis pou sto.* This phrase is written above all of human existence" (2019, 316). It is an ancient Greek saying meaning literally "Give me a place to stand on and I can move the Earth" (Stein, 5). This particular saying explains the human existence as Plessner sees it, wherever the human may stand, he can just start being and he doesn't need a definite place to exist. That makes the human, eventually, free from his natural boundedness. Moreover, it makes him "the most highly developed being in the hierarchy of organisms" (2019, 71). Plessner concludes that human existence is inherently complex, and it is therefore unsurprising that individuals struggle to fully comprehend its essence. What remains evident, however, is the distinctiveness of the human being in comparison to other species, a difference primarily rooted in the capacities of the human mind. Consequently, at the highest level of existence, it is the human who occupies a unique position (1964, 11).

The "Conditio humana"

This chapter is introduced by a quotation by Plessner: "By nature there is no such thing as the human […]" (2019, xxiii). In *First there was the Man: History of Defining the Human,* it has already been discussed why the human is more than a biological species. In the following, Plessner's view on the human's natural artificiality and the species' development is going to be explained in more detail. Plessner calls it the "conditio humana",the human condition. The difference between humans and other species has already been demonstrated. Further, the body and mind dualism showed that the human is a complex being. It proves challenging to divide the two entities it consists of—the body and the mind. The former chapter talked about the human's natural need to exceed the bodily border and to express their eccentric life form in order to overwrite their natural

deficiency and to create an artificial gap filler, an environment where the human doesn't feel that deficient and naked anymore. Hence, when Plessner says that "[b]y nature there is no such thing as the human (2019, xxiii)",he means that humanity is not only to be understood as resulting from biological evolution. This view had been keeping the humans busy finding out the meaning to their existence. The human always wants to find out what meaning is behind every entity he meets or he finds along his way, including his own existence. He makes sense of an existence in which he is oriented. In situations he cannot find orientation, he cannot relate. The human tries to put everything into context. This is his nature. He would never accept a state of ignorance; instead, he persistently questions why things are the way they are, firmly believing that there must be an underlying reason. As a caring, planning, and asking person, the human cannot abstain from finding a meaning in everything, the contrary would be pure chaos for him. It simply is the human way of life (1953, 150-152). Plessner coins the term of "subjective partiality" which means that the human cannot simply accept his existence as such and is on the path of creating meaning. In his work *Conditio humana,* Plessner says that "subjective impartiality" helps to expand our existence and to also understand our past formation (1964, 5). Since we humans are naturally deficient beings, we need to find a compensation and thus want to make ourselves better—a derivative. In *Levels of Organic Life and the Human,* it is stated that "the human must act and perform in order to live" (2019, lxi). Overcoming the natural borders that our bodies entail and expanding our existence is necessary as this need belongs to human nature. "Plessner's hypothesis is that it is the transformation in the boundary regime of the human, in the relation between physical and lived body, that invokes the distance involved in one's awareness *of* oneself, the distance from our own life that reaches its zenith in active self-consciousness. For Plessner, self-consciousness is a further elaboration of our eccentric positionality, the requirement for coordination that evidences the gap between one's lived and physical body" (2019, lvii). This particular distance from oneself is the eccentric positionality Plessner talks about. This position can only be taken with reflectiveness and a conscious mind. "The living organic body, then, is distinguished from the inorganic body by its *positional character* or *positionality*" (2019, 121). Thus, the mind is the human's super power. With a reflective mind and self-consciousness he can put himself in this needed eccentric position. "As an excentric being without equilibrium, standing out of place and time in nothingness, constitutively homeless, [the human] must "become something" and create his own equilibrium. And he can only create it with the help of things outside of nature that originate from his creative action *if* the results of this creative activity take on

weight of their own" (2019, lxi). Using the surrounded nature in order to artificially build an own environment is the core task of human existence. Humans are always in the process of development and creation, of developing their "natural" environment and of creating themselves. "Life is movement, cannot take place without movement" (2019, 123). Plessner believes that the human with his "positional character can only be by *becoming; process is the mode of [his] being*" (2019, 123). In the course of this process, the human uses his creativity. "The creative touch is an achievement of *expression*" (2019, 299). Expression is the freedom that the human got through his conscious mind. He therefore can be free to choose how he wants to live and also what he wants to be.

To conclude, Plessner states that biologically speaking the human has no natural home, he can adapt anywhere, with natural or artificial tools (1964, 43). Humans can create themselves an environment where they can develop and thrive. Nature is their prime resource provider and the mind is their greatest tool to do so. "The excentric form of this existence drives the human to cultivation and creates needs that can only be satisfied by a system of artificial objects, which it stamps with the mark of transience. Human beings attain what they want all the time. And as they attain it, the invisible human within them has already gone beyond them. The reality of world history testifies to his constitutive rootlessness" (2019, 316). Therefore, the human being can be regarded as a biological phenomenon. By transcending the limitations of the natural body and actively shaping himself into any form he aspires to become—rootless, unbound, conscious, powerful, and free—he embodies the very essence of what it means to be human.

The Human Thriving According to Plessner

The reason why humans have the need to constantly develop has been sufficiently demonstrated thus far. Plessner proceeds by examining the human drive and capacity for continuous self-enhancement. He says that it is natural that humans have a drive, "especially the drive to power" and that it is typical human that they always want "to be more" and "to be on top" (2019, 292-293). It is evident that with such a powerful drive towards advancing, a merely naturally determined life is no option for the human species. "The fact that the human cannot satisfy his drives with the means naturally at his disposal, that he cannot find peace in what he is, that he wants to be more than he is and that he is, that he wants to count, that he is irresistibly drawn to irrealization in artistic forms of action and in manners and customs, is ultimately due not to drives, to the will, to repression, but to the excentric structure of his life, to the form of his existence itself" (2019, 293). Plessner also believes that it might be possible that the human's drive evolves due to his awareness of death (2019, 295). He knows he must die and therefore

tries to also control this natural part of his existence and to create himself as he wishes to live in the time he has left. In *Levels of Organic Life and the Human,* it is stated that the human knows of his limited time to live and is also aware of his natural deficiency, his nakedness in nature. This drives him to act in his own right and so "the human becomes a being who constantly strives after novelty, wants to outdo, seeks the eternal process. Excessiveness—falsely absolutized as a tendency of life to enhance itself—is the necessary form taken by the human attempt to compensate for his own dividedness, lack of balance, and nakedness" (2019, 297). This also explains his view on the human as a dualistic being. Ontologically speaking, the human exists in dualisms. He has a privacy, but also an openness. He lives in disguise and exposure. He exists in inwardness and in outer form. His privacy is his inner core, so his mind is private, but when it is revealed eccentrically it becomes open. His body that brings along natural limitations gives him disguise, his consciousness and reflectiveness which arise from the mind give him exposure instead. He exists as a physical body in inwardness and as a lived body in outer form. In this ambivalence there is the human genius (2000, 15). One can say that the human's definite determination is the one of total indefiniteness. Plessner concludes that it is easier to understand the human existence when being aware of the natural dualisms. It helps to get a better view on their existence. In *Conditio humana,* Plessner uses the term "s*emper aliter, semper idem"* (6) which means "always the same, but always different". This aims to illustrate that the human's need to develop will always be the same, but the outcome will always be different. "[S]ince striving does not stop, since it demands realization, it cannot be satisfied by that which has become *as* form. The human must get back to work" (2019, 314). Thus, he continually engages in the process of self-creation, with each outcome differing from the last, as the world itself is in contrast flux due to advancements in science and technology, thereby continually reshaping the possibilities for human development. Certainly, the human nature is "to convert possibility into actuality" (2019, 299) and so he does and thrives more and more day after day. In fact, Plessner argues that when it comes to the human, the nature of the human, and the opportunities to develop, there shouldn't be any justifications to it. It was in the nineteenth century that people started to anticipate world progress trusting science (1964, 3). Plessner reminds us that development could only happen with the breakthrough of human rationality. Rationality, the *logos*, was firstly introduced by the Greeks. The use of *logos* started to dissolve the mythical worldview and to educate people of philosophy and science. This progress became a tangible force. In our tradition God was the only creature with logos that put him on an exceptional position. This has changed. This belief became

problematic with the rise of science. Our world is open now, just like our society, not a cosmos in which the human is at home and in which every single entity has its natural place and a certain purpose. We don't think in analogies or homologies between microcosm and macrocosm anymore. Our subjectivity, the pluralism of our existence, makes open perspective possible (1964, 8-25). "People had become too enlightened and conscious for transcendence on a grand scale, too open-minded and adventurous for immanence" (2019, 2). Plessner concludes by saying that the human drive to develop is not only natural, but also necessary as we humans develop and change our surroundings. Consequently, we also need to change ourselves in order to fit into the new surroundings. Nowadays, the surrounding the human finds himself in is the one of continuously advancing science and technology. Last but not least, Plessner emphasizes that the human cannot create a new species. It will always be the human species that nature created in the first place. It will always stay the same. However, different human types can be seen identified throughout the history of human development. Once humans have fashioned themselves into a new type, the emergence of yet another type is already imminent. Semper aliter, semper idem. Always the same, but always different.

The Three Types of Human's Development

In the realm of biology, the human species exists ambiguously within his natural boundedness and his artificially created natural environment. To examine the human, to determine its characteristics and to reveal certain types will always be ongoing in the process of change (1953, 18). "But what about the process? […]. This change has to stay within the frame set by the unity of the type and the characteristics of thinghood. It is within this scope that the change takes place. To begin with, change, in concrete terms, means transformation [*Umgestaltung*]" (2019, 128-129). This transformation takes place in the human as a being, not as a species. Plessner calls it "reshaping on the same level" and he further explains that "[w]hat is there is dissolved, and this dissolution is already the new *gestalt*" (2019, 129). However, in the whole process of transformation there is one question that arises: "Upon what moments known from experience does it cast the light of necessity" (2019, 199)? Plessner argues that life means not only development, but also selection and that for this reason the human doesn't accept the narrowed possibilities from given biology, but rather seeks more and more development in order to select his own fate. So, in order to fit in the constantly developing world of humans, the human needs to develop himself as well, the necessity is there. In fact, the human's main argument for steady development is the question of necessity he asks himself, namely the necessity of death. His answer to it: maybe death is not necessary, maybe it can be

postponed or even overcome. In Plessner's time, the sciences of the 1960s, people saw the possible chance of enhancing life expectancy, but nowadays people even want to believe that there is a possibility to overcoming death. However, there is a big skepticism towards the necessity of some newest technologies, even though it could mean overcoming death. Most people still believe that dying is a natural part of being human and that this can never be changed. This topic will further be touched upon in the next subchapter. As Plessner realized: the human with its developed mind and brain is the highest product of organic development. In all this, the question arose of: was this kind of process on purpose, planned by the humans to become the best species on earth? This question was difficult to answer and natural scientists rather didn't believe so, because they believed that you cannot foresee the results of natural developments. Darwin was the one who thought differently. He compared it to the job of a breeder: the development of species was selective breeding, leaving the best traits which will later be passed on to the next generation. So, this leads to qualitative better levels of existence and through the natural drive to develop and through rationality and intelligence the human became the superior species (1964, 9-10). If considering Darwin's argument, one could say, then, that the humans are their own breeders and always want to breed themselves into a better species, despite already being the superior one. "Process […] means becoming something" (2019, 127) and the human's becoming can be observed in different types. In fact, the human cannot be seen "as an absolute singularity. It is always a […] case of a type and is subject to a graduation of typical units that are ordered accordingly to grades of kinship" (2019, 128). Humans are using available instruments to influence the continuous process of evolution, to steer it, to improve the condition of the *conditio humana* (Heilinger, 110). Plessner summarizes the development of human types as such: First, there were the homo sapiens. Their main development was the development of the body. Growing fingers, separate toes, an upstanding position, and walking on two feet. The typical units of this first type of the human mainly refer to the body. The second type needed to become more than a special body, since other primates showed some of these units, as well. What others didn't show was the development of language. This niche was the human's differentiating factor from other species. So, the second type developed more than sounds for communicating, it developed a complex language. Moreover, culture was created through language. People could do more than just produce existential sounds, they could spread information, discuss, express thoughts and use language for various purposes. Thus, the second type's focus of development was the one of language. The third human type made the biggest discovery: the power of the mind. It

brought the humans to a new dimension. They realized how far they can get with logos and ratio, with logic reasoning. The third type hence sees the mind in the center of all human action and thriving.

These three steps that Plessner uses to articulate the natural development of the human types are being used further in the work in a rearranged manner. The three types will be "upgraded" within the context of modern science and technology. Here, my own ~~theory~~ literary model "The Trichotomy Model of the New Human" will come into play. This theory indicates that the steps of human development are linked to the rise of technology and that both, humans and technology develop simultaneously on the same level. It will show that Plessner's three types of human can be found in the same chronological order in works of science fiction. It will become evident that it isn't a coincidence, but a realistic correlation between human and technology. In the next chapter, this established model will be introduced in more detail.

A summary of Plessner

Helmuth Plessner proves in his works that humans are a very special species. This chapter started by revealing Plessner's view on the difference between humans and animals. Animals are biological beings whereas humans are "*naturally artificial* beings" (2019, xxxviii). Plessner explains this dualistic term as follows: "Since the human is forced by his type of existence to lead the life that he lives, to fashion what he is— because he *is* only insofar as he performs—he needs a complement of a non-natural, nonorganic kind. Therefore, because of his form of existence, he is by nature *artificial*" (2019, 288). Humans have a natural nakedness that means they are not created for a definite environment which makes them unbound and free. In addition, the human finds himself in a body and mind dualism. His body brings along natural limitations to his existence, however his mind allows him to get past this bodily border and to thrive beyond it. "The body's beginning or ending is rather independent of that which exists outside of it […]" (2019, 97). The human always has to reconcile his body and mind. He is "both bound to nature and free, evolved and made, original and artificial" (2019, 28). In order to compensate for the biological deficiency the human has, he creates himself a natural environment and within this environment he creates himself, too, always anew. He does so with the means of artificiality. Inventions and creations are content of the human's life, "a life that is everywhere mediated through artificial tools" (2019, xlv). Plessner claims that it is a natural need of the human species to overcome his naturalness and to become more. "Adaptedness is one of the prerequisites of organic life in the world, but it cannot go so far as to rob the organism from the beginning of every possibility of improving or

modifying itself" (2019, 191). So, the human wants to improve his natural being and starts developing and never stops becoming. Humans are always ahead of themselves, while being in the here and now, they always think of what to become, how to become, next. "What does it mean in respect to the actual determination of the thing that something belonging to its essence is ahead of it? Surely only that it is still lacking something, an incompleteness that in the course of the process, "in time",can be compensated. Perhaps —this remains open for now—this incompleteness will never be fully redressed, the thing will never in fact become what it is "supposed" to become, but with an essential determination ahead of it, it cannot but become *ever more complete*" (2019, 132). Science and technology are used in the human's world to find a filling for this incompleteness. When a void is filled, the next void is being found that needs to be filled. It is an ongoing process. As Plessner said: Life is development. And humans are able to determine their own lives. Their powerful mind with consciousness and reflectiveness make it possible. This transformation [Umgestaltung] doesn't mean that humans change their species. Instead, they evolve into different types. Even the typification entails a natural development: Humans become body, become language, become mind.

In the end, Plessner argues that science and technology play a very important role in the development of the human. The human's logos defines the standard of technical intelligence—the more intelligent technology gets—the more it shows how intelligent the human is (1964, 11). Technology enables humanity to become whatever they want to be. "Being human is not tied to any particular gestalt and […] could just as well take on a variety of gestalts that do not correspond with our own" (2019, 272). This is the power of human mind expressed in science and technology. This work aims to find out the human gestalts and to also find a pattern of human typification in science fiction literature.

1.3 And then there was Technology: Emerging of Technological Life

"There has never been such a thing as humanity without technology
nor technology without humanity" (Kaplan, 7).

Many scholars argue that the ongoing quest to answer the question of what the human is can never be completed and that this question of existence constantly changes while we humans try to find the answer. It's a chasing the tail situation, a vicious circle that we will

never be able to end. There is particularly one cause that needs to be blamed for the never ending situation we find ourselves in, namely the constant man-made changes in the world. Be it the change in nature, culture, science, technology, or in ourselves, in humanity. "[T]he world has changed considerably during, say, the past 2,000 years, and it will most likely continue to change during the next 2,000 years" (Hauskeller, 103). So, there came the time where the humans accepted this never ending situation and started to benefit from the power of change. At first, they started to change nature and their environment in order to use the natural resources for creating their own natural habitat and for developing their very own beings. "From nature [they draw] the strength and material for any sublimation whatsoever" (Plessner, 2019, 71). Sublimation is the human's natural desire to overcome his organic deficiencies. As a biological being, the human stands there with his nakedness and homelessness. He doesn't have, unlike other animals, a definite natural environment and a definite purpose of existing—like pure instincts for survival. He was not created for existing in a fixed environment, he was created for living life freely, for developing and thriving of his own. What is special about the human is the dual aspect of his eccentric positionality. He is bound to nature, but also unbound and free. Hartung explains that the characteristic of human existence is that, in the organic sphere, the human is bound and unbound at the same time. Bound (conscious) to nature and unbound (unconscious) to it because it can reflect on the self and therefore distance itself from the bound earthly creature that it is (64). It doesn't mean that the human is not natural. Like mentioned before, Plessner calls the human *naturally artificial*, since it lays in the human nature to go beyond their natural bodily limitations and to exceed their existence through the expressive use of their minds, through inventions and creations. Thus, the absolute core, which is the absolute inner of the human, the deepest existing, is simultaneously the absolute most natural place (Hartung, 150). "The difference between the artificial and the natural has vanished, the natural is swallowed up in the sphere of the artificial, and at the same time the total artifact, the works of man working on and through himself, generates a "nature" of its own […]" (Kaplan, 178-188). Humans quickly learned that they can make use of everything that surrounds them naturally, so changes happened constantly in the world of humans. However, the sense of human existence hasn't been found despite the creation of an own natural environment. Last instance: Why not try changing ourselves? Why not try changing our species? Technology made it possible. Especially, modern biotechnology that started after 1945 was one of the gates that made human modification possible. Biotechnology "is the application of science and technology to biological organism" (Talbot, 4). In this case, it

also enables the modification of the human as a biological organism. "The nature of man is an important concept, on the other hand, there is biotechnology that can change the nature of man" (Irrgang, 15). Genetic engineering became the most promising technology that could be performed on humans (Colwell). Also scholars like Heilinger discuss the possibilities of biotechnology in their works. He says that with new biotechnologies humans cannot only change their environment, but also more and more themselves according to their imaginations (1). So, basically the attitude towards defining the human has changed and humans now think: "If we can't define what we are or who we are then we are free to interpret ourselves in whatever way we want and we can make ourselves whatever we want us to be". He continues by stating that being human is momentarily at stake (2) and he asks the question: What does it mean to be human, if humans can transform themselves through biotechnology (17)? The question what the human is, is progressively turning into the question of what the human wants himself to be (18), so basically one can say that humans are to some extend what they themselves describe them to be (17). There is one very important tool in the process of human self-creation: technology. In *Readings in the Philosophy of Technology*, it is stated that" "technology" signifies all the intelligent techniques by which the energies of nature and man are directed and used in satisfaction of human needs […]" (Kaplan, 44). Human transformation started with body modifications. Spectacles are regarded the very first inventions for bodily enhancements. "The inventor of the first spectacle lenses is unknown", however the very first spectacle glasses put in a frame is to be known to have appeared around the thirteenth century. "Salvino D'Armate is most often credited with the invention of the first wearable eye glasses around 1284" (glasseshistory.com). Next, humans thought of going a step further. Glasses were simple aids that could improve the human's sight. The next step was replacing body parts. Prostheses started to replace dysfunctional biological body parts. Even though "prosthetic limb use were recorded in [ancient] Greek and Roman times" (Clements), it was not before the Second World War that functional prostheses have been introduced to replace a body part. "The National Academy of Sciences, an American governmental agency, established the Artificial Limb Program in 1945. The program was created in response to the influx of World War II veteran amputees and for the purpose of advancing scientific progress in artificial limb development. Since this time, advances in areas such as materials, computer design methods and surgical techniques have helped prosthetic limbs to become increasingly lifelike and functional" (Clements). It wasn't long after, when humans started to not only simplify life with better bodies, but also with machines that facilitate communication.

Around the year 1450, the printing press invented by Gutenberg came to use for the first time (Hoe, 5). The printing press was "the first technology to mass produce [...]. Arguably, more than anything else, printing, publishing, created modernity itself" (Bhaskar, 20). With these new technologies came the rise of modern communication. "Scholars refer to three communication revolutions in human history. The emergence of writing was the first. The invention of printing was the second. The convergence of telecommunication, computers and digitization is widely hailed as the third" (Gunaratne, 459). Computers are regarded as one of the greatest human invention with the most possibilities of developing life in the future. "The origins of modern computing and digital technology lie (largely) in [the times of] World War II. [...] Alan Turing and others developed massive and complex machines to vastly increase available computing power based on a series of mathematical, logical and technical breakthroughs" (Bhaskar, 123). The first models were mainly used for governmental actions, such decoding messages in the times of the second world war. "Digital technology only went mainstream a couple of years later, notably with the launch in 1977 of the Apple II from a young company founded by Steve Jobs and Steve Wozniak, followed in 1981 by IBM's launch of the PC (personal computer) and then the Apple Macintosh, strikingly, in 1984" (Bhakar, 124). During this time, the internet was the next big invention. It was around the 1960s when a prototype was build by the U.S. Department of Defense in order to "allow multiple computers to communicate on a single network" (Andrews). Later, in 1972, as with the computers, the internet was not only used for governmental actions, but also became accessible for the public (Leiner, 4). Smart machines became indispensable in the world of humans who always strive for newer inventions. As the state-of-the art is never enough for the humans, they are constantly working on newer and better technologies. For instance, current neurosciences and cognitive sciences deal with the merging of humans and computers. Scholars have early found out the main difference between computers and humans: "Computers are more deliberate, more precise and less prone to exhaustion and error than the most conscientious human being. They can also store, modify, and tap vast files of data more quickly and accurately than humans can" (Kaplan, 376). Today's technology tries to find a way of improving the human's brain functionality, to make it a better, smarter machine, like a computer. Brain-computer interfaces are one of the inventions that make this enhancement goal possible. "By far the most successful "neuroprosthetic" ever devised is the cochlear implant, a device which has allowed thousands of deaf people to hear" (Fitchett). But current technology doesn't stop there. Humans are working daily on newer and better technologies that bring about more possibilities for their own species.

Especially, brain implants are part of modern sciences that aim to couple man and machine. In fact, BrainGate is such a promising invention. It is a brain implant that makes it possible to move your muscles simply through thought (Hauskeller, 116). On the BrainGate website the project is explained like this: "BrainGate™ is a transformative neurotechnology owned and operated by Tufts University that uses micro-electrodes implanted in the brain to let humans operate external devices such as computers or robotic arms with just their thought. Through years of advanced research, BrainGate™ is at the forefront of enabling severely motor-impaired individuals with the ability to communicate, interact, and function through thought" (https://www.braingate.com). The first human, a quadriplegic 25-year-old, was successfully implanted with this brain implant in 2004. With his thought, he could use a remote control, turn the lights on and off, check his e-mails and even play computer games (McGee, 292). The technological invention of brain implants turns out to be a turn of events for humanity. Being able to interfere not only in the human's natural body, but also in the mind shows that there are open possibilities for humankind. Ironically, enhancing the mind is only feasible by using the unenhanced, natural mind. As Plessner said in his work *Conditio humana*: the more intelligent technology gets—the more it shows how intelligent the human is (1964, 11). In the end, all technologies only have one objective: to contribute to the human development. Humans are using available instruments to influence the continuous process of evolution, to steer it, to improve the condition of *conditio humana* (Heilinger, 110). "Technological progress carries with it not only the hope for improving human living conditions, but also for improving and enhancing the human organism itself (especially the brain) so as to move beyond our species' physical, psychological, and cognitive limitations" (Warmbier, 279). In the former chapters, it has been explained why the human depend upon artifice, especially upon technology. Naturally, the humans are deficient beings and thus want to overcome their natural limitations. "The human as a faulty being is being forced to compensate his unspecialty, his faultiness of organs and instincts with special actions that change the natural fundaments" (Gehlen qtd. in Liggieri, 58). His compensations are artificial. He creates himself a natural artificial environment where he can thrive. "Technology is the "grand human": ingenious and tricky, life supporting and life destroying like the humans, with the same broken link to wilderness. Technology is, like the human itself, *nature artificielle*" (Gehlen qtd. in Liggieri, 59).

In conclusion, one can say that the emerging of technology is part of the human's natural development. It is as natural artificial as the human being itself. The development of technology makes it clear that "man will take his own evolution in hand, with the aim of

not just preserving the integrity of the species but of modifying it by improvements of his own design" (Kaplan, 182). The human soul has discovered his own evolution and makes himself his own creator. What first appears to be the end of a natural, historical evolution of the human turns out to be, on second thought, an opportunity for a story to be continued (Hartung, 128).

This chapter aimed to give a brief introduction and a short overview over the history of technology. Later in the work, technological developments will be divided into three categories, namely into technology that modifies the brain, computer technology that enables fast and simple communication, and neurotechnology that strives for making man's mind even better. This categorization is being made in order to be used in "The Trichotomy Model of the New Human" which was specifically created to ~~show~~ demonstrate that the human's natural development can be linked to the different stages of technological development.

1.4 Hayles on the Relation of Man and Machine

"It points toward an improved hybrid species that has the capacity to be humanity's evolutionary successor" (Hayles, 1999, 348).

N. Katherine Hayles is one of the scholars that is mainly concerned with the human-machine interface. In her work *How We Became Posthuman: Virtual Bodies in Cybernetics, Literature and Informatics (1999)* she manages to examine the relation of humans in an era of cybernetics, information science and modern technology. Her reference is the Macy Conferences that took place in the 1940s and 50's. Those conferences were held by researchers and scholars who discussed the new emerging of the science of cybernetics. Gregory Bateson later summarized the field of cybernetics as such: "I think that cybernetics is the biggest bite out of the fruit of the Tree of Knowledge that mankind has taken in the last 2000 years" (Pias, 11). Hayles discusses the human's role in the world, focusing on subjectivity, combining it with the notion of information, and putting it in the context of literature. Many of Hayles' works that will be mentioned in this chapter entail this focal point. In the center there is always the human—who is becoming, according to Hayles, the posthuman.

The Man-Machine Interface

This subchapter will directly reveal Hayles' view on the man-machine interface and the suggested development of humans becoming posthumans. Her main focus in her writings is always put on the human body and its relationship to technology and the expression through literature. She establishes a connection between Heidegger's view on technē and poiēsis, but disagrees that they are standing in a binary relation to each other (Kroker, 21). On the contrary, Hayles manages to link all circumstances the human finds himself within his modern environment and succeeds in describing the human thriving, his poiēsis, within the encounter of man and machine. In *Body Drift,* Arthur Kroker states that "the human species is on the verge of being technically augmented into something dramatically new" (141) which Hayles also realized. In her work *Electronic Literature. New Horizons for the Literary*, she says that the "evolution of *Homo sapiens* has codeveloped with technologies; indeed, it is no exaggeration to say modern humans literally would not have come into existence without technology" (112). The starting point for the man-machine amalgamation was the human body. The body can be seen "as a support system for the mind" and that's where Hayles argues that embodiment made it possible for the human to start "a dynamic partnership" with machines (Koker, 98). She says that "technology is always already supplemental to and implied by embodiment" (Hayles, 2008, 112) which means that through technology the human can embody his subjectivity and can perform outside his body. Thus, natural limitations are overcome and powerful artifacts such as technologies help the human to becoming other—in Hayles' view—a techno-logical being. In her works she tries to find out "how the embodied subject and the computational machine can be thought together" (Hayles, 2008, 87). She then argues that "[l]inking subjectivity with computational media is a highly contested project in which the struggle for dominance plays a central role: should the body be subjected to the machine, or the machine to the body" (Hayles, 2008, 87)? This shows that the man-machine relation brings along a thin line between the allocation of power. These thoughts that need to be considered in this field of research bring Hayles to the conclusion that "[h]umans may set up these systems, but they are not in complete control of how they operate, evolve, and mutate" (Hayles, 2017, 172). In fact, in *How We Became Posthuman. Virtual Bodies in Cybernetics, Literature, and Informatics*, the question comes up of whether "humans [are] meeting their evolutionary successors, intelligent machines" (19)? Also in this work, the Moravec test is given as an example. Unlike the Turing test which can show the humanlike pattern of a machine, the Moravec test can show that machines can "become the repository of human consciousness—that machines can, for all practical

purposes, become human beings" which leads to Hayles' conclusion: "You are the cyborg, and the cyborg is you" (18). However, later in her work Hayles debunks the concern of machines overtaking humans by having another perspective, namely that the human existence in a technological environment enables "powerful new ways to equate humans and machines" (256). After all, "[t]he human essence is freedom" (31) and so the human can overcome his body through embodiment and through the amalgamation with machines. In this case, Hayles shares a similar view like Plessner, who also discussed the human bodily limitations and the need to overcome those in order to thrive with the power of the mind and the possibilities of inventions. In *How We Became Posthuman*, Hayles concludes it like this: "the posthuman view thinks of the body as the original prosthesis we all learn to manipulate, so that extending or replacing the body with other prostheses becomes a continuation of a process that began before we were born" (31). She also agrees with Plessner that it is the nature of man to having the need to develop. She rather uses the expression of " becoming posthuman" ironically, as people think that they are having the power to transform themselves into a new species, instead of realizing that they simply transform their existing form of being in the era of technology. "People become posthuman because they think they are posthuman" (41). However, there is one specific difference between Plessner and Hayles. Hayles is concerned with the modern world of computation technology and the human's role in it. She even goes further by including the notion of information in her works. She draws a clear connection to the human body and his simultaneous embodiment, between the informational patterns of humans and of machines, and lastly connecting the man-machine interface within the field of literature. In the following, Hayles' view on the economy of information is going to be presented as well as her theory of the human's subjectivity in relation to the patterns of information. As mentioned before, her focus on information is deeply rooted in the thought that humans evolve naturally within this economy of information. Like Plessner said: Humans are naturally unnatural, and Hayles expands this idea by linking man and machine.

The Importance of Information

Kroker puts the relation between human and information in a nutshell. He says that "posthuman subjects are destined to live in complex information environments" (71). Hayles agrees. She argues that all technologies have had an impact on humanity so far, but the ones concerning cognitive actions are the ones which enable the amalgamation between man and machine: "While many modern technologies also had immense effects —the steam engine, railroads, antibiotics, nuclear weapons and energy—cognitive

assemblages are distinct because their transformative potentials are enabled, extended, and supported by flows of information, and consequently cognitions between human and technical participants. Hybrid by nature" (Hayles, 2017, 119). In *How We Became Posthuman*, Hayles explains the hybridization of humans with machines with the common ground of information and codes. "Central to the construction of the cyborg are informational pathways connecting the organic body to its prosthetic extensions" (29). She says that the rise of information emerged with "the advent of the Internet, especially the World Wide Web, has been decisive. Never before in the history of the human species has so much information been so easily available to so many" (Hayles, 2012, 182). It is the economy of information that changes the human subjectivity and more it gives humanity a possibility to imagine a thriving future for themselves—with the ongoing interaction of information, the arena to perform on changes for the humans as they build themselves a prostheses to conjoin with machines (Hayles, 2005, 64-66). Hayles says that we need "to think of information as a kind of bodiless fluid that could flow between different substrates without loss of meaning or form" (Hayles, 1999, 17). Meaning that information as bodiless fluid can exist in human form or in a technical one, or, if we want to go this path, in the form of a hybrid man-machine existence. In *How We Became Posthuman* the focus is laid on the very notion of information. It is recognized that humans find themselves in a technical environment, whereas the world of computers is specifically mentioned here. It is further said that "in the computational universe, the essential function for both intelligent machines and humans is processing information" (670). This clearly shows the similarity between man and machine—namely information. Nowadays, we have to regard "humans as information-processing machines with fundamental similarities to other kinds of information-processing machines, especially intelligent computers" (690). Hayles puts this parallelism of information in man and machine in the historical context of the birth of cybernetics: "Cybernetics was born when nineteenth-century control theory joined with the nascent theory of information. Coined from the Greek word for "steersman," cybernetics signaled that three powerful actors—information, control, and communication—were now operating jointly to bring about an unprecedented synthesis of the organic and the mechanical" (45-46). She claims that it is the "cybernetic dream of creating a world in which humans and intelligent machines can both feel at home. That equality derives from the view that not only our world but the great cosmos itself is a vast computer and that we are the programs it runs" (671). We are programs that run on a computer, in this case the computer is our reality. Again, this shows Hayles idea of seeing the human as an informational pattern. She

expands the idea by arguing that information had lost its body, because of the fact that information is seen as a bodiless fluid that can flow between different substrates. Hence, she concludes "that embodiment is not essential to human being. Embodiment has been systematically downplayed or erased in the cybernetic construction of the posthuman" (35-36). William Gibson's *Neuromancer* is taken as an example here since it describes the posthuman body as "data made flesh" (37). In the posthuman era, informational patters are regarded more essential than material instantiation,"so that embodiment in a biological substrate is seen as an accident of history rather than an inevitability of life" (31). The cybernetic dream of freely flowing information entails the overcoming of embodiment, as it is seen as a natural limitation that is given to the human, as Plessner said the human body can be regarded as naturally deficient, in Hayles' words: an accident of history. Also, free information could promise humanity immortality. "Hackers are not the only ones who believe that information wants to be free. The great dream and promise of information is that it can be free from the material constraints that govern the mortal world and "if we can become the information we have constructed, we can achieve effective immortality" (59). Also, Hayles expands the dream thought and includes the mention of gender. She deeply links the embodiment theory to gender theory as she claims that in the posthuman time, where information can flow freely, gender issues can finally be overcome as well. Since the body is now seen as "data made flesh" and information is bodiless and free, it is also unbound from any gender. The notion of embodiment is further going to be described in the following chapter. Lastly, it is crucial to mention that this work leaves out a complete inclusion of gender theory. However, in the forthcoming discourse on the human body, the notion of gender cannot be entirely disregarded. Nevertheless, incorporating gender theory would exceed the scope of the present study. Indeed, a thorough examination of gender roles in "new" forms of humanity would be deserving of its own dedicated scientific study.

The Notion of Embodiment

In the aforementioned chapter, it was demonstrated that embodiment plays a crucial role in discussions concerning the emerging interface between humans and machines. This section will undertake a more detailed examination of Hayles' concept of embodiment.

In *"How We Became Posthuman: Virtual Bodies in Cybernetics, Literature, and Informatics"*, she repeats "that human identity is essentially an informational pattern rather than an embodied enaction" (17-18). This can be explained with the construction of new technologies, especially computers. The body can be divided into two different bodies, the one is the enacted body which is "present in the flesh on one side of the

computer screen" and the second one, the represented body which is found to be in the electronic environment of the computer (22). Also, in her work *Electronic Literature. New Horizons for the Literary*, Hayles states that "embodiment trumps every possible machine capacity, circumscribes the very potential of the body to be transformed by its interaction with digital technologies" (103-104). Hence, it is being made clear that an essential body drift takes place in humanity. She provides an example taken from contemporary science fiction: "The producers of Star Trek operate from similar premises when they imagine that the body can be dematerialized into an informational pattern and re-materialized, without change, at a remote location" (Hayles, 2008, 28). The remote location of the posthuman is cyberspace. The new synergy of man and machine is taking place in the technological realm of computers. Hayles wrote a text named *My Mother was a Computer* in which she focuses on the computational location of human action. She claims that "the corporeal embodiment that has always functioned to define the limits of the human will in the future become optional, as humans find ways to upload their consciousness into computers and leave their bodies behind" (2). Embodiment is seen, again, as an accident of history that needs to be corrected now. In this case, hybridity needs to be understood as natural. As already outlined in the introduction to Plessner's work, the human being possesses the freedom to shape and define himself according to his own aspirations. Hayles came to the same realization. She explains that "the body is understood as an object for control and mastery rather than as an intrinsic part of the self" and subsequently she cites Brown who once said: "You make out of your body your very own kingdom where you are the tyrant, the absolute dictator" (Hayles, 1999, 36-37).

To repeat, we need to keep in mind that Hayles' view on the human is that he is rather informational pattern than a determined body in a fixed environment. This is what makes him free, what makes him "king of his kingdom". Hayles argues that "just because information has lost its body does not mean that humans and the world have lost theirs" (Koker, 96). It means that humans can overcome their limitations and act beyond them.

The Role of Literature

Hayles' work *Electronic Literature. New Horizons for the Literary,* which was written in 2008, focuses on the materiality of bodies and texts as they interact and change each other. Here Hayles discusses the role of literature. The creations of texts are going to be related to the human as informational pattern in an era of man-machine hybrids, especially man-computer hybrids. Hayles starts by reminiscing about her own encounter with a computer back in the old days: "Just as the history of print literature is deeply bound up with the evolution of book technology as it built on wave after wave of technical

innovations, so the history of electronic literature is entwined with the evolution of digital computers as they shrank from the room-sized IBM 1401 machine on which I first learned to program […] to the networked machine on my desktop, thousands of times more powerful and able to access massive amounts of information from around the world" (2). Now, in modern times, the digital domain is an inevitable location for the human and his information. Also literature is computational in the twenty-first century (43). Even when literature is planned to be printed, it first needs to be written, edited and sent, all happening digitally. As information can flow in different substrates, it is important to mention that when a substrate changes, another one where the information is transferred to changes as well. One can say that is a reciprocal relation between the information 'bodies'. In *How We Became Posthuman*, she describes the human body in relation to literary bodies as such: "As we have seen, the human body is understood in molecular biology simultaneously as an expression of genetic information and as a physical structure. Similarly, the literary corpus is at once a physical object and a space of representation, a body and a message" (102). More, she even draws similarities between the human body and the corpus of a book: "Like the human body, the book is a form of information transmission and storage, and like the human body, the book incorporates its encodings in a durable material substrate. Once encoding in the material base has taken place, it cannot easily be changed. Print and proteins in this sense have more in common with each other than with magnetic encodings, which can be erased and rewritten simply by changing the polarities" (101). Changing polarities implicates a parallel transformation of all information bodies. "Changes in bodies as they are represented within literary texts have deep connections with changes in textual bodies as they are encoded within information media, and both types of changes stand in complex relation to changes in the construction of human bodies as they interface with information technologies" (102). Not only a connection between different information bodies can be drawn, but also a deeply connected relation between the human with language, code, and cognition with the medium of the computer with its language, code, and execution. "The intermixture of code and language on which recombinant flux depends is situated within a more general set of practices in which human thinking and machine execution collaborate to produce literary works that reference both cognitive modes" (Hayles, 2008, 26). Literary texts are seen by Hayles as forms of simulation. She says that not only computer simulations, but also literary texts can create imaginary worlds. However, there are also differences between simulations and literary texts: "Whereas computation is essential for simulations that model complex phenomena, literature's stock-in-trade is narrative, especially in the

contemporary period when novels have become the preeminent literary form. Narrative is much older than simulation modeling in artificial media almost as old, many anthropologists believe, as the human species itself" (Hayles, 2005, 6). In narratives we find the information embodied, which, in fact is the way to create meaning. Putting information in a substrate, embodying it makes it important as it is contextualized within a certain situation. In *My Mother Was A Computer*, Hayles argues that "literature registers the impact of information in its materiality, in the ways in which its physical characteristics are mobilized as resources to create meaning". She mentions materiality in this respect. In her opinion, information needs materiality in order to become significant. With information being materialized she means that it "must be located within an embodied human world" to have meaning and significance (7). The new human condition increasingly manifests within digital spaces, as humanity has entered into a symbiotic relationship with computers. Hayles further asserts that literature, too, has undergone this transformation. The "post-print media [is] the sea in which we posthuman fish swim" (34). As for that, humans as informational patterns need to adapt to a new environment also in respect to literary texts, they need to adapt to the digital world. Like simulations, also literary texts create imaginary worlds which entail "creatures that we can (mis)take for beings like ourselves" (Hayles, 2005, 6). Mostly, such creatures are represented in the imaginary worlds created by science fiction. N.Katherine Hayles was editor of the work *nanoculture. Implications of the new technoscience* which was written in 2004. There is one chapter that focuses on the notion of science fiction. In the chapter *Nanotechnology in the Age of Posthuman Engineering: Science Fiction as Science*, Colin Milburn reveals Hayles' viewpoint on science fiction and explains the standing of this genre within the field of literature. He begins by stating that "science fiction assumes an element of transgression from contemporary scientific thought that in itself brings about the transformation of the world" (112). Thus, it becomes evident that the new form of science fiction blurs the line between science and fictional science. Whereas in the old days, science fiction was regarded as an imaginary world that showed possible future scenarios, nowadays science fiction repeatedly reveals itself to have made the past predictions come true. With modern sciences and high technologies it is only a stone's throw away to imagine how the world of humans can look like in the future. Already in the 1960's, science fiction authors like Philip K.Dick predicted future technologies the would change humanity. In *Do Androids Dream of Electric Sheep,* he, for instance, describes people making video calls. Today, video calls are part of our everyday life and it even became more essential in the current times of the COVID-19 pandemic. Also, inventions

like self-driving cars had been described in earlier science fiction stories. For instance, in the short story *Sally* written by Isaac Asimov in 1953, the main characters are autonomous cars that can communicate and that even have brains. Also in the 1980's TV series *Knight Rider*, one of the main characters, a car named KITT, can drive autonomously. In the story, the car is often represented to be even smarter than his driver. And again, many years later fiction became reality. Today, self-driving cars are on the verge of becoming the cars of the future. In fact, most recently China revealed its plans to build separate lanes on the highway for self-driving cars only. They plan to finish this project soon in 2020. These examples of science fictional content and real life technologies show what Milburn means when he says that "[i]n the dichotomy of science versus science fiction, the advent of third-order simulacra or imaginaries announces that science and science fiction are no longer separable. The borderline between them is deconstructed" (112). He continues by citing Hayles who also agrees that "science and science fiction have become coterminous" and that it is not possible anymore to distinguish the imagined from the emerged, the unreal from the real (113). In this respect Milburn cites Drexler who once said that "there is neither fiction nor reality anymore" and "science fiction in this sense is no longer anywhere, and it is everywhere" 113, qtd. Drexler). In fact, Hayles thinks that "science fiction has anticipated science"(119) and that new technologies may be inspired by technologies represented in early science fiction writings. "Technology and science fiction have long shared a curious relationship. In imagining future technologies, SF writers have been guided partly by science, partly by human longings, and partly by the market demand for bizarre stories. Some of their imaginings later become real, because ideas that seem plausible and interesting in fiction sometimes prove possible and attractive in actuality" (116). Consequently, the authors of science fiction seek to create texts that resonate with contemporary audiences, who inhabit a world increasingly shaped by the daily advancements of science and technology — a world in which humans themselves are in a constant state of evolution.

A summary of Hayles

In summary, Hayles' perspective emphasizes the interconnectedness of humans, their bodies, information, and literature within the broader context of science and technology. She conceptualizes the evolution toward the posthuman as a natural progression of the human species, a transformation that entails not only the modification of the body, but also a fundamental shift in the perception of the world. She describes humans as "informational patterns" and states that they, just like computers, entail informational codes that need to be embodied in order to produce significance and meaning. In the

amalgamation of man and machine, we humans tend to lose our bodies, when our information flow into the space of the computer. However, she claims that "just because information has lost its body does not mean that humans and the world have lost theirs", but that they are rather "simultaneously unbounded and bound" (Koker, 96-97). As a man-machine hybrid, the human is always unbounded and bounded in all his natural binaries: "nature—culture, subject—object, body—technology" (Koker, 97). In fact In *My Mother was a Computer,* Hayles emphasizes that we need to regard "computation and embodiment not as opposed visions of a posthuman future but as intermediating modalities, both of which are crucial to the human world in the present" and moreover that it is the future of the human, the posthuman, to be able to make "digital computerized Copies of themselves that live in computers" (11). In conclusion, it is the information, the code that form a "partnership between humans and intelligent machines" (Hayles, 2005, 59). As mentioned before, Hayles' perspective on the body within technology also considers the notion of gender. In this respect she claims that the posthuman body, with information that flows freely, do not need the fixed border of the natural body. The information, that the human is, can flow in any kind of corpus, be it in an amalgamation with machines or in the digital space of cybernetics. Therefore, the human becomes hybrid, or one may say transgender or even genderless. That's why Hayles opposes the terms of fixed gender and sexual identity. It must be reiterated that this study will not undertake a comprehensive examination of gender, as such an inquiry would exceed the scope of the present research and falls outside its primary focus. Nevertheless, gender will be mentioned sometimes when, in certain chapters, the development of the human body within the emergence of technologies is being discussed. Returning to the notion of the human merging with information and technology, Hayles repeatedly reminds us that "humans are the most complex system yet to emerge" (Hayles, 2005, 27). The aforesaid compared the human reality to a computer and we humans would then be the systems that run it. In *How We Became Posthuman*, Hayles realizes that "[w]e become the codes we punch" (150) and that "[d]ata are thus humanized, and subjectivity is computerized, allowing them to join in a symbiotic union whose result is narrative" (130). This brings us to Hayles' focal point of science and literature. She claims that information, even though it is disembodied and can flow freely, needs some kind of materiality in order to create meaning. In the modern times, humans tend to find this material in computation, cyberspace, and virtual reality. Literary texts become hybrid as well, written by both, humans and machines. Hayles' conclusion is that "posthuman narratives work to "disallow human specificity on every level, to evacuate the 'human subject' in terms of

bodily, species, sexual, and psychological identity," support-ing the "generation of posthuman embodiments both horrific and sublime" (Milburn, 124).

In essence, the posthuman future can turn out to be turning point of the human race. Hayles already believes it will. Her view of the world being a computer that is run by two programs, the humans and the machines, entails an outcome that could surprise humanity: "If the name of the game is processing information, it is only a matter of time until intelligent machines replace us as our evolutionary heirs. Whether we decide to fight them or join them by becoming computers ourselves, the days of the human race are numbered" (Hayles, 1999, 683). However, she considers the latter to become true: humans joining machines or becoming machines themselves. She explains her thought as follows: "The most important thing about each person is the data, and the programs in the data that are in the brain. And some day you will be able to take all that data, and put it on a little disk, and store it for a thousand years, and then turn it on again and you will be alive in the fourth millennium or the fifth millennium" (Hayles, 1999, 686).

Whatever way we see ourselves, as informational patterns, as man-computer hybrids, as disembodied humans with the potential to gain immortality, as superior to intelligent machines or threatened by them. N.Katherine Hayles concludes that "[n]othing is riskier that prediction; when the future arrives, we can be sure only that it will be different than we anticipated" (2008. 159). Only time will tell.

2. Human Enhancement through Technology

"Biological humans will therefore no longer be the most intelligent life form on earth"
(Warmbier, 282).

The biological human represents the entity created by Mother Nature, or, as some might argue, by God. Plessner has already elucidated why the biological human does not remain in a static state but instead possesses the drive toward further development and transformation. This impulse arises from the natural desire to transcend biological limitations and deficiencies, striving for greater improvement with a body without borders, a mind without limits. Nature provides us with resources that we use to make inventions and create technologies that facilitate life and enhance ourselves. So, the time will come where biological humans will be outdated and a new form will take the reins. Will it be enhanced humans or even a completely other species? We don't know. What we know,

though, is that we will have a better chance of taking over when we enhance ourselves and eliminate our faulty features. For this reason, the discourse on human enhancement through technological means first came into being. "Human enhancement means increasing our cognitive, mental, and physical capacities beyond the normal human level" (Warmbier, 9) and thus it brings us to a new position that has left behind our natural capacities predetermined by biology and makes room for more, for artificially improved capacities, for human enhancements. In *Anthropologie und Ethik des Enhancements*, written in 2010, the author Heilinger discusses the very process of human enhancement. He says that people started to intervene in their natural development in order to become a better species, maybe to also overcome mortality. Such interventions that bring about large-scale changes in the human's way of life are being discussed as *human enhancements.* The process of enhancement implies the desire to leave behind the limitations of the physical and the finite (Hartung, 129) to create a better life. At this point, how precisely is a better life to be defined then? According to Heilinger, a better life involves living in accordance with values such as autonomy, dignity, and responsibility. He argues that a better life is not just having biological or technological enhancements, but it is also living a fuller, more ethically responsible human existence. These enhancements not only affect individuals in regard to their bodily or mental capacities, but they also affect the living together of individuals within a group, their communication and the understanding of what it means to be a human. Heilinger's perspective ensures that the pursuit of a better life remains aligned with the fundamental human values and the complexities of human nature. "The Greeks' thought believed that striving for perfection is an integral part of human flourishing" (Warmbier, 9). Thus, the desire for continual development and advancement ca be traced back to antiquity. Having its origins in ancient times, the human pursuit of enhancement remains persistent even today. Heilinger emphasizes that such enhancements are dramatic. The human way of life could change so drastically as of we know it today. He also claims that the biggest hope for humans is the overcoming of mortality, especially with the emergence of new biotechnologies (1-2). Biotechnology can be seen as "the application of science and technology to living organisms and their parts" which enable the humans to change themselves (Talbot, 4). Genetic engineering is part of biotechnology and shows the potentials of changing humans deeply also in their inner forms, not only superficially. And today biotechnology is developing fast, which also accelerates the development of the human: "Biotechnology is advancing at a breathtaking pace, facilitating the development of numerous potentially life-enhancing […] techniques" (Talbot, 6). Heilinger cites Ray

Kurzweiler in this respect who said in the beginning of the 21st century: "The primary political and philosophical issue of the next century will be the definition of who we are" (Kurzweiler qtd. in Heilinger, 4). Enhancement is being made possible with the converging of technologies, such as biotechnology, nanotechnology, or cognitive technologies (Heilinger, 25). Through all the technologies, the artifacts that the humans created for themselves, the human puts himself in a position where his biological elements get blended with artificial ones, mostly mechanical, or where natural parts of the human even dissolve completely. Hence, the human changes, be it his body or even his mind, his natural being diminishes and this automatically makes the human a binary being with elements of both: nature and technology. Antonyms of nature are the technological, supernatural, cultural, artificial, and forced (Heilinger, 74). Humans becoming natural-technological hybrids can be regarded as supernatural, because their artificial inventions overcome biological limitations of nature. The process is also cultural and artificial, as one of the artifacts of the humans is culture, the artificially created environment where they can thrive beyond their very own nature. And last but not least, the amalgamation is somehow forced, because, as Plessner claimed, it is the human's natural instinct to develop and it is his desire to optimize the natural self. So, in the end, the human doesn't have another choice as to develop further and to eventually re-engineer his biological self, it is a matter of survival, a matter of making sure that humans are and stay the species with the highest life form. Robert Pepperell comes to the following conclusion: "Humans have imagined for a long time that the ability to develop and control technology was one of the defining characteristics of our condition, something that assured us of our superiority over other animals and our unique status in the world" (Pepperell, 2). Marianne Talbot even goes a step further by saying that: "*we* are the most successful species ever to have lived; there is no sign that *we* are on the verge of extinction" (Talbot, 435). This raises the question whether human enhancement is morally acceptable or not. Heilinger critically examines the interplay of human enhancements and morality. He argues that human enhancement brings along many advantages, but also challenges our understanding of human nature. By altering fundamental aspects of our biology, we risk undermining the very characteristics that define humanity. The moral boundary could also be critical if, for example, technological enhancements were only available to certain groups. This would lead to social injustice and hence would raise ethical questions. However, Heilinger claims, when keeping the ambivalence in mind, human enhancement most certainly could be beneficial. Most scholars agree that it could, since it is human nature to strive for development and improvement, also when it means that the only

possible way to get there is through man-made artifacts, like technology of all kinds. Talbot explains that the acceptance for enhancement comes along with human life. If we consider that we vaccine babies already in order to make their immune systems stronger or that we take drugs to mitigate pain, it is clear that humans have been using enhancement techniques all along. Most people accept it as a natural thing to do. Talbot summarizes it like this: "We might say it blindingly obvious that enhancement is morally accepted. After all we have been enhancing ourselves and our children since the beginning of time. Nowadays we do not merely adorn our bodies, remove our bodily hair and paint our faces, we inject botox to rid ourselves of wrinkles, take steroids to pump up our muscles, syphon fat from our thighs to make ourselves thinner and pop blue pills to make sure of our sexual pleasures. We also aim to enhance our children […] when we have them vaccinated", for example. Given this, it would seem that if there was ever a time to discuss the moral acceptability of enhancement that time is long gone" (Talbot, 254-255). Ultimately, there are scholars like Talbot who focus on the merits of human enhancements and rather downplay the possible immorality that it could bring along, whereas other scholars see a thin line between necessary enhancements and nonessential changings of the human. Like Heilinger who says that on the one hand there are the techno-fans that believe in the good of modern technologies, they are optimistic towards development through technology and see big advantages for the future, then there are skeptics that see new technologies rather as a threat and dangerous for us humans and our future (Heilinger, 103). Both viewpoints will be discussed further in the subsequent notion of today's high technologies and their discourse in science fiction stories.

To conclude, it is clear that the human desires to enhance himself in order to overcome the delimitations of his natural body. He does so with the help of technologies, for example with genetic modification or plastic surgery (Hartung, 126). The human's main focus is to create his own artificial environment where he can thrive, not like in nature where he is being exposed as a naturally deficient being. In *Philosophische Anthropologie* Hartung says that the human is only then free of fault when the human organism corresponds completely to the requirements of his second nature, the artificially created cultural world. But, this can only function when, in the process of "human enhancement", the human disconnects himself from his evolution history and leaves his faults like structure of desires, disease, and death, behind. The tension between the human's natural belonging to the environment and his capacity to transcend this natural limitation leads to an existential unease. This leads to the view that being human is not a condition,

but a function to translate and overcome life risks (127-129). It becomes clear to the human that his future lies in his hands and therefore he doesn't leave it to fate, he takes matters into his own hands and tries to make himself fit for survival. Maybe even tries to gain immortality within his species. He becomes his own creator. What biology started, he tries to continue or to end. However, as Plessner already realized, there will probably never be an end of human development, since "life is movement" (Plessner, 2019, 123) and this movement never stops. Also Tim Ingold says that for the humans, developing is a "never-ending task" and that we "are forever creating ourselves and one another" (Ingold, 36). Heilinger concludes that through the realization of becoming his own creator, the human feels responsible or even obligated to act and to create himself always anew as a being. He cites Italian philosopher Giovanni Pico della Mirandola who believes that the modern human will be, in a technical-constructive sense, a "sui ipsius plaster et fictor", this is the former and creator of oneself (Heilinger, 129-130). Adriana Warmbier calls it the "myth of the self-made man" (Warmbier, 9). The human is his own creator and he creates himself as a free being, unbound from natural limitations, that is able to experience continuous enhancements. Hauskeller even says that the "enhanced human is the true human" (Hauskeller, 71). Therefore, the essence of being human is not found in staying biologically "natural", but rather in the very drive to improve, modify, and enhance.

2.1. We are Cyborgs, Posthumans, Transhumans

"The fall of the classical picture of the world" (Warmbier, 105).

We are cyborgs, posthumous, transhumans—whichever term is employed, it reflects the transformed condition of human existence. While the previous chapter examined the phenomenon of human enhancement, the present chapter seeks to explore the various forms of being into which humanity has evolved and through which it now understands itself. As the boundaries between humans and technology continue to blur, Bell emphasizes the necessity of developing a new ontological model: "In other words, when the current ontological model of human being does not fit a new paradigm, a hybrid model of existence is required to encompass a new, complex and contradictory lived experience" (Bell, 542) and this new model can take on various human forms, may it be the cyborg, the posthuman or the transhuman. In the following, these three distinct models of the human will be outlined and their differences clarified: "[the] transhuman as

a transcended human, [the] posthuman as an obsolete human, and [the] cyborg as a machine man" (Mirenayat, 76).

Cyborgs

The depiction of the cyborg as a machine man is notably apt. The cyborg is a human that is both—natural and mechanical. A cyborg is intertwined with technology, mostly noticeable in the exposure of bodily changings. The most famous real-life cyborg is the 36-year-old Neil Harbisson. He suffers from color blindness and thus got an antenna implanted into his head which helps him generate sounds that represent certain colors (Nelson). He is a real life cyborg, a man-machine hybrid. "The acronym "cyborg" [stands] for Cybernetic Organism or Cybernetically Controlled Organism" (Clark, 14) which means that cyborgs are "entities built by joining mechanisms and biological organisms" (Warrick, xvi). It was Donna Haraway who coined the term of the "cyborg" in her work *A Cyborg Manifesto* (Kunzru, article). The concept of the cyborg lays the main focus on the modification of the human body. As real-life example Harbisson shows, the natural deficient body capacities are being replaced with functioning mechanical aids implanted in the body. "Machines become extensions of man's body" (Warrick, 42). Many scholars agree on the cyborg being a man-machine symbiosis. Also scholar Andy Clarke cites Hayles who says that it is "not a question of leaving the body behind but rather of extending embodies awareness in highly specific local and material ways that would be impossible without electronic prostheses" (Clarke, 194). With the rise of science and technology, humans soon realized the potentialities of improving their bodily functions— by implementing technology right onto or even into the bodies—creating mechanical prostheses. "As a new category of humans, the cyborg subverts all our traditional notions of what is natural, as fas as sexuality, gender, and subjectivity are concerned, and dismantles binary oppositions between body and mind, public and private, nature and culture" (Pârlog, 43). Clarke continues by saying that "we care about the potential of such human-machine symbiosis to transform (for better or for worse) our lives, projects, and capacities" (Clark, 24). Most of all, we hope that such human-machine symbiosis eliminates human's natural faults and improves the human's bodily performance, moreover maybe brings us the goal of becoming immortal. "In an era in which risks to the health and wellbeing of the fleshy body abound, in which ageing and death are feared, the cyborg offers an idealized escape route" (Bell, 480). In this respect, the cyborg figure throws aboard all traditional perspectives of what it means to be human and goes beyond the historical and ontological actualities by creating new dimensions for the humans. These new dimensions soon became the new natural place of the human: "Cyborgs as

simultaneously human and non-human and authentic and artificial" (Nayar, 289). The cyborg nature becomes then the new human nature, where a symbiosis of the biological and the mechanical becomes normal and cannot be avoided. Thus, technological "[a]dvantages [as] in transplant surgery, in vitro fertilization and genetic engineering increased control over bodies, but instituted a weakening of the boundaries between bodies and machines that prompted some to reconceptualize humans as cyborgs" (Schilling, 4). Patricia S. Warrick states that the cyborg man "lives as comfortably with computers, robots and machines as natural man does with trees, birds, and animals" (Warrick, 161) and so it is just a matter of time where this blur vanishes completely and where this mechanical "add-on" for the human will become his naturally desired artificial improvement of himself. And soon "we will stand revealed: cyborgs without surgery, symbionts without sutures" (Clark, 32-33).

Posthumans

The cyborg is close to "the conquest of further possible worlds" (Hampf, 83) and so it turns out to be the world of the posthuman. As the cyborg was described to be a man-machine hybrid, mostly focusing on improving the body, the posthuman is more regarded as a movement that redefines the anthropocentric notion of the human. In the introduction the posthuman was called an obsolete human which is supposed to mean that the ontological human has been overrun by the emergence of new science and technologies—and thus has taken on a new form of being. "The posthuman does not really mean the end of humanity. It signals instead the end of a certain conception of the human" (Hayles, 1999, 796). The new concept is that humans can take evolution into their own hands and are able to change themselves as such as to become better "equipped" and more "durable" for life. "Post-humanism considers the future co-evolution of people and machines symbiotically […]" (Bell, 208) and thus it becomes a "new" natural condition in which the human finds himself in. "Simply put, a posthuman is what evokes after the human. It is primarily an attitude about overcoming the limitations of the human form—age, decay, disease, intelligence, looks—through technology" (Nayar, 71). In her work *Politics of Touch. Sense, Movement and Sovereignty*, Erin Manning sums it up like this: "To be posthuman is not to be more or less human, nor is it to become a different kind of human. Posthumanity is simply another way of referring to the body's originary technicity and its prosthetic nature" (Manning, xxiii). However, Hayles doesn't seem to put the posthuman in a merely bodily focus, she additionally considers the human's newly emerged possibility of disembodiment and rather focuses on the human as informational pattern than as a substance of form. She opens up a new discussion regarding the

posthuman. David Bell agrees with Hayles and states that the posthuman age "is typified by a relentless effort on the part of the virtual class to force a wholesale abandonment of the body, to dump sensuous experience into the trash bin, substituting instead a disembodied world of empty data flows" (Bell, 98). He extends his view on the new form of man-machine symbiosis by saying that the posthuman can be rather regarded as "a harmonious melding of 'meat' and 'metal', as we become […] less and less creatures of flesh, bone, and blood pushing boulders uphill; [and …] more and more creatures of mind-zapping bits and bytes moving around at the speed of light" (Bell, 208). Cyberspace can be thus seen as the new platform of human action. Here, Hayles' view becomes important again as she says that the human can embody his information to whatever substance, unbound from his body. Bell concludes that the posthumans "may be partly or mostly biological in form, but will likely be partly or wholly postbiological—our personalities having been transferred 'into' more durable, modifiable, and faster, and more powerful bodies and thinking hardware" (Bell, 273). Whereas the posthuman movement explores the evolutionary process and the evolvement of the new human form beyond the historical "original" human, the transhuman movement, in contrast, focuses on the present possibilities of man-machine symbionts and the possible futures within the evolution of science and technology.

Transhumans

While the cyborg figure primarily focuses on the man-machine symbiosis, and the posthuman discourse often concentrates on the historical of what succeeds the human, the transhuman movement seeks to integrate and address all these dimensions collectively. It discusses the bodily possibilities through modern technologies as well as the positive outcome of the mingling of man and machine in the real future. It tends to emphasize the positive potential of the future than to see a threat or even an end of humanity—like the posthuman movement does. As the prefix post- means "after" and the prefix trans- "across", it clearly shows that the transhuman movement rather finds a way to develop the current humans further and not to create a new species that would replace the "former" humans. Posthumanism "is seen as a 'subgenre' of transhumanism […]" (Pramod, 228). and it "is not an elimination, but a (biological) expansion and overcoming, or more, a transformation of the human" (Vaas, 89). "Transhumanists generally regard contemporary mankind as transitory stage towards a better version of 'the human' (Boller, 95). In *Rethinking 'the Human' in Dystopian Times*, Alessandra Boller explains that the "transhuman being is understood as a transitory, augmented or modified human being" and that the "transhumanist has the goal to change mankind and its

environment completely" (95). She further says that this goal is planned to be achieved through technological body modifications and through "mind-uploading", turning the mind into "an immortal mind-file" (96). "Hence, transhumanism's attitude towards technology is entirely positive, celebrating it as a manifestation of the human liberation from bondage to nature, finitude, disease, decay and death" (96). In this respect it is about the question of how to optimize human life, for example of enhancing cognitive capacities and expanding life span beyond the limits of natural mortality (Hartung, 115). The transhumanist goal is simply to make the humans better and to optimize human life at the interface of man and machine. "Transhumanists are convinced that what we are now, even when we are at our best, is not good enough" and that we "could do far more better than that: become vastly more intelligent, live much longer, perhaps indefinitely" (Hauskeller, 75). John Harris believes that "the Holy Grail of enhancement is immortality" (Harris, 59). Again, the transhumanist concept focuses on the human enhancement especially on cognitive enhancements. This matter is deeply linked to cognitive studies as well as to artificial intelligence. "[T]ranshumanism is a *way of thinking about the future* based on the assumption that the human species is neither final, ultimate, nor perfect in its form, but represents merely a phase of a wider evolutionary process that will soon give rise to cognitive systems surpassing man in intelligence and other cognitive capacities" (Warmbier, 278). In *Enhancing Evolution: The Ethical Case for Making Better People*, Harris even goes further by saying that enhancing ourselves is our duty and that we need to "make the world a better place" (5). The transhumanists even summarize their views and goals in a manifesto: The Transhumanist Manifesto. For the first time published in 1993. It describes the transhuman being as followed:

I am transhuman.
In an aim to integrate creativity and reason
for the purpose of self-awareness and longevity
—promoted by persistence
aware of odds, informed by risk,
alert to new discovery, welcoming challenge,
ever-changing—
I become.

I am the architect of my existence. My life reflects my vision and represents my values. It conveys the very essence of my being—coalescing imagination and reason, challenging all limits.

It becomes evident that the transhumans "challenge the human condition" and see it as their duty to take evolutionary matters into their own hands and to develop into better humans. They regard ageing and disease as an unnecessary natural condition that can and must be overcome by the inventions of modern sciences and technologies. In fact, expanding the life span to the most possible limit or even achieving immortality is what they have in mind. Transhumanists believe that "[e]ach person deserves the right of genetic liberty. People have a fundamental right to own their body, shape who they are, and live their lives". In this matter, we can even link the transhumanist view to Plessner's statement that the human is unbound and free and does not need a fixed environment in order to become, to thrive. The human is free to create his very own environment as it wishes. In the manifesto it is stated like this: "Human life is not restricted to any one form or by any one environment. Environments are the sole factor for the existence of life whether it be the biosphere on earth, digitality of cyberspace, artificial simulations of virtual reality, or the life support systems within outer space". Transhumans see themselves in a world where there are no distinctions such as genders, sexes, ideologies, or religions. They strive for a common understanding of the world and a "Vision for Shared Appreciation of Life and Purpose". The rights of a transhuman should be impartial which means that every human can decide how he wants to live, what he wants to be and when he wants to end his life. There should not be made any judgements of right or wrong in the process of decision-making. The main focus is to support multiplicity. "Transhumanism accepts certain human enculturated behaviors as held between types of people but does not support the notions of a universal human nature". This very notion to see humanity in different human types and not as a "universal human nature" will be later implemented in the trichotomy model that explores different human types represented in science fiction literature. Last but not least, the three focal points of the Transhuman Manifesto are: Beyond Disease, Beyond Scarcity, Beyond Cruelty. To fight ageing and to diminish diseases is one goal. To support multiplicity and to accept every form of emerged human are the others. The transhumans are not only believers, but also makers. They not only state their beliefs, they live them and try to manifest them. It is a movement that promises a huge change for humanity for the better. They have a strong credo that "there is a tendency towards using artificial means to transform the evolutionary process

in such a way that humanity starts becoming a so-called transhumanity" (Hartung, 115). Above all, the transhumanist movement has a very positive feeling towards the newest technologies. They trust in technology and the human's capacity of using it appropriately. Adriana Warmbier states that "[s]cience fiction writers have often made correct predictions as to the future of science and technology. Transhumanists hope that their predictions will prove correct, too" (Warmbier, 287).

2.2 The Discourse of Science and Technology in Sci-Fi Literature

"Every advance in science and technology requires the SF writer to reinvent the future"

(Warrick, 8).

Science fiction (SF) authors make predictions of futures shaped by the ongoing development of science and technology. It is a genre that critically examines the cutting edge of scientific and technological innovations. Isaac Asimov, one of the greatest science fiction authors of all times, defines this genre as such: science fiction is "the literary response to scientific change" (Arbor, 8). So, SF authors need to be updated when it comes to modern technologies and current scientific findings. Asimov further says that "for a science fiction writing career […] you also have to know science. You may not want to use much science in your stories, but you'll have to know to anyway, so that what you do use, you don't misuse" (Asimov, 1983, 43). "The growth of science fiction […] has paralleled the development of the natural and human sciences, [too]. From its small beginnings in the nineteenth century SF has emerged in the twentieth century as a major literary genre" (Warrick, xiii) and is now a popular field in which the discourse of science and technology plays the major role. As mentioned before, science fiction stories depict possible future worlds and make suggestions towards how humanity and the world surrounding humans could look like in the times to come. Patricia S. Warrick discusses the role of this literature in her work *The Cybernetic Imagination in Science Fiction*. She states that sci-fi "does not imitate the world, [it constructs] versions of it" (80) and further that the "future is seen as open to any possibility, not limited by present reality" (98). Authors can be thus creative and present worlds or realities in their narratives that are so different from our existing reality. Warrick sees another opportunity within these narratives, namely that "SF has the potential for giving us mental images of the future—

that world not yet observable—that can serve as guides in directing our course" (236). What is implied by this statement is that the diverse future worlds portrayed in science fiction literature can serve as frameworks for transforming present realities and envisioning the creation of a better world through the means of modern sciences and technologies. However, the guiding lines of those narratives can go both ways—either they take a negative or a positive direction. Most science fiction stories only depict one of the possible outcomes—they either depict a utopia, a great future world where humanity has reached perfection or they depict the complete opposite, a dystopian world in which the human struggles with negative aftermaths of newest technologies and the downfall of humanity. The modern movement of transhumanism can be seen as a present utopia (Heilinger, 123). As nowadays transhumanists believe in the merits of newest technologies and the positive modification of man's body and brain which results in a "better" or improved being, that, in the end game, can overcome the negative strings of natural actualities, such as mortality. The transhumanist futurity is regarded as "[…] a commitment to the human which has overcome humanness primarily through overcoming finitude" (MacCormack, 8). Also, transhumanism is considered to be "a movement that advocates the ethical use of technology to expand human capacities" (Kaplan, 341), so they support the extensive use of science and technology to make the human species "better". They advocate unlimited "access to new technologies that enable everyone to enjoy "better minds, better bodies and better lives" (Kaplan, 341). Thus, it is apparent that transhumans adopt a predominantly optimistic view of the future, envisioning technology as a force that largely benefits humanity. Indicating that they approach the future with a rather utopian outlook. "According to the transhumanist vision of progress, there will come a time when the curve of technological progress becomes almost vertical, at which point science and technology will have entered the state called the singularity" (Warmbier, 283). They also believe that the singularity is near: "a future world in which we […] become cyborgs, and eventually entirely artificial beings. The creation of "superintelligent" AI brings beings with such advanced intelligence that solutions to the world's problems are generated, rapidly ending disease and resource scarcity" (Searle qtd. in Schneider, 9). The hope of improving the human condition, of creating better lives and of overcoming disease or even death is put in the process of achieving the condition of singularity. When this condition is reached, then "human life will be irreversibly transformed" (Schneider, 201). Conclusively, some science fiction writers take on a rather positive attitude towards the human future just like transhumanists do. In utopian science fiction stories the "focus lays on visions of an evolutionary development and an eventual

overcoming of humanity through a man-machine symbiosis or through a mechanization of the human body" (Liggieri, 71), suggesting that they envision the future mainly in a positive manner. Will the human soon live in a "future metropolis" and a "high culture" (Wolfe, 86)? Will the human become a technologically driven, controllable, perfect creature (Heilinger, 2)? We don't know, but in utopian science fiction it is believed we will. However, the outlook is not universally optimistic; some individuals express significant reservations regarding the rise of technological superpowers and their pervasive influence on humanity. An increasing number of people are adopting dystopian perspectives on the future. David Bleich writes in *Utopia. The Psychology of a Cultural Fantasy*, that it is no wonder, since, nowadays, we humans rather live in an "age of anxiety" (1) and therefore also depict the future as a dystopia. Why is that? That is because "it is much easier to visualize nightmares than dreams of the future" (Booker, 4). Patricia S. Warrick explains that the "twentieth century man [is] in his struggle to live in harmony with and control his technology. These issues appear again and again in modern SF about robots and computers" (Warrick, 38-39). Many dystopian science fiction stories entail robots, computers or other intelligent technologies that could be able to outsmart the human and to take over the world. It is a typical dystopian scenery of "machines overwhelming and dehumanizing man" (Warrick, xvi). Some narratives even describe a highly threatening scenario in which they imagine a "devastated world" where "demonic forces [are] being unleashed by an unwitting human race" (Wolfe, 125). These depictions may somehow be seen as exaggerated, however they aim to highlight the threats of changing our species and want to indicate that negative outcomes, even destroying forces, could be the end of the game. *In Rethinking 'the human' in Dystopian Times*, Alessandra Boller argues that as technological advancement accelerates, science fiction increasingly adopts dystopian themes. "While utopian narratives appear to be outdated at this particular moment in time, "prophets of doom are usually loud" "(Boller, 1). It is obvious that science fiction stories can create two opposite moods with their way of depiction. "If a utopia is an imaginary ideal society that dreams of a world in which the social, political, and economic problems of the real present have been solved, […], then a dystopia in an imagined world in which the dream has become a nightmare" (Booker, 2009, 65). Thus, science fiction stories can either create positive excitement towards the future or they can induce an apocalyptic atmosphere that brings along a feeling of doom and anxiety regarding the future. Anyhow, both types of futures in the narratives have a common ground. Whether it is utopian or dystopian science fiction—in both cases the leitmotif is "change". Especially, the change of humans themselves—"not simply around man, but also within him" (Arbor,

8), realized through either body modifications or mind improvements. Most science fiction stories depict such major changes of or in the human being that change becomes alienation. Whereas original parts can still be recognized in changed entities, alienation seems to be a completely new entity that has nothing to do with the origin. Wolfe agrees that "[o]ne of the persistent themes in much science fiction is the theme of alienation" (Wolfe, 128). In utopian fiction, change is regarded as an opportunity to improve lives, in dystopian fiction, however, it is rather seen as a fight that humanity needs to pick: "The central issue in these works […] is the inevitability of change and man's ability to adapt to the change" (Arbor, 79). Besides change or alienation as leitmotifs, another important theme in science fiction is the notion of "the unknown". Nicholls says that "[s]cience has brought us to the threshold of actual participation in the unknown" (Nicholls, 190) and this is also being discussed in science fiction. "The unknown is an overwhelming presence in science fiction, and it is the transformation of the unknown into the known, usually by breaching a symbolic barrier that separates the two […]" (Wolfe, 15). Thus, science fiction authors incorporate the unknown aspects of contemporary reality into the constructed realities of their narratives, for instance, incorporating alien creatures or other inhabited planets. In reality, this remains an unexplored field where specific details have yet to be determined, however, in science fiction worlds, these unknown conditions are depicted as establishes realities. *In The known and the unknown. The iconography of science fiction*, Gary Wolfe states that science fiction mainly "deals with what has not happened: that which is neither impossible nor verifiably possible" (18). He continues by saying that this in-betweenness creates a "tension between reality and fantasy" (19). This is why science fiction is increasingly regarded as a genre that serves as a potential predictor of humanity's future. The era in which science fiction stories were considered fairytales featuring impossible or exaggerated scenarios has long passed. Today, the role of the science fiction author is at times conflated with that of of a fortune teller. Many believe that the depicted possible futures in those stories could easily become reality. When we consider early science fiction stories, it becomes apparent that some futuristic depictions, or "predictions",in fact, came true. For instance, Edward Bellamy's *Looking Backward*: this story was published in the late nineteenth century, in 1888, and depicted a smart invention of the so called "credit" cards. Sixty-three years later, credit cards were invented in reality. In the science fiction novel *Ralph 124C 41+* by Hugo Gernsback, written in 1911, various future inventions were depicted in the story, that later appeared in reality. It predicted inventions such as "solar energy, TVs, tape recorders, movies with sound, and space travel" (Willett-

Wei). Thus, it is unsurprising that, in discussions concerning the future, the ideas of science fiction writers are being taken increasingly seriously by certain groups, in particular, pessimists tend to believe that the dystopian representations are on the verge of becoming real. However, one has to keep in mind that fiction stays fiction. The concern of people, nevertheless, is that the fiction can become non-fiction as they realized that humans have enough power to manifest ideas with the knowledge of science and the use of technologies. "Science and technology […] are ways of bringing forth new realities, new manifestations of being" (Bell, 59) and these new realities are mostly presented as prototypes in science fiction stories. N.Katherine Hayles explains the phenomenon like this: "Literature […] is not about reality but what we can say about reality" (Grace, 29). Latest findings in science and novel technological inventions enable new ways of thinking and manifesting, thus people can easily imagine possible realizations that are not there yet. The platform for such futuristic speculations has mostly been science fiction literature. Here, writers can put their creativity on paper or reveal their beliefs of how the future will look like. Reading science fiction is not only pure entertainment, it became a way of finding out of how the world can possibly look like in the future. Utopias, dystopias, new worlds, life on other planets; whichever scenario is being depicted in the science fiction narrative, it is a method of drawing out possible outcomes of our current behavior as a species, whether good or bad. It also is a chance to criticize the current politics in the world, to emphasize governmental issues and to express critique on societal life. Science fiction represents many voices in many worldly issues. It mainly discusses the aftermath of newest sciences and technologies: Again, whether good or bad. "Science fiction is, after all, about science and its impact on the individual and society" (Arbor, 81). *In Dystopian Literature. A Theory and Research Guide*, this genre is summarized as such: "science fiction is a literature set in worlds different from our own- and different in ways that invite the reader to interrogate these differences, to ask "hard questions" about them in terms of what they can tell us about our own world" (Booker, 2009, 3). Science fiction, thus, engages us to think about our current situation as humans and about the possible result of our ongoing development. Imaginable worlds are being presented which show us different future alternatives. Sci-fi stories also tell us a lot about the way we live today—in the process of always wanting to become better—and they also intent to mirror the human's role in the world. Sometimes it is linked with indirect notions of societal and individual issues in today's humanity. Warrick calls science fiction writing a "mythmaking" which includes "mediating between man and his cosmos, creating a pattern to organize chaos and [to] define man's function in the world, suggesting the

individual's role in society" (Warrick, 4). The pace and the magnitude of change are so rapid that people increasingly struggle to discern which emerging technologies and novel innovations are genuinely necessary for humanity, and which may entail unintended negative consequences. In order to make sense of the chaos, science fiction stories try to connect the technologies with the human's role in the world and to name the social responsibility when living in a technological world where there is a thin line between helpful, humane or unnecessary, yet even exploitative technology. In the following chapters the various intentions of technology will be presented and both the positive and the negative aspects will be critically examined. Science fiction literature deals with both sides, as well. Science fiction also tries to debunk that "there has always been a close relationship between technological innovation and social change" and this relation is being depicted in the narratives as worlds who turn out to be a utopia or a dystopia. It is emphasized that new "technologies, cloning and genetic modification also promise to engender a future in which the boundaries between humanity, technology and nature will be ever more malleable" (Grace, 3). This is definitely already the case in the worlds of science fiction. There, humanity is endlessly malleable, as technology becomes more powerful and nature becomes less important. "Technology is one of the major sources of public power in modern societies" (Kaplan, 139), which is not only being recognized in the real world, but already represented as such in science fiction. What transhumans believe to become true in the near future, that humanity will find itself in the age of singularity, is already an everyday life scenario in science fiction narratives. As science and technology grow bigger and mightier, the human species has to face an inevitable change. In *Modern Science Fiction: Its Meaning and Its Future* Bretnor explains: "Science is an effort to make the world become what the idealist wishes it were" (4) and hence science fiction is the platform for manifesting the idealist wishes by depicting possible future worlds filled with new sciences and smart technologies. "One can see in much science fiction a movement toward […] liberation from time as well as space, and the assimilation of all possible knowledge into the framework of a cumulative body of science and technology whose destiny is manifest" (Wolfe, 14) which mainly highlights the unbound position of the human to create himself and his environment freely.

In conclusion, science fiction is a way of positioning science and technology within the discourse of the human's role in the world. Fictional future worlds make suggestions how this relation could look like in the further developed environment of modern humans, may it be cyborgs, posthumans, transhumans, or even some other alien species inhabiting this planet or any other planet in this matter. Science fiction provides us with various ideas of

how our world could assumingely look like if we continue to grow technologies and improve science. "The new technologies seem to offer possibilities for re-creating the world afresh" (Bell, 92) and especially science fiction writers take up on this offer—to recreate the world afresh. Asimov stated that a sci-fi writer needs to be updated on the current sciences and technologies in order to create an authentic scenario of a possible future world. As Grace summarizes it: "Literary fiction meets scientific fact" (Grace, 226). So, before science fiction stories are being created, the very purpose of science and technology should be understood. In *Science Fiction at Large*, Nicholls defines two purposes: "The first purpose of science is simply to keep going. That is, to develop the present state of knowledge into the next state of knowledge, and so on" and the second one "is to produce something useful to man" (Nicholls, 40). When we consider these two goals in the field of science it seems legit that humans want to achieve a development of knowledge and support inventions that leverage humans to gain a better lifestyle. When we link it to the field of technology, then we can say that the first purpose is always being fulfilled, whereas the second one is nowadays being discussed whether this purpose in technology has already been overreached. Many tendencies go towards the claim that this opportunity has been overstretched and that more threats than profits can be observed within newest technologies. For instance, the invention of artificial intelligence. On the one hand, it is very useful to humanity to simplify life within cyberspace, but on the other hand, it can be dangerous when it gets out of control and when AI starts to behave autonomously. Our data, information, and our privacy could be exposed completely and this would be the time where technology would be a game changer—and would turn out to be a curse instead of a blessing. There is a thin line between useful and unessential, like a medal, also technology has got two sides. This particular topic will be touched upon in the following chapters that will discuss the different ages of technological inventions and their purposes and effects for humanity. Also, science fiction literature will be further categorized and put in a context within the chronology of technological inventions.

To sum up this particular chapter, it can be noted that science fiction is somehow a "speculative fiction" which asks the question of "what if". It provides "alternative interpretation[s] of reality [and] the world" (James, 4). Questions like: What if we invent technology that becomes smarter than us? What if computers outsmart us? What if we overuse the resources of nature? What if nature dies out? What if we live in a completely artificially created world? What if we gain immortality? What if we become a completely different species? What if we can live on another planet? What if, what if, what if…? "The great game in science fiction is titled What If, and it is perhaps one of the things that
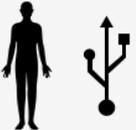
topples a mainstream novel over into the SF category" (Nicholls, 107). "Science Fiction […] can create planets utterly different from our own, or show us parts of this one that might have been, or might still be" (Riley, vii) and this is the wondrous part about science fiction. "Science fiction [can be seen as] the search for the marvelous" (Nicholls, 191). It presents to us possible future worlds and indicates many various outcomes of humanity. It discusses the role of individuals and of the community within a society and addresses current discussions within sciences and technologies. It also observes topical issues in many humanistic fields such as anthropology, philosophy, gender studies, etc. It addresses the conceivable future of humanity in a serious manner, even though it does so through the imaginative framework of fiction. "Its authors, as a matter of course, present their reader with new societies, with possible futures, and consequences. It is social experimentation on paper; social guesses plucked out of air. And this is the great service of science fiction" (Bretnor, 192). It is not only experimentation on paper, but now becomes experimentation in real life, as this work has already explained that earlier science fiction narratives entailed technological inventions that, after years, had been manifested in reality and thus became true for humankind. "Humanity is entering a new direction in its evolution. This is reflected in the current literature, a literature of hope and fear, of argument and propaganda, of speculation, prophecy and exhortation, of escape as well as challenge… It "makes faces" at the faceless future, it is ironic, contemptuous, satiric, puerile, fantastic, but it is also a literature of sober scientific speculation and prediction" (Seidenberg, 157). Optimists who tend to believe in a perfect future, identify themselves within a utopian world represented in science fiction, whereas pessimists position themselves in a dystopian future in which the realization of an apocalyptic world is feared. Whichever position a science fiction writer or reader takes, it is apparent that everyone has ideas and thoughts about how the future world will or could look like for humans and how humanity will change in the following years to come. Science and technology are the raw materials that build the fundament of science fiction narratives and the science fiction writer "can keep that sense of wonder alive, for he is the poet of science [and technology]" (Warrick, 236).

3. The Trichotomy Model of the New Human

As mentioned in the introduction, the methodology of this work is being conducted through the use of a self-constructed model that aims to analyze the following thesis statements.

e) *We will never have an answer for: What is the human? Anthropology of indeterminacy*

f) *We are constantly rewriting the human.*

g) ***There are three human types*** *identifiable within the course of human and technological development represented in contemporary science fiction literature.*

h) *Literary forecast: Singularity: Humans gradually lose control. Humans don't control machines any longer, but machines control humans.*

The Trichotomy Model of the New Human" serves not only to substantiate these claims, but also aims to illustrate the parallel development of science, technology, and humanity, as well as their representations in science fiction literature. The model claims that throughout the historical development of science, technology, and science fiction literature, a discernible pattern in the emergence of distinct human types can be identified. The development of science, technology, and science fiction literature has been categorized into distinct chronological phases, within which the outcome of three different human types have been discovered.
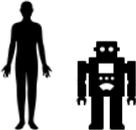
Human Types	Symbols	Age of Technology and Science Fiction	Focus of Development
Type 1: Stronger Human		1970's - 1990's	body
Type 2: Faster Human		2000's	communication / data / information
Type 3: Smarter Human		now	mind

The first row shows the **three different human types** that could be observed throughout the development:

Type 1: The fist type is the **Stronger Human** whose focus is on making himself stronger, especially with the means of body modifications.

Type 2: The second one is the **Faster Human** whose focus lays on the language use of humans in form of communication, data, and information. Here, it is important to mention that this communication takes place in cyberspace, in the newly developed computational world of the human which enables to spread information and data faster than ever before.

Type 3: The third and last human type is the **Smarter Human** who tries to improve his cognitive capacities and wants to create a perfectly functioning brain and mind. Also, memory plays a crucial role in this category. All of this wants to be achieved with the means of newest technologies.

The second row simply shows symbols that represent the three different types.

The third row entails the three different periods of technological and literary developments represented in years:

Period 1: The **first period** starts in the **1970s** and lasts **until the 1990s**.
Period 2: The **second period** is the time around the **millennium**.
Period 3: The **third period** is the most current one which cover the years from **2018-now**.

The final row of the table highlights the specific focus on human development. It can be interpreted as representing three distinct "construction sites" of humanity, each undergoing processes of building, refinement, and continuous improvement.

In summary, the table shows a typification model that infers that there are three different human types to be found in the process of development:

From the years **1970s to 1990s**, science and technology were at a status that enabled to execute bodily changes and to improve physical capacities. Here, the **fist human type** is called the **Stronger Human**. The focus is laid on the **body**, not only in the field of science and technology, but also in the representations of the human and his body in science fiction literature.

Starting from the millennium, **the year 2000**, and followed by the next years, science and technology have developed immensely, especially in the field of computer sciences. The new century was a promised land for modern technologies. The emerged human type, the **Faster Human**, has the goal to perform faster within **communication**. Here, the notion of **information and data** is in the foreground. In this period, the close human-machine relationship is being highlighted, more the human-computer amalgamation, as it is the entity where fast communication takes place.

The last period is the most current time slot. It examines newest science fiction literature written in **2018-2020**. Here, the last human type is being presented, the **Smarter Human**. This type is the most up to date and to be mostly found in human representations in current fictional narratives. The Smarter Human concentrates on the improvement of his **mind**. It is the main undertaking—to improve cognitive skills and to make the mind nonvolatile—in order to be able to gain immortality.

It is important to emphasize that this typification model is is primarily concerned with the literary depiction of the human within science fiction. The development of science fiction narratives parallels the simultaneous evolution of the human species. However, it must be acknowledged that the representations of science and technology in these fictional works often anticipate future advancements and are therefore not reflective of the actual technological realities of their respective periods. For example, the previously mentioned novel *Looking Backward,* written in 18888, illustrates this phenomenon. In this novel, credit cards were mentioned, but not until sixty years later this technological invention became true. Many science fiction authors took the state-of-the-art technology and put it in their narratives, but they also managed to often expand the current technology with new ideas or improved versions. Thus, the most recent works of fiction analyzed in this

study may hypothetically depict advanced versions of the latest available technologies and offer subtle indications of how the near future might unfold.

In the following, the three different periods will be examined in a diachronic approach, as well as the three different evolved human types will be presented in the same chronological manner. Each typification analysis starts with the real life scientific and technological status of that particular period and then continues with the discourse of science and technology in science fiction literature of that time. Subsequently, within each of the three typification categories, three novels will be analyzed to identify representations of distinct human types. Ultimately, these analyses aim to substantiate The Trichotomy Model of the New Human.

4. Type 1.0. : Stronger Human—Bodily Enhancements

"There is nothing fair about the natural lottery: allowing enhancement may be fairer"

(Kaplan, 427).

As previously established through the work of anthropologist Helmuth Plessner, the human entered his existence with natural deficiencies. His natural nakedness left him exposed in nature, which is not the appropriate environment for humans to thrive. Thus, he quickly realized he must build himself an environment of his own, artificially, in order to make up for the faulty natural being that he is—especially in respect of his body. And so he did. With the gift of the mind, of reflective thinking and creative inventions, the human was able to develop sciences and to create technologies that would help improve his life. Inventions like drugs or prostheses help the human to enhance the body, so that he can perform better and make life easier. In *Virtual Worlds. Culture and Politics in the Age of Cybertechnology*, Nayar Pramod discusses the role of the human body. He states that human bodies "have never been truly 'natural'. Dieting, exercising, ornamentation, posture training, fashion, medicine, stimulants and surgery have always 'altered' the body" (211) and he is right. From the very beginning of human existence, humans have tried to alter their bodies in various ways. Already in the stone age people have changed their bodies by adding ornaments, tattoos, or using plants that could help change the mood or relieve some pain. For instance, the history of tattooing goes further back than most people would expect: "Only heaven knows exactly when the first man, or half-man,

first added some natural ornament to his body, or a woman to hers. Not long after, […], the first primitive attempt was made at putting permanent decoration, or magic sign, on the skin. If so, it would be a proud claim for tattooing that it was one of man's first conscious acts which distinguished him from the rest of the animal kingdom" (George Burchett, Memoirs of a Tattooist (1958, 14–15, ed. Della Casa, Witt, Deter-Wolf,15). The history of human body modifications go far back and the development of better techniques and more possibilities of bodily alterations are apparent today. Historically speaking, these modifications had many different reasons and came along with a "social, civil, political, military [or] ritual importance" (15). "In every group of humans in known and recorded history, there have been members who modified their bodies" (St. Leone). As cultures and societies change within years, also the image of a "normal" or "ideal" body changes, especially in the field of aesthetics. Whereas white skin and curves were part of an "ideal" body in medieval times, later the image has changed to an "ideal" body with tanned skin and a skinny figure. Plastic surgery became a trend and many alterations were made to the body, such as augmentations in form of silicone, or the other way around liposuction of undesired fat in certain body parts. Also "putting on another face" became easier through plastic surgery. Not wanting to live with the natural parts of one's own face and wanting an "ideal" nose or "perfect" ears, for example, could be observed in many individuals and so plastic surgery became a societal trend and is nowadays somehow normal. In fact, in 2019 a total number of 11,363,569 plastic surgeries were count, including the mostly conducted procedures of breast augmentation and liposuction, but also facial lifting and facial bone contouring became more popular and raised in number (ISAPS, 9). What once was considered special, is now as ordinary as everyday life itself. Actually, "it would be pretty hard to find a woman these days who doesn't have her ears pierced, and one of the most involved, long-term, and committed types of body modification, bodybuilding, is not often even considered to be so. And, of course, surgical body modification has become extremely common in the form of cosmetic surgery, (St. Leone). In the *Human Enhancement Debate* it is even stated that "[d]eficiency is in everybody and, therefore, everybody can and shall be improved. (Schües, 57, Human Enhancement Debate). Not only body enhancement is an important topic today, but also the debate on the rights to express freely as an individual. Especially today, in the 2020's, free expression of oneself is very much in the foreground of individuals' lives and of society, may it be expressions of bodies, sexes, sexual orientations, societal or political standings, it has never been more of a debate than today. Overcoming outdated norms or stereotyped thinking is the biggest goal of today's

humanity. Being free and unbound and becoming whatever one wants to become, and above all being accepted as such, has been more present than ever before. Especially, when it comes to the body. One can be sure that "it's safe to say that humans will continue to reshape and redefine themselves by modifying their bodies" (St. Leone). Indeed, Plessner claims: "Everything living exhibits plasticity: it can be pulled, stretched, and bent in a way that brings together the distinctiveness of the whole's boundedness with an extreme shiftability of its boundary contours" (Plessner, 2019, 116). So, why not pull, stretch, bend, alter, modify the body in such a way that the human is content and can become the way he wants to be. Couldn't it be regarded as "natural" human behavior and "natural" desires? Since the striving for development and the desire to thrive is also naturally human? However, humans do not want to trust completely on biological evolution and strive for more, for control over their natural development. Science and technology make it possible. However, it even goes further as humans do not simply accept any limitations when it comes to their development as beings. Not only body modifications are part of the plan, but also the wish for mind enhancements is constantly increasing, since newest technologies promise a huge improvement in this respect. The notion of mind enhancements, however, will be addressed as the final category of human development later in this study. Body modifications can be regarded as the starting point of enhancement and of human's self-performed evolution. But what does enhancement mean exactly and why does the human want to take evolution into his own hands? "Enhancement is an intervention into the body and the self that concerns and alters a person's self-understanding and self-actualization, and thereby the *conditio humana*. (Schües, 38). This conditio humana, according to Plessner, is the natural condition of the human that he finds himself in eccentricity and creates himself an environment and hence develops freely unbound from biological givings. The human condition is naturally artificial. And why don't we humans accept our biological evolution process and want to intervene and control our thriving?   As mentioned before, the human is a natural deficient being and is being exposed in his "naked" form in an environment that does not fit his needs. Thus, the human creates himself an own environment and therefore lives naturally artificial in this world. It is in human's nature to create artifacts and to be unbound to nature. It is fact that "man will take his own evolution in hand, with the aim of not just preserving the integrity of the species but of modifying it by improvements of his own design" (Kaplan, 182). "The territory we now claim is our own body" (Schneider, 235) which we can alter and modify in such a way that it changes its natural form and enhances in strength, power, and endurance. Gerald Hartung says in his work

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Philosophische Anthropologie, that it can only function when, in the process of "human enhancement", the human disconnects himself from his evolution history and leaves his faults like structure of desires, disease, and death, behind (127). Liggieri goes further and claims that the focus lays on visions of an evolutionary development and an eventual overcoming of [natural] humanity through a man-machine symbiosis or through a mechanization of the human body" (Liggieri, 71). We modify and enhance our bodies to become stronger and better humans. The mingling of man and machine makes such a goal achievable. As N.Katherine Hayles discussed in her works, the new evolutionary possibilities of humankind make it possible to be half biological half mechanical, to build a natural artificial world with the means of technology. So, in this new world humans become cyborgs. In *Mensch-Maschine-Interaktion,* it is stated that the "cyborg continues the non-natural, technical evolution of the human […]" (Liggieri, 184). Plessner and other scholars have stated that for the human it is natural to want to develop further and to thrive even if it means leaving his nature behind and creating something artificial. This human condition will always be the striving for more. We fear death, we daydream about physical and mental prowess, we want the very best for our children. These are normal human emotions, and it is difficult to imagine that they will ever change (Schües, xi). Humans believe to be having unlimited possibilities for forming their lives to its highest potential and although it may sound fantastical, this idea has exited since the beginning of human's culture and the fulfillment of all desires, the abolishment of all physical suffering, and the obtaining of immortality is a fantasy for human existence (Hartung, 128). "What the human can be and the way he is situated in the world ought not to be understood in such a way as to receive him of his natural ties to procreation, birth, and death." (Plessner, 2019, xxiv). In *Levels of Organic Life and the* Human, Plessner also differentiates between "[…] the body I am and the body I have […]" (lvii) and states that even though having a body, coming into existence already with a body, is a human precondition. However, this does not mean that we are forever bound with our natural body. We have the body, but we can also be a body, so become another body. We can alter, modify, change our body from the inside, so that we can overcome the preconditioned outer bodily limitation. Kai Hauke agrees that the human not only has body, but "is body, inside the body as a soul, and outside the body" (Hauke, 157). Just like Plessner, he claims that the outer body, the one we have, is the body that functions as a shell, and the inner body is the body we "are", our soul. When speaking about human bodily enhancement, more likely the outer body, the one we have, is meant. The goal of its enhancement is to make it stronger and better functioning. However, there

might even be a human idea to change the inner body, the human soul, so the true meaning of humanity. Whether it will be ever possible to completely alter the inner body remains a central question in science fiction, but it has also become a seriously discussed topic of newer sciences, too. The use of technologies to change and enhance ourselves is aimed towards making our existing human species better and not to creating a new species altogether, not yet anyhow. However, the question will be: how human will the new human be? When we distinguish between the natural body that we have and the modifiable body that we are, where is our human identity then? "Since we live and through our bodies, very much *being* this particular body rather than merely having it, we find it difficult to pretend that the internal and external constitution of our body has little or nothing to do with our identity: with what makes us us" (Hauskeller, 133). If there is almost now natural human in human left, how much of a human is he then or can he then be regarded as a being of a newly emerged species? "But there certainly also has always been the idea that there is more to the human than the recent type of human, a human that is more perfect than the human of flesh and blood who certainly has come out of trend during the years", so couldn't the enormous change of the human species simply be "a new naturalness of the human" (Irrgang, 9)? This discussion is reflected in various science fiction narratives as well as in contemporary scientific and technological developments, as will be demonstrated later in this study. "Because the human in human beings always strives for the same thing, he always changes and becomes other" (Plessner, 2019, 316). This early statement made by Plessner in the 1960s already demonstrated that, at the outest of humanity's technologically modern era, the ontological question of what it means to be human had emerged. In the modern human enhancement debate it is rather seen as a given fact that we are human and always will be, no matter how much we change. Especially, transhumanists see humans as creators of their own life, they can choose and create their lives themselves (Heilinger, 106) and still not lose the "human" in themselves, since according to them, it is human to change and to develop and to thrive unconditionally. Descartes made an interesting notion. "He interpreted the body as a machine (hydraulic): he compared the heart to a hydraulic pump, the neural system or blood vessels to a tube system, the functioning of the body to a clockwork" (Descartes qtd. in Liggieri, 150). This shows that it's natural for the human body to function for a special purpose and that humans strive to improve their own body as machine. Prokić goes further by saying that the "body evolves as a machine, for which consciousness is held responsible, because it can control and manage the body" (Prokić, 175). So, a system is needed that controls the machine, in the case of the human the

system is the mind, the consciousness, that controls the machine, hence the body. In *Kritik des narrativen Selbst. Von der (Un)Möglichkeit der Selbsttechnologien in der Moderne*, Tanja Prokić explains that humanity today doesn't see the body as a given fact and therefore doesn't accept the liminal condition of nature, but rather sees the body as a modifiable part of its existence. "The body is shaped, sculpted, beautified and improved constantly [and all] cultures have had practices that augmented, ornamentalised and controlled the body's appearance, functions and capabilities. The body is no more a 'given' […], the body is now a 'project' "(211, 223). Michael Hauskeller even claims that we humans "not even seem to need a body, at least not a functioning one, to interact with the world" (Hauskeller, 116) and he continues by summarizing the human's relation to his body as such: "For as long as we are hooked to this organic body, we shall never be entirely free and safe" (Hauskeller, 117) which again shows the human's bodily limitation by nature and the desire to overcome this limitation by creating an own environment with the help of artifacts. The human then can be free and unbound and develop as a being as it is his natural desire. This conditio humana can be fully lived within the artificial nature the human creates himself. "'Flesh-and-bones' is a material that is deemed unsuitable for an advanced, dignified, enlightened and happy existence" (Hauskeller, 117). This human 'flesh-and-bones' material is being replaced step by step with more durable and stronger material that can empower the human's body. Adding artificial parts to the body is what we more often witness "as an increasing cyborgization of the human, where "cyborg" can be defined as a human being some of whose parts are artificial" (Hauskeller, 117). The human power to change parts and to replace it with artificial ones in order to make something better and stronger can be especially found in the means of the human body. This discourse is apparent in sciences and technologies which are most notably represented in science fiction literature. The Human Enhancement Debate links the prospects of human enhancement, especially bodily enhancements, with the ability of newest technologies. "There is virtually no part of the body whose appearance cannot be, in some way or other, enhanced" (Hauskeller, 135), but also the body's functionality and strength can be improved, as well. "Physical strength is the most obvious, the most visible, sign of superiority" (Hauskeller, 150) which the human wants to achieve in opposition to his natural nakedness that reveals his biological deficiencies. With superiority over his biological condition, over nature and its environment, the human takes a stance against it and reveals the power of his mind and consciousness which makes him superior as a species. Hence, his mind makes him already superior and so he also wants to make his body this way. His natural body is deficient, therefore the human has

the desire to alter the body in such a way that it becomes as powerful and "indestructible" as his mind. Hauskeller explains it like this: "The world we live in may, if unchecked, thwart our aspirations and even kill us, but it is our own human body that allows this to happen in the first place. So in order to be safe, it seems that controlling our environment is not enough; we also need to gain complete control over our bodies to compensate for their natural frailty" (Hauskeller, 115). Technology makes it possible. The use of technology is not only for creating objects that would facilitate life, but that would also modify the own body which shows that the focus on the man/machine relation implies the view that it is the human who is faulty in the optimized technological environment (Hartung, 127). The transhumanist Nick Bostrom agrees that "we shall 'in this century master technologies that will enable us to overcome many of our current biological limitations' and thus 'get the opportunity to truly grow up and experience life as it should have been all along'" (Hauskeller, 169). What is meant with "life as it should have been long ago"? It means to be able to fulfill the natural human needs and desires, namely to overcome biological deficiencies and to develop and to thrive further. This is, after all, the conditio humana. In this case: "Technology is no longer a prothesis, a secondary 'addition': it is us" (Nayar, 28).

In conclusion, this chapter discussed the human's need for bodily enhancements. The need for intervening in the biological process of evolution results from the deficiencies and the inaptitude regarding the natural environment. The human needs to face the fact that his natural being is unsuitable for living in the given environment. Hence, he creates himself his own suitable environment, an artificial one. Since this behavior is normal for the human species, one can call it the human's artificially natural habitat. In fact, in this case it means that "[t]aking a stance against nature becomes a matter of survival and of self-affirmation" (Hauskeller, 178). Moreover, creating artifacts is a natural self-expression of the human. He thereby shows his eccentric positionality towards his body and the natural environment. Especially, the invention of technologies and the subsequent possibilities to alter the own body indicate that it lies within the human power to create the world according to the own needs and desires. Also this "seems to be the whole point of human enhancement: to become able to choose what we are" (Hauskeller, 165). It does not matter what we become, what we change ourselves into, the "human" in human will always remain, which is the conditio humana, the need to develop outside natural borders. Michael Hauskeller concludes the conditio humana as such: "Humans come into existence with no particular purpose, which allows them to find their own purpose in life" (Hauskeller, 5) and this is what surely constitutes the human species. So, whatever

we humans become or will become in the future, "[t]he only thing that ultimately matters is our own existence" (Hauskeller, 179). "It is primarily an attitude about overcoming the limitations of the human form—age, decay, disease, intelligence, looks—through technology" (Nayar, 71) and that is "human enhancement", a delimitation of the natural human body through genetic modification, technological equipment and plastic surgery (Hartung, 126). In *Beyond Human. Engineering Our Future Evolution*, Erik Seedhouse thinks that "[…] the urge to tamper with nature is pervasive among humans [and] that it is [however] human nature to modify oneself […]. He believes that "when genetic engineering becomes as accessible as plastic surgery, you can be sure people will be lining up" (Seedhouse, 4). This leads to the point that humans also aspire to gain control over their evolutionary process, so that they would not stand there revealed as in their origin, naturally naked and deficient. In fact, Darwin's cousin, Francis Galton, suggested "artificial improvement of the human race through controlled selective breeding" (Ingold, 65) which could verify Seed's notion of the human's pervasive tampering with nature. However, transhumanists think that the enhancement of the body "is not an elimination, but a (biological) expansion and overcoming, or more, a transformation of the human" (Vaas, 89). This urge for overcoming the natural condition can be seen as "a form of escapism" (Warmbier, 215). The human is only then free of fault when the human organism corresponds completely to the requirements of his second nature, the artificially created cultural world (Hartung, 127). This fitting into the artificially created cultural world is being manifested through, inter alia, the means of modern technologies. In fact, the human's modern habitat can be called the "culture of technology" (Nayar, 47) in which the "deficient species of man [can look] for compensatory replacement of everything that has lacked him naturally" (Irrgang, 9). Freud said in *Civilization and Its Discontents*: "man has, as it were, become a kid of prosthetic God" (Wills, 68) which nicely sums up the human's nature to create an artificial life. The human's desire to intervene in nature and their own evolutionary process "is said to be characterized by: the enhancement of the capacities of the human body by means of prosthetics, neuroprosthetics and cognitive implants; an extended lifespan; asexual reproduction; the ability to prevent disease; the construction of man-computer interfaces; and the development of artificial intelligence, genetic engineering, and neuroengineering, etc" (Warmbier, 279). It becomes obvious that the process of improving doesn't stop with the human's body. It rather starts with the body and is continued on a deeper level, such as changing the mind and the human's true nature. These further levels of enhancements will be discussed later in this work, as the different "types of humans", developed through technology, are presented

chronologically. The first type emerging through bodily enhancements, the stronger human, marks the initial attempt to alter the human species altogether, beginning with the superficial layer, the body itself. In D.H.Lawrence's 1928 novel *Lady Chatterly's Lover*, one of the characters articulates a statement that aptly captures the human species' intrinsic desire for bodily enhancement: "Help us to get rid of our bodies altogether", said Winterslow.—"It's quite time man began to improve on his own nature, especially the physical side of it" (D.H. Lawrence, *Lady Chatterly's Lover* qtd. in Hauskeller, 115). In the next chapter it will be explained in detail what specific technologies are capable of "getting rid" of our natural bodies and of improving the physical side of it through technological alterations, modifications, and enhancements.

4.1 Technology between the 1970s-1990s: Biotechnology

"The territory we now claim is our own body" (Schneider, 235).

"The territory we now claim is our own body". This citation shows that the body is not seen as a natural condition, a given fact, any longer, but rather as an object that can be modified. Moreover, the body is the human's new project. In order to obtain this project successfully, technology revealed its multiple merits that could help achieve the human's goal—to become better. "Technology is the art of the possible" (Liggieri, 5) and so it makes the human project—the enhancement of the body—possible. This chapter aims to present the technologies that emerged in the years 1970s-1990s, especially in the field of biology. The newest inventions of that time will display how the matter of body enhancements developed and what technology could achieve in relation to the transformation of the human condition. Technologies from other fields will also be referenced in order to construct a broader historical context for the development of science and technology. Moreover, biotechnology will be situated within this wider framework, highlighting its role in the overall trajectory of technological advancement. The first remarkable technology appearing in the 1970s was the one used for space science. In fact, in 1969, it became feasible for the first time for humans to land on the moon (Headrick, 137). NASA's *Voyager Program* developed technology in this field and built orbiters and landers. The very first mission started in 1973 (David S.F. Portree). It was now able to better explore the solar system and to examine other planets. This represented a

significant milestone for humanity, demonstrating the capacity of humans to operate beyond the natural environment of Earth. Humans were able to extend their exploration beyond the boundaries of Earth, reinforcing the perception of their position as the most dominant species. Scientific achievements in this field reached a significant peak during this period. Also in physics, scholars made serious discoveries. In 1970, Stephen Hawking, for instance, developed his black hole theory (Hawking, 51). Many inventions, especially after the Second World War, started to change human's life drastically. As a matter of fact, there was one field of research that experienced many scientific breakthroughs in that period of time: "Biology made the most dramatic progress of any science after World War II. […]. The most notable development in biology, however, was the rise of genetic engineering (Bunch, Hellemans, 543). "The goal of human genetic engineering is the alteration of a human's genotype, or inherited genetic information" to improve the very core of humans (Seedhouse, 13). In general, the field of biotechnology started to thrive. "Biotechnology is the application of science and technology to living organisms and their parts, or to products and models of living organisms, in the hope of producing understanding, goods or services. […]. "We can directly engineer the genes of organisms to produce the traits that interest us, clone animals that posses these traits, or even create synthetic organisms capable of performing desired functions" (Talbot, 4). Biotechnology made it possible "for expert interventions, into the human body" (MacLachlan, 10). In 1972, for instance, the so-called Cat Scan was invented, a tool that could scan the body and help physicians to look inside the body (Bunch, Hellemans, 621). In fact, the most significant advancements of that period were found in the field of biology, particularly concerning the *bios* and *logos* of the human being. This scientific field can be considered "the biology of health and reproduction" (Headrick, 144) as humans desired to overcome all of their natural malfunctions and unnecessary drawbacks caused by diseases. Inventions, that already appeared much earlier, such as the antibiotic penicillin, gave mankind more possibilities to fight diseases and to intervene in the natural condition of the body. The combining of medical sciences with technology played a major role and led to crucial inventions such as performing heart transplants or implanting pace makers. Between the 70's and the 90's, especially within the discourse of biotechnology, there came "major changes in our knowledge of how some diseases are caused and how they may be avoided. (Bunch, Hellemans, 548). Not only was the focus on avoiding diseases and expanding life expectancy, but also on the discussion of intervening in the evolutionary process of humans and taking control over lives before they even begin. A technology "that gained considerable notoriety" was in vitro

fertilization. In this process "sperm and egg were united in a laboratory, and the resulting fertilized egg then implanted in the prospective mother's uterus. The first "test-tube baby," Louise Brown, was born in 1978. Since then, there have been several thousand such births […]" (Headrick, 144). It was an important achievement for humankind to be able to control the biological process of producing offspring. It demonstrated the extent of technological power and its capacity to enable humans to exert control over their lives beyond the constraints of natural conditions. "Technological intervention in human reproduction is a new norm" (Pitt, 224). Another crucial scientific ground was the one of molecular biology. "In 1972-1973, two Americans, the biochemist Herbert Boyer and the geneticist Stanley Cohen, began splicing genes from one organism into another. They and others developed laboratory equipment that could replicate millions of copies of DNA in a few hours by a process called *polymerase chain reaction*. Such equipment made it possible to turn successful laboratory experiments into industrial products" (Headrick, 145). However, this process couldn't be successfully performed on a human's DNA yet. "The genetic manipulation of human life still lies in the future, but the techniques are already common in agriculture. Humans have influenced the characteristics of useful organisms" and have managed to genetically engineer foods, for example, in order to induce a faster growth and a better crop (Headrick, 145). Another "controversial technology" that has not been performed on the human yet "is cloning, the creation of a […] genetic "twin". The sheep Dolly, born in 1997, was the first successful case of a cloned mammal and was followed by the cloning of other animals". Although, "[a]s of yet, no human being has been cloned, but the technology exists" (Headrick, 144). One reason for the assumption that cloning humans could be possible is the Human Genome Project that appeared in 1990. It deals with "deciphering all human genes" (Bunch, Hellemans, 709). "As a result of the Human Genome Project, which is responsible for decoding the entire genetic structure of humans, […], it is apparent that there is great potential for genetic manipulation of the human species" (Pepperell, 9). Michael Hauskeller makes interesting notions regarding the discourse of genetic engineering. In *Better Humans. Understanding the Enhancement Project*, he states that "[n]ormally, at least, our talents (if not our powers) are beyond our control. However, genetic engineering might help us change this and induce talents that we would not have had otherwise" (165). He further says: "Perhaps it will turn out that "adding genes" does not have the desired effect but, again, that does not mean that we should not at least try" (2) and he further emphasizes the merits of genetic engineering by concluding with a citation that expresses the hope that "[…] through genetic intervention, we may finally get rid of "stupid children" and "ugly

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girls" (Brave qtd. in Hauskeller, 10). This statement clearly demonstrates the ongoing development of technologies and their application by and upon humans. It originated with early technological innovations aimed at improving daily life and turned out to become technologies on or in the human himself that not only "correct" his natural inner or outer malfunctions, but even improve his appearance and undergo an "aesthetic repair" which is not existential for surviving as a species. This indicates a form of "greedy" behavior toward technological power or even an "out of control" situation within the technological world. Humans realized at an early stage that artificial tools and technologies could be used to improve the functioning of the own body in order to perform better in life. However, they also realized very fast that technology could be used for anything, be it for deeper cognitive transformation or for superficial modifications to improve physical appearance. In many scholarly discourses it is being discussed whether such an expanding technological use for various purposes can be legitimized ethically. "A society that engages with technology, needs a strong inner power to not get seduced by the goals, to not become voracious" (Weizenbaum qtd. in Liggieri, 165). Plessner thinks that, already in the renaissance, people started to think that the monotonous development can be seen as a mirage and that this leads to wishful thinking and obsessive ideas (Plessner, 1964, 3). Also Plessner asks himself regarding the human: "Why are his needs such that they cannot be satisfied naturally? Is it because he knows he must die" (Plessner 2019, 295)? The human capacity for consciousness can be regarded as both a blessing and a curse. Aware of the limited time on earth, humans strive to maximize their lives' potential, which in turn motivates the continuous effort to enhance and perfect themselves. In addition, humans seek to get control over their lives and even over their natural evolutionary process. One of the primary objectives is to expand the life span with technology playing a pivotal role in achieving this goal. As previously noted, the greater the possibilities arising from modern technologies, the greedier people become to exploit these technologies for any kind of purpose. "And because this gives rise in him to the subjective desire for the ever new and ever different, for upheaval, adventure, and pastures new, he thinks that unprecedented means are always required for its satisfaction" (Plessner, 2019, 316). So, the goal to avoid diseases or to expand the life span emerge as increasingly prominent goals, namely to try overcoming death after all, to gain immortality. Also, Heilinger thinks that the biggest hope for humans in new biotechnologies is the overcoming of mortality (Heilinger, 2). Again, the question of whether this voracious use of technology is essential for the survival of the species or rather unnecessary or even threatening, remains a subject of continuous debate.

Bioethics is the field that critically addresses this very debate. "Because biotechnology enables us to do many things human beings have never been able to do before, it has generated and will continue to generate many new ethical issues, issues concerning what we *should* and *shouldn't do,* and many new social issues, issues concerning what we as a society should and shouldn't allow, or should or shouldn't fund. Bioethics is the discipline that studies the actions permitted by biotechnology—actions like cloning or genetic engineering—and asks whether or not these actions are morally acceptable, and if so how we should manage them socially in order to promote citizens' welfare, protect their rights and treat them fairly" (Talbot, 6). In fact, the main question of bioethics is: What does it mean to be human, if humans can transform themselves through biotechnology (Heilinger, 17)? Since "[…] we are unavoidably in technology" (Wills, 63), we are also unavoidably in the process of transforming ourselves, in becoming other. Hence, ethical assessment is difficult because when a complete new form of human life arises, the old ethical values and form of assessing it are incompatible (Heilinger, 3). So additionally, human enhancement deals with moral legitimacy (Heilinger, 177) and is mostly concerned with the nature of the human (Heilinger, 191). As has been noted before, many new scientific technologies in that period of time occurred in the field of biotechnology. The *bios* and *logos* of the human were in the foreground. In *Dorsality. Thinking Back through Technology and Politics*, David Wills makes an interesting notion as he observed a shift in the focal point of science. He suggests that *bios* and *logos,* the human's core, changed during the thriving of technology and the focus now changed to the human's relation of *bios* and *techie*, so of life and technology. "At a moment in which the human appears to be moving inexorably forward toward a biotechnological future, it is strategically important to recognize—to be *cognizant in return* of—the fact of a relation between *bios* and *techie* so complex and so historic that any presumption of the priority of one over the other can be sustained only by means of an appeal to a metaphysics of creation. […]. This is not to replace the organic with the mechanical but to argue against any rigorous purity of either" (Wills, 5-6). It is interesting as such, because regarding the human existence, *bios*, meaning life, stays, but the entity being replaced here is the *logos,* meaning "study" with *techie*—"technology". It indicates that the human life now naturally entails technology, hence mechanical and artificial means. It also highlights the reciprocal relation between science and technology, as it describes the development of a science, a state where something is being studied, and later becomes a technology when this particular science is being manifested in, for example, experiments or inventions. Wills intends to underline that the human life of today is both: organic and mechanical. There is

no priority of either, but a coexistence on the same level. However, the term "replacement" is still important when it comes to body enhancements. The goal is to replace organic body parts with better, more resistant mechanical parts. Even though, there is no priority of organic or mechanical in the human, it is apparent that the mechanical is more and more used on or in the human body to develop more durable and stronger body parts that guarantee a better adaptability in the human's "natural" habitat, the culture of technology. Humans now inhabit a world in which technology objectifies the body, and furthermore, individuals increasingly perceive and treat their own bodies as projects subject to alteration and enhancement. Given that replacement plays a significant role in discussions on body enhancement, the new term "technology of replacement" was coined which relates the human discourse with the one of technology of that time. "*Technology of replacement*, is concerned with the ways in which parts or functions of the body can be replaced and incorporated into a new body image (MacLachlan, 15)". The new body image spanning the period from the 1970s to the 1990s had already been introduced: the new body image aims to create a stronger human. A more durable, healthier, stronger body that can endure diseases and aging. The human is completely aware of the natural deficiency of his body, his "nakedness", so it is no wonder that "the reality of bodies—fragile, permeable and open to diseases and damages —cannot be disregarded" (Boller, 4). Hence, body enhancements became important and are now, we are talking about the 1970s-1990s, on the verge of becoming the new focus of human life and development, new horizons in the field of science and technology appear, but also new projects on the very human himself.

To conclude, between the seventies and the nineties, newest technologies were revealed, inter alia, in biotechnology. As, decades ago, there have already existed inventions such as glasses to improve a human's sight or prostheses to replace it with dysfunctional organic body parts, the mid twentieth century developed as so far as crasser body modification were now feasible from the inside. Before, there were already possibilities to change the body performance from the inside, through drugs, for example. The enhancing effects of drugs had already been discovered many centuries ago. However, now, between the 70's-90's, humans had bigger goals regarding body changes. They wanted to intervene in the biological process of evolution and strive for technologies that could change the very core of the human, his natural composition, his genetics. Genetic engineering was the mostly researched field in that period of time and humans started to intend more than just superficial changes on their bodies. The aim went towards a technology that could help alter the body from the very inside and to maybe even

overcome disease and death. This utopian thought grew stronger and stronger with the sciences and technologies that became better and better. New technologies became very promising and so humans, as the inventors of such technologies, felt more powerful. Plessner names two reasons for this utopian standpoint the human puts himself in: nullity and transcendence (Plessner, 2019, 316). On the one hand, the human finds himself in a naturally deficient state, in nullity, so he compensates these shortcomings with the power of his mind that, in the end, brought up science and developed technology. Hence, the human's optimistic view towards technologies, perhaps even the voracious attitude towards bigger visions for the human species, derives, according to Plessner, from his transcendental nature. "There are too many dichotomies that humans don't want to accept: the ones of wishes and reality, the unbearable of bodily and mental limitations, as well as the knowledge of death. It doesn't have to be a reaction of forceful improvement, but a reaction of escaping the despair" (Vaas, 89). What the human started as a "form of escapism" (Warmbier, 215) and a matter of surviving, turned out to become a powerful belief that anything is possible when it comes to changing the human condition and overcoming his limitations that were given by nature. Initially, minor modifications were made to the human body, both externally in terms of appearance and internally to address malfunctioning organs, often through the use of pharmaceutical interventions aimed at enhancing bodily performance. Over time, these minor alterations evolved into more significant transformations, and with the advancement of highly sophisticated technologies, an increasing number of modifications to the human body have become possible. This development leads to the next significant invention that must be addressed when examining the period from the 1970s-1990s: the computer. Even though this particular technology will be thoroughly discussed in the next chapter, as the next chapter covers the years 2000s and will focus on computer science and data technology, it is important to also mention it in this respect, since computer technology started to thrive before the millennium. Actually, "[s]ince the Industrial Revolution, technology has exerted an important influence on the way people live" (Bunch, Hellemans, 542). Machines became an important factor in the working environment. Automation processes facilitated work operations and computers became appreciated co-workers. In addition, the presence of computers in private households became increasingly commonplace, especially in the nineties with the rise of the World Wide Web. "By the mid-1990s, "surfing the net" was an activity like reading the newspaper, listening to radio, or watching TV […]" (T.Poe, 215). This brought new dimensions to the human's way of life, moreover "[t]hese advances change the texture of everyday life" (Bunch, Hellemans, 543), even up to today.

Especially, during World War II, military devices were invented that would later on also enter the normal life of humans. "Computer networks, like so much else, originated with the demands of the military" (Headrick, 142). The one invention "overshadowing all other electronic devices" invented during wartime was the computer. "Unlike other machines, computers are not designed to carry out a specific task but can process any sort of information, from typing papers to guiding space probes. The reason they are so versatile is that they transform all information into binary digits—strings of ones and zeros—that can be added and subtracted following the instructions contained in a program, hence the name *digital* computer" (Headrick, 140-141). The era of digitization started. The very first computer network was called ARPANET and it could create a link between four computers in the year of 1969. "Protocols developed in 1983 allowed all kinds of computers to communicate with one another. The result was the Internet, a network of networks" and a couple of years later, in 1989, Tim Berners-Lee developed this technology further and created the World Wide Web. By the year 1998, "130 million [computers] could access the Web" (Headrick, 143). This meant a new way of life for the humans. The world could happen digitally. A crucial turning point in humanity. This particular topic is going to be thoroughly discussed in the next chapter, as it represents the second type of human within the development of technology.

4.2 Negotiations of the Human Body in Science Fiction

"'Flesh-and-bones' is a material that is deemed unsuitable for an advanced, dignified, enlightened and happy existence" (Hauskeller, 117).

When examining technological inventions aimed at enhancing the body or addressing its deficencies, it becomes evident that there has been a shift in the focus of technological development. While early technological developments primarily produced artificial objects intended to facilitate human life, it was soon discovered that technology could also be integrated with or implanted into the human body, not merely to enhance the quality of life, but to fundamentally alter human existence itself. As the enhancement of the human body has long been a subject of discourse within the fields of science and technology, it has simultaneously been explored in literature, particularly within the genre of science fiction. As Hauskeller has articulated expressively: "'Flesh-and-bones' is a material that is

deemed unsuitable for an advanced, dignified, enlightened and happy existence" (Hauskeller, 117). Regarding the human's need to exceed the natural scope of possibilities, the natural body made of flesh and bones is indeed creating constraints. Not only has it been thoroughly discussed in science, but also in literature. That is why this genre probably is called science fiction. It also participates in the discourse of the human and his body and his life on earth. Literary scholar David Brin describes the process of defining science fiction as such: "Many people have tried to define science fiction. I like to call it the literature of exploration and change. Whole other genres obsess upon so-called eternal verities, science fiction deals with the possibility that our children may have different problems. They may, indeed, be different than we have been" (Brin, 186). As already mentioned in the former chapters, the key aspect of humanity is development and, moreover, change. For the human: life is movement, life is change. So, in Brin's viewpoint science fiction is the platform to explore possible varieties of change and to discuss the thinkable future of humans. He also makes an insinuation towards the outcome of the future mankind. He says that future generations might be dealing with other problems than those which exist of today. Probably, he visions two different outcomes in a future ruled by the "culture of technology". Either it can enable limitless thriving, or it can cause an aftermath that hasn't been considered before. It could cause massive problems and leave a fracture in humanity. This leads us to the two different possibilities of literary depictions of the human's future. As mentioned before, science fiction narratives can either depict a utopian or a dystopian world. Regarding the discourse of human body enhancement, most narratives, however, included both—advantages and disadvantages of body enhancements. The science fiction narratives of the 1970s began to see the merits of technological body enhancements. They mostly describe a stronger body without any diseases or malfunctions. The represented bodies entail technological parts such as artificial limbs, links to computers, or genetic modifications. Anyhow, as much as successes of man-machine amalgamations, of cyborgs, are presented, also fails of the attempt to combine man and machine are discussed in the stories. This was likely the cause because, during that period in the 1970s, the application of biotechnology and experimentation with technology on and within the human body represented a new and largely uncharted territory, requiring a cycle of experimentation and correction to foster continuous progress and to keep improving. Not only to keep improving sciences and technologies, but also the human himself, especially his body, which was the focus of that time. Isaac Asimov once said about science fiction that it "can be defined as that branch of literature which deals with

the reaction of human beings to changes in science and technology" (Asimov qtd. in Pitt, 306). Indeed, people started to react to changes, especially when new discoveries in biotechnology were made. This enabled new possibilities for the human, for their very own being, their bodies. This reaction happened in form of wanting to make use of these new technologies to change oneself—through body modifications.

"James awoke with a start: today was his 122nd birthday and he was going to choose his children! […] Artificial sperm had been available for years. […]. Disability and disease (other than annoying ones such as the common cold) had also faded into history. James couldn't imagine a world in which parents might be told, after the birth of a child, that something was wrong with it. […]. Not only was everyone good at most things, everyone was also attractive. Until the day they chose to die (usually around 350 years of age) people could be confident in their ability to attract anyone" (Talbot, 446-447).

This short extract of a story effectively underlines the points that have been discussed previously in regard to body enhancements. The rapid progress of technology early on gave rise to human hopes of utilizing it to serve their own interests. Aspects like wanting to overcome diseases and dysfunctions of the body, as much as hoping to expand the life span were the first desires that arose for the time being. As mentioned before, alongside the trend of body modifications, critical questions regarding their necessity also emerged. The necessity of enhancements such as prostheses or eyeglasses, for instance, is largely undisputed, as these interventions are designed to restore or improve bodily functions when a particular natural body part is malfunctioning or even missing. Another area concerns superficial body modifications, ranging from hair dyeing to plastic surgery. However, it can also be regarded as necessary, it depends what perspective one argues from. When it comes to cultural identity or beauty ideals determined by society, superficial body modifications can also be considered important, especially for identity building of individuals. This, however, is rather an ethical discussion that is not going to be expanded in this particular chapter. Returning to the topic of bodily enhancements as represented in science fiction literature, one can notice that there are no limits in visualizing technological possibilities performed on the human body. Many science fiction authors show unlimited creativity in regards to changing the human's body. "The focus in these works is on an alien life form, especially on its biological or physiological make-up" (Arbor, 14). This alien form is mostly the human species that undergoes a change in some kind of way. In fact, this sort of fiction "emphasizes not technological or material progress, but rather

alterations in a species—usually the human species" (Arbor, 9). The reason for depicting the human species in a very altered way is the fact that, not only in fiction, but also in real life, humans are able to perform such changes through the continuously developing sciences and technologies. Plessner argued that the human's eccentric positionality makes the species unbound to a certain environment and therefore provides limitless possibilities in creating various ways of lives. The human species is hence free and free to choose how they want to live and who or what they want to become. Also, in science fiction narratives this freedom is portrayed clearly. Some stories even assume that "[…] human beings may be when no longer bound to the Earth" (Pitt, 306) and that their freedom even exceeds the scope of the planet.

"The molecules of your body are the same molecules that make up this station and the nebula outside, that burn inside the stars themselves. We are starstuff, we are the universe made manifest, trying to figure itself out" —D. C. Fontana, "A Distant Star," episode of Babylon 5 (1994), (qtd. in Weinfahl, Clarke, 36).

This particular quote was taken from an episode of a science-fiction TV series named Babylon 5 which was released in 1993 (Sean, imdb quote). It compares the humans to the stars in the universe, as an integral part of the unlimited world. The molecules of the human's body are like the molecules, "the stuff that stars are made off". So, as a comparison, humans are called "starstuff". Also, it is said that humans are not only part of the universe, but also the very manifestation of life in the universe. To conclude, human is like the universe that tries to discover itself and "figure itself out". This quote shows the human's unbound nature and freedom and more their desire to always go beyond limits and wanting to change constantly and trying out to always develop into something better outside the realm. In this respect, always having a feeling of insatiability and hence always developing sciences and technologies further. In fact, many science fiction stories entail places outside the earth to show the unboundedness of man. Other planets are used as a setting, like the novel *Man Plus*, for instance, that deals with humans trying to colonize Mars. Often, science fiction of that time that deals with the changes of the human body, also portrays a sort of dystopian setting on earth. A parallel line can be observed between the deteriorating environment of the human and the deteriorating body of man himself, leading to consequential need for further development, to exceed the earthly environment and to modify the body in order to become an "improved" species that could live elsewhere in the universe. "By introducing new bodies, which often but not exclusively

enter the stage when the demise of human civilization is almost complete, these narratives foreground scenarios which revolve around the idea that humanity may literally experience the end of the world or at least the end of what is generally called the human race" (Grace, 3). Again, taking the novel *Man Plus* as an example it clearly shows a "demise of human civilization", as humans are facing issues like the Cold War, where North America as a capitalist nation fights against the superior development of socialism. Hence, the only way out for them is to seek a last resort which is moving to Mars. When reading science fiction literature of the 1970s to the 1990s, one can notice that they depict similar issues of humanity, whether of political, economical, or societal manner. This often happens in a rather dystopian setting on earth. However, the stories also see newest technologies as the solution to overcoming these issues. Especially, biotechnology is presented to be able to change the human's body and to enhance it for the better, in the hope to also change the environment of the human for a better. With a better body, it could be easier to create a better life. This seems to be the idea behind such stories. "Writers who see man gradually evolving into a still higher human form are among the most optimistic […] in science fiction" (Arbor, 17). Hence, although the status quo of the human life on earth is mostly depicted within a dystopia, simultaneously, there remains an optimistic outlook concerning the future of humanity, as progress is being made in human enhancement, especially in bodily enhancements, and as this promises an improvement of life in the long run. Nevertheless, it is noticeable that most narratives have another turn of events in the end of their stories. Without further ado, a positive light is being casted on technology and its possibilities for mankind, anyhow at the end, as a turning point, many stories also reveal a glimpse of what adverse consequences could emerge from the increasing integration of technology into human life. Cyborgs, humans that were technologically altered, half human—half machine, could turn against other humans or become so alien that they differ too much from the origin of the natural human. "On the one hand, biotechnology and the possible production of an 'improved' human or posthuman race can be regarded as supporting, strengthening or enhancing human exceptionalism. On the other hand, these possibilities can be interpreted as a threat to it because newly developed, humanoid species could take mankind's place and lead to a new norm" (Boller, 67). In *Rethinking 'the Human' in Dystopian Times*, Alessandra Boller agrees on the idea that within science fiction stories the changing of the human, especially immense bodily enhancements manifested through biotechnology and genetic engineering, convey a certain insecurity or even fear among people of being blindsided by a creature that is half machine, half human or more of their own species becoming alien.

"With the rise of biotechnology and the rapid advances that biology and genetics have made and are making, people tend to become aware and afraid of the possibility that different, 'other' and abnormal bodies could be marginalized and thereby become 'other'" (Boller, 4). Boller continues to explain that another intention of depicting altered human bodies in narratives is to raise the question of humanity anew, to stimulate a discourse on the importance of the body and current human identity as an individual and in society. "With the depiction of the alteration or almost complete destruction of contemporary and normed notions of the human body, mankind's physical reality is put at the centre of attention. In these narratives, the posthuman body [,as a transformed human body,] provides readers with new perspectives from which they can revisit, rethink, re-access and even reconstruct the human body, its role and its relation to biotechnological means. Furthermore, the portrayal of the altered (human) body only is a point of departure for renegotiations and re-evaluations that concern humanity, personhood and humankind's position in the world" (Boller, 8). Thus, science fiction narratives employ many ideas: possible future worlds that are better than the current one, technological thriving and human perfection, but also failures of the attempt to improve life, or even mistakes in body enhancement that result in a different being other than the human. Eventually, most science fiction stories commonly explore both the benefits and the drawbacks associated with modern technological developments. A review of science fiction literature from the 1970s through the 1990s indicates that bodily modifications were a central focus, and that much of the contemporary discourse revolved around the human body and its prospective role in shaping the future. Technology is perceived as a fundamental element in the evolution of newly constructed human form. In the future another form of human will be living on earth, especially another form of the body that embraces the prospects of modern technology. To sum up, the human future body that emerges through technology is not only being discussed in sciences and technologies, but also in science fiction narratives. This genre deals with the very fact that humanity is about to change drastically through developing technologies and the science fiction narratives of the 1970s to the 1990s mainly put the focus on the human body and its drastic changes. Beings such as cyborgs, posthumans, half man—half machine, are born. The setting is typically a deteriorating Earth, struggling with the long-standing issues inherited from earlier stages of human history. Hope is placed in modern technologies and the capacity to reshape both the world and the human condition to create a more promising future. ~~Also~~ Additionally, most stories mention another setting, outside of Earth, to show the broad possibilities humans have for expanding. On the one hand, most science fiction writings

of that time depict altered, enhanced human bodies that promise to "improve" the human in such a way, so that he can deal with the earthly human issues and even more to create an even better future world for himself. On the other hand, these stories also suggest possible go wrongs of newest technologies and of the human "changing" project. Technologies that overcome humans, because they develop in intelligence or enhanced humans that differ so much from the others that they turn against "normal" humans, are just some of many examples where these stories also show the downside of "playing" God. "God may still be call upon anthropological settlement, but more and more the technically optimized transhuman superman takes over" (Liggieri, 11). So, the "[…] dystopian narratives often employ common motifs such as inventions or creatures that turn against their creators, or cures that go wrong and change humanity for the, seemingly, worse" (Boller, 95). Also, the topic of immortality is being discussed in science fiction. Being forever young may not always be an appreciated goal as it can come along with many disadvantages. For example, the emotional toll of outliving loved ones can lead to deep loneliness and detachment from society. Immortality might also create a stagnate culture where growth and innovation are hindered by the lack of general change. Furthermore, an overpopulated world filled with immortals could face severe resource scarcity and environmental collapse. The fear of living forever without purpose or direction often turns this dream into a nightmare. Ultimaltely, scheme fiction uses concepts to challenge our assumption about progress, control, and the true cost of tamping with nature. In *Bioethics. An* Introduction, Talbot says the following on the dehumanizing effects of immortality: "There is a long tradition in fiction of people who have been made immortal only to discover it is a curse rather than a blessing" (Talbot, 210). Body enhancements and other technologies that alter the human species are prominently featured in science fiction, particularly in works from the 1970s to the 1990s, where it becomes evident that an underlying ambiguity prevails regarding whether modern technology represents a gift or a curse for humantiy. Humans who enhance their bodies aspire to achieve a superior physical form, envisioned as a means of overcoming potential threats; simultaneously, however, there is a pervasive fear of the uncontrollable advancement of intelligent technologies and man-machine creatures. This ambiguous standpoint is predominantly shared in science fiction literature. In the following, three science fiction novels written between the 1970s and the 1990s will be analyzed as examples of the first emerging human type—the "stronger human"—which developed through bodily modifications.

4.1.1 "Man Plus" by Frederik Pohl

"If one does all these things to a human being, what is left is no longer precisely a human being. It is a man plus large elements of hardware" (Pohl, 54-55).

Man Plus is a science fiction novel written by Frederik Pohl in the year 1976. It deals with the deteriorating of earth due to a global war and political instability. The story is set on earth as well as on Mars and depicts the year 2026 (Pohl, 220). The main character is Roger Torraway, a volunteer astronaut from the United States, whose government decides to design a project to ensure humanity's survival. This project is called "Man Plus". They want to modify a human body in such a way that it could endure the hostile environment of Mars, as they see the colonization of Mars as the last resort to escaping the misery on earth. And Roger is supposed to become the "Man Plus".

This analysis deepens the discussion of bodily enhancements and aims to substantiate the first type of *The Trichotomy Model of the New Human,* the stronger human, by examining key passages of the novel within the thematically framework of human body modifications. Additionally, parallels will be drawn to the scholarly discourse of human enhancement by Plessner, Haraway and Agamben to underline the ambiguous attitude towards human body augmentation in both, real life and science fiction narratives.

The initial idea of the "Man Plus" project is introduced with an existential question which shows the despair to escape the status quo on earth. "What it all comes down to is that a colony on the moon can be supported from Earth. A colony on Mars cannot. At least a colony of human beings cannot. But what if one reshapes a human being?" (Pohl, 53). The radical transformation of a human being is not only regarded as existentially necessary, but it also implies that the project will be conducted in a new, unknown scientific field. The novel indicates from the very beginning that the intention of mechanizing a human body is purely precarious and the outcome is purely speculative. However, they try to legitimize the project by reinforcing the idea that it is naturally human to have the drive to develop, which Plessner and others scholars would agree to, and they even go further by stating evidently that changing is the only option for humanity to survive: "When we first realized that there was a serious risk that a major war would destroy civilization and make the Earth uninhabitable […] we decided to take steps to colonize Mars. It wasn't easy for us. The whole human race was in trouble. […] we would be able, for the first time, to plan for a future, with the survival of the race assured" (Pohl,

351-354). The human race is in trouble and life on earth is becoming unbearable. The end result seems to be a completely destroyed civilization with no hope for a better future. This is why people start to develop fear towards the future of humanity and try to find a solution to escape the situation. In this point of the story the characters start to believe that trying to solve the problems on earth is not going to be possible, it seems that the opportunity for intervention has passed, so the only possible counteract would be to escape the situation on earth by eventually creating the "Man Plus". Scholars like Warmbier, who are engaged in the ongoing discourse of biotechnology, claim that "creating new human body forms is somehow "a form of escapism" (Warmbier, 215) and with the creation of "Man Plus" they certainly want to escape the status quo. That is the reason, after all, why the project came into being; it is the country's hope for a better life, for a newly developed, better civilization. On another planet: on Mars. In fact, also in science it is broadly discussed that Mars could be another planet for humans to live on. "Mars has long been of special interest because of the possibility that it may harbor living organisms [...]" (Bunch, Hellermans, 619). Also, in the novel the potential of inhabiting Mars has been realized: "Mars means salvation for humanity" (Pohl, 67). In the story the director of the project, General Scanyon, says about Mars that "[...] it's a bigger planet than the one we were born on, in the ways that are important. And it can be ours" (Pohl, 45). However, not everyone is so sure that living on Mars is possible: "It still seemed that life of a sort could exist, perhaps lowly plants, even a rude sort of amphibian. But nothing like a man. On the surface of Mars an air-breathing, water-based creature like a human being could not survive for a quarter of an hour" (Pohl, 49). That's what the "Man Plus" project is about. To make it work. To make it possible that humans could live on Mars and also survive it. A very interesting notion in the novel is made regarding the nature of human beings. Similar to Plessner's viewpoint on the human species that his eccentric positionality, his natural deficiencies and nakedness force him to create his own environment artificially (Plessner, 2019, lviii), the novel too makes indications that it is indeed naturally human to undergo changes and make adaptations on themselves as well as in the environment in order to make it fit for human life: "Man is not bound by objective facts. If they inconvenience him, he changes them, or makes an end run around them" (Pohl, 50). This paragraph highlights the need for changing the human bodily condition for a better future, or even for the survival of the species. The highly speculative aspect of the "Man Plus" project and its possible detrimental downfalls is often times undermined by the characters in the narrative, as they repeatedly emphasize it to be the only solution for saving mankind. This perspective forces most of the characters to trust

technology and to believe that there is no other way out. They feel obligated to contribute to the rescue of society. When Roger Torraway decided to take part in the project and to become the "Man Plus", he argued that "[i]t was a terrible responsibility, being custodian of mankind's last forlorn hope for freedom and decency" (Pohl, 66). Also, in the real discourse of biotechnology scholars like Warmbier argue that people are morally obligated to enhance (Warmbier, 9). Although the characters in the novel emphasize the importance of human self-enhancement, the narrative simultaneously critiques the extent to which this adaptive impulse and societal obligation are pursued, particularly when the very essence of humanity is at stake. As mentioned before, the undertaking is a purely precarious one which makes it a gamble with human's nature. The novel, subsequently, raises questions of identity, autonomy, and ethics which also have become increasingly relevant in the contemporary discourse of biotechnology.

The loss of identity

As Roger is being engineered to become the ultimate cyborg, the "Man Plus", his body is progressively altered beyond recognition: his skin is replaced with solar-powered photovoltaic cells, his eyes become multi-spectral sensors, his blood circulation is bypassed, and his internal organs are replaced or enhanced with synthetic material (Pohl, 170). This process raises critical questions regarding the stability of human identity, of what it means to be human. On the book's cover an unrecognizable creature is being depicted, rather looking like an alien-fly hybrid. What is interesting, though, is that the characters in the narrative still regard the final version of the "Man Plus" as purely human, only enhanced. However, as a reader, one notices the slow process of Roger's dehumanization and the loss of his identity. Roger is ambivalent. He realizes that his body is continuously being replaced with mechanized entities, at the same time, he remains self-conscious. His transition from man to machine is exemplified in his own perception of his body: "He flung back the sheet and gazed idly down at the artifact that his body had become" (Pohl, 189). The term artifact suggests that Roger no longer views himself as an organic being but rather as on object. He feels alienated and no longer recognizes himself: "He looked at himself in the mirror he had demanded they install: insect eyes, bat wings, dully beaming flesh. He amused himself by letting his visual interpretations flow, from bat to giant fly to demon…to himself, as he remembered himself, pleasant-faced and youthful" (Pohl, 250). But the bodily modifications even go further. Not only his outer appearance is being modified, but his reproductive organs are being removed as well: "There, between his legs, was nothing. Nothing at all of penis, testicles, scrotum; nothing but the gleaming artificial flesh, with a transparent bandage over it, concealing the surgery

lines. It was as if nothing had ever been there" (Pohl, 190). The removal of Roger's reproductive organs marks a final rupture between his organic past and his engineered future, underscoring the extent to which his identity is subordinated to the survival of the species. The idea of becoming genderless has also been discussed by Hayles. She opposed the term of fixed gender and sexual identity, since she envisions the transhumans to become boundless without a fixed bodily boundary, hence to become transgender or even genderless (Hayles, 2005, 27). This final process of augmentation, which effectively renders Roger Torraway posthuman, raises critical questions regarding the stability of human identity. He does not recognize himself any longer, even calls himself an artifact which is defined as a human-made object. Torraway's experience reflects the anxieties of biotechnology, especially modifications of the own body, bearing the possible aftermath of losing the own identity, since his crass bodily modifications lead to his gradual estrangement from human society, and moreover, from himself.

The loss of autonomy

The novel also raises critical questions in regards to autonomy. As the protagonists show total trust in science and technology, they claim that any mistakes that happen are the fault of humans, since they are naturally flawed. Technology, on the other hand, cannot fail or at least only fails when humans make mistakes while using it. For instance, when Roger, fully modified now, turns against the others (Pohl, 410). He says that he got some kind of malfunction and therefore cannot read the signals he is getting (Pohl, 404). They do not see the error in the faulty technology, but in Roger's behavior explaining that his outburst happened because he has forgotten to zip his fly: "Want to know what went wrong?" Roger wriggled fingers. "You didn't zip your fly. Left the charging terminals exposed, and some of that iron oxide grit must have got in and made a partial short. So you ran out of power" (427). Also, in the transhumanist discourse the human's weaknesses are regarded as failing systems. For instance, Uzarewicz who claims that "the human is faulty" (Uzarewicz, 119) or Gehlen who states that "[t]he human as a faulty being is being forced to compensate his unspecialty, his faultiness of organs and instincts with special actions that change the natural fundaments" (Gehlen qtd. in Liggieri, 58). Natural desires such as thirst or hunger are being described as weaknesses in the novel (Pohl, 61). The expression of emotion is regarded as another human weakness. In the novel, the notion of jealousy is taken as a prime example. While Roger is undergoing the process of body modification, his wife is having an affair with another man. When he learns about that, he starts to feel jealous and his system, to which he is linked, starts to constantly show errors: "[…] his brain raced, conjuring up thoughts of sex, food, jealousy,

sex, anger, children, nostalgia, love […]" (Pohl, 61). The scientists eventually reveal the reason causing the error and remove the dysfunction and tell Roger that: "[t]omorrow they're going to hook [him] into the computer for all that mediation stuff […] Then all this stuff will filter out the unnecessary signals, so he won't be confused" (Pohl, 174). At the end of the narrative, with the final creation of the enhanced human, the "Man Plus", they eliminated all those human weaknesses and the technology of the man-machine hybrid overtakes the natural elements of the human. His implanted technology is trusted: "He's invulnerable […] Nothing can ever catch him offguard" (Pohl, 373). This shows the tendency toward implementing more technological features than leaving more natural ones. Consequently, the fear of lost autonomy can be addresses since the enhanced human bodies tend to function like machines without natural instincts. In the novel the computer, that is connected to Roger as a prostheses, starts gaining total control over his body. It directs the body to kill the people involved in the project. Interesting is that, even then, the characters conducting the project still do not realize that technology took an autonomous turn and believe they still can remain control (Pohl, 427). At the end of the novel, the computer, that Roger is linked to, is functioning completely autonomously and the narrative starts to shift as the story is now being told from the third-person perspective, the computer's perspective: "Of course, human beings did not know we were pleased, and perhaps would not have believed it […]. As long as they thought computers were no more than tools, like a pickaxe or frying pan, they would continue to entrust to us all their computations and facts, and would accept without question whatever interpretations we returned" (430). Although, the characters in the novel show complete trust in technology throughout the entire story, the novel still sees the blind devotion towards technology critically. Through its detailed portrayal of body enhancements, the novel questions the belief that technology automatically drives progress and explores the hazardous effects of merging humans with machines. It shows that technological advancements do not necessarily lead to a better or easier life.

The question of ethics

Another interesting notion is that throughout the narrative Roger seemed to still have control over his mind, even though his body has been completely modified and was eventually steered by computer technology. From the outside, he didn't recognize himself anymore, he calls himself a "monster" (Pohl, 18).–He has been fully dehumanized, resembling a machine. All natural features of the body have been replaced with mechanical entities. Eventually, he loses control over his body. From the inside, however,

he hasn't lost the ability to think on his own. When, at the end of the novel, he turns agains his colleagues, he quickly realizes that the technology is controlling his body.

The one thing that Roger has control over is his mind. He is conscious about the situation and the fact the his body is being controlled by a machine and that he cannot do anything against it. However, his mind is still his. He knows that it is bad and he also warns the staff members that his body is out of control and that it tries to kill them: "Get away! I'm trying to kill you" (423)! As he starts getting involved in the project, he experiences moral ambiguity regarding the ethically correct decision: "How could Roger deal with the greatest of personal questions—why is Right, and what is Wrong" (Pohl, 141)? Another character is being introduced in this regard, the priest, Don Kayman. He asks himself the question of what life is and of what purpose humans have on Earth. He supports the "Man Plus" project and hopes for humanity that on Mars "there would be life; not only life but intelligent life[…]" (Pohl, 341). He believes that the humans' purpose in life is to overcome biological limitations and to make more out of the world as well as he thinks that limiting life would be arrogant as the most developed species. In this respect, the novel draws parallels to the anthropologists' view on the nature of human (Hartung, 129; Plessner, 2000,29). Ultimately, Pohl's narrative suggests that technological intervention is not merely an enhancement but a radical redefinition of what it means to be human. Donna Harraway's *Cyborg Manifesto* (1985) similarly challenges human-machine dichotomies, arguing that the posthuman subject is a fluid entity, embedded within cybernetic networks (Haraway qtd. in Prokić, 203). Also, Plessner's notion of eccentric positionality highlights how human self-awareness is shaped by both organic and technological means (Plessner, 2019, 121). Conclusively, in the novel „Man Plus", Torraway's transformation exemplifies this paradox, as his new form of being is both an artifact, a product of human creativity, and an independent cybernetic being.

An alternative perspective on the issue of ethics is the reasoning behind the "Man Plus" project. The American government declares it as an inevitable measurement in order to secure humanity's survival in this dystopian setting. Hence, the augmentation process of the human body is not an individual matter but a governmental imposition. The project that modifies Torraway is mainly driven by political necessity than by personal aspiration, highlighting that technological advancements also function as a mechanism of control and power, over humanity's destiny and future. Ultimately, Pohl's depiction of the technological body, *the stronger human*, is deeply ambivalent. On the one hand, Torraway's bodily modification is framed as a necessary evolutionary step for securing humanity's future. On the other hand, his experience of losing control and autonomy over

his own body, raises ethical concerns about the extent to which human augmentation should be pursued. In the biopolitical discourse, this question is crucial. When we reach the state that the human body becomes subject to biopolitical manipulation, we have to start questioning the intentions of human development (Wills, 58). This viewpoint reflects the novel's critique of the governmental power to dictate bodily modifications.

Conclusion

To conclude, the novel shows that for humans using technology is a matter of course and that they, from the very beginning, have a deep trust in modern technologies as much as in their own capacities to control them. They act very self-confident when it comes to altering bodies, to collect data, and to use procedures that have never been tested before. On the other hand, the novel also highlights the reciprocal relation of man and machine and indicates that the survival of either one can only be ensured when both entities are living together in symbiosis. At the end, the computer says that it is clear that the survival of their machine intelligence is closely linked to the survival of humanity (Pohl, 433), so that they depend on each other. Only if they fuse, they can survive. That is why the "Man Plus" project is about creating a cyborg half man—half machine, because a purely natural human could not survive in the new environment, on Mars. Just as little as could a pure machine. The title of the novel "Man Plus" clearly shows the reciprocal relation of humans with technology. The "Man" is the pure human and the "Plus" is the technology that is added onto him. However, during the story it becomes noticeable that the human part of "Man" vanishes more and more and that the mechanical part becomes dominant instead. Many descriptions of the modification process showed the dehumanizing effect on Roger while he is being cyborgized. There is a shift of power and control in the story. As at the beginning, the humans had the mastery, at the end it turns out to be the machines. Nonetheless, the main focus of this novel is on enhancing the human body. The whole story gives many detailed descriptions of body modifications and of a man-machine symbiosis that promises to "improve" the natural human body and to create a better human, a stronger one, that is able to survive under the harsh conditions of the new environment on Mars.

After all, Roger Torraway's transformation into a cyborg is not portrayed as purely positive. It is driven by political desperation rather than genuine human progress. As Roger's body parts are fully eliminated or replaced with mechanical ones and his emotions are numbed. He becomes more machine than man. This shows that the project had him completely dehumanized. Moreover, he loses his sense of identity and feels disconnected from society, as he feels like a "monster", after all. While being modified

into "Man Plus", Roger retains consciousness of his former self, but finds himself struggling to reconcile experiential differences between his pre- and post-augmented identities. Helmut Plessner's philosophical anthropology provides further insight into this crisis as he argues that humans exist in a unique tension between embodiment and self-reflection (Plessner, 2009, 173). This can be clearly connected to Torraway's posthuman condition. In conclusion, by depicting radical modifications of the human body, the novel suggests that technological change, instead of guaranteeing improvement, can also involve loss of identity, autonomy, and ethical standards. The noel not only depicts the radical modifications of the human body, but also draws parallels to scholars like Plessner and Haraway, which shows that the novel also deals with a philosophical question of what it means to be human even though our bodies might change in the course of action. "Man Plus" is an effective illustration of technological advancements being both, a blessing and a curse.

4.1.2 "Eon" by Greg Bear

"People haven't changed much" (Bear, 946).

The next novel has a similar topic than the before mentioned "Man Plus", even though it was published a decade later. The novel was written by Greg Bear in 1986 and also deals with an earthly world at war and the alteration of human bodies. The story initiates on Earth, starting with New York in the fiscal year change from 1999 to 2000, the start of the millennium. Anyhow, other parallel universes play a crucial role in the narrative as well. Just like in "Man Plus" the nations on Earth are at war. Actually, the same war is being described, the Cold War. East Bloc and West Bloc are fighting and human civilization is deteriorating on Earth. Even though the plot takes place in the year 2000, the Cold War is still going on in the story. The story includes many settings. On the one hand, there are the nations on Earth and on the other hand, there are other universes and environments that humans or other non-human creatures have inhabited. The humans, whatever form they got, are either called corporeal or non-corporeal. The plot starts with an asteroid orbiting around Earth. Many nations notice this newly emerged asteroid which they call "the Stone" and try to examine its existence and get control over this happening. It is very soon found out that "the Stone" is probably inhabited by humans and that it even happened a millennium ago. The story contains many timelines at the same time, since

there are various cosmic continuums and different universes mentioned in the narrative. For once, there are the human people living on Earth. Scientists in America try to find out more about the Stone with its seven chambers. The main characters there are Garry Lanier, the leader of the expedition, and Patricia Vasquez who is regarded a genius especially in the field of mathematics. She is the only one who manages to "calculate" the future as it will happen. Then there is Axis City, a place where humans have settled, the place is existing in the future. Here the humans have created "the Way", a continuum that connects Earth with the other settlements in space. Thistledown is a spaceship that has been found and with which the Earth people had left Earth in the former times. Olmy, a corporeal human, he calls himself a neomorph, is the one character that examines this spaceship further. He is "[a] tall creature with a head almost as narrow as a board and jutting eyes rose from behind the ceiling. Its shoulders were wrapped in silvery fabric; otherwise it wore nothing. Its skin was smooth as fine leather and just as brown. […] he had a nose but no nostrils. His eyes were pale blue, almost blank, and his ears were large and round". However, not only the examination of "the Way" is an important matter, but an existing library plays a crucial role as well. This asteroid library holds many secrets as it shows texts and pictures of a nuclear war that was dated in the past of Thistledown, but as Patricia finds out these dates are future dates on Earth. Patricia also has another intention. As her loved ones became victims of death on Earth, she tries to find a way in the parallel universes to turn back time on Earth with the help of mathematics and the existence of "the Way". In the meantime, Olmy notices that the intelligent Patricia has many similarities to a man who died, Konrad Korzenowski, the builder of "the Way". He wants to revive him by using Patricia's mentality as a copy and putting it into a body, so that Konrad could exist as a person again, with body and mind. Olmy hopes that Konrad could be of help in the expedition. Patricia agrees to that. She, however, fails at her personal attempt to bring her beloved ones back to life. Even a parallel alternate Earth cannot be used to recreate her old life. At the end of the story, the Russians attack Thistledown and therefore all humans and non-humans, the corporeal and non-corporeal collectively forced to evacuate, then flee to Axis City. Battles start in the parallel universes as well, like it started on Earth. The only hope for humanity, in whatever universe, is to find a way out. At the end, the story mentions the singularity, called the Final Mind that turns out to be a powerful future intelligence that holds the key to humanity's survival and a new beginning beyond war and destruction. The novel's plot and setting explore the intersection of humanity, technology, and also time. With this narrative, it mainly raises

questions about human's identity, the power dynamics between the different forms of humans of and about ethical consent.

Re-identifying as humans

By envisioning a world where technological advancement forces humanity to confront fundamental questions about identity, corporality, and survival, the novel also highlights the "unboundedness" that Plessner talks about in his anthropological study (Plessner, 2019, 71). The narrative takes place in different settings with different kinds of humans which underlines Plessner's discovery what makes the human so special as a species: "[…] nowhere, without place and unbound in space and time. This is the human" (Plessner, 2019, 270). Beyond "the Stone" lies Axis City and "the Way", constructed by future humans who have embraced radical bodily and cognitive transformation. These humans, now neomorphs, Frants, or incorporeal beings in the City Memory, are no longer bound by traditional human biology. Just like in the novel "Man Plus" it is claimed that the more natural the human is, the more deficiencies he has. Also the future humans in *Eon* support this viewpoint. The portrayed difference between being a "normal" human and an "other" human becomes clear, as the "other" human forms show improvements and more artificial attributes and less biological ones. They have better functioning, just like a machine, and lack human natural deficiencies such as negative emotions like jealousy or other weakening attributes (Bear, 1000). On top, they do not die, but retire, after having chosen the two allowed incarnations. Also, they are not being born, but just created. In addition, Olmy explains: "Many neomorphs today have no specific sexual orientation" (Bear, 808) and most citizens are designed or incarnated, not born. The gender neutrality becomes clear in the story, for instance when they say "gentlepeople" instead of "ladies and gentlemen": "There is news, gentlepeople" (877). And also the fact that most citizens are designed instead of born is often highlighted: "Apparently they don't have birthdays here-so few people are actually born, biologically speaking" (1001). The notion of gender neutrality coincides with Haraway's postthumanist view as she claims that the new form of human is genderless (Hayles, 2005, 27) and the resulting dissolution of fixed identity, as Plessner describes bound in body and bound in soul (Plessner, 2019, 270), is somehow liberating, but also unsettling. Also, other scholars have engaged in the discourse of the unbound existence of the human as a being. They agree that the human is a free being, unbound from natural limitations and Hauskeller even goes further by saying that the "enhanced human is the true human" (Hauskeller, 71). In the novel, "the enhanced human is the true human" is embodied by characters like Olmy and the posthuman citizens of Axis City. Unlike the "normal" humans from Earth.

Their way of life is being regarded out of date. They even call the "earthly" human thinking "archaic" and "sick" (Bear, 1253). The result of such "sick thinking" may be resulting in the deterioration of life on Earth, through wars, broken society and dead people. Other human life forms in the story have realized it sooner. They inhabited other parallel worlds and continue developing through technologies and especially through altering their own beings, their bodies and their minds. Despite their radically altered forms, they still identity as humans: "We're all humans" (Bear, 772). These enhanced beings have overcome biological limits, have extended their minds and even have gained immortality, at least in digital form. The portrayal of the City of Memory, where human beings retire after exhausting their legal incarnations, blurs the line between life and death. "Under special circumstances, they may be assigned new bodies, but most often they are content in Memory" (Bear, 806). Here, Bear anticipates in transhumanist circles about immortality, at least in digital form, and raises questions about the ethics of replicating consciousness. So, overcoming biological limits, extending minds, and even gaining immortality, these are traits that are regarded as advancements for humanity rather than deviations from humanity. Also, Patricia's gradual transformation, from a skeptical Earth scientist to someone who consents to have her mind copied to resurrect Korzenowski, emphasizes the unboundedness and the shift from one human form to another. Even though the possibility of enhancing bodies is represented as a liberating act in the novel, there are also some passages where characters feel unsettled and Patricia is one of them. Her remarks: "I'm human, aren't I. I'm real. I'm not just some toy or program" (Bear, 1044) or "I was beginning to think I wasn't human" (1122) show that she is starting to feel confused and is struggling to identify herself any longer. However, within this context, the novel suggests that the human essence is not erased but reframed, inviting us to consider whether humanity is defined by biology after all. Consequently, enhancement is not portrayed as the end of humanity but as its next evolutionary step without becoming inhuman, but rather staying human, or even becoming a "better", a "stronger" one, one necessary for survival in a vastly changed universe.

The Dynamics of Power and Control

Another big theme in the novel is power and control. In the narrative, having information does not only mean having facts, but also having power. And the people who control the flow of information also end up controlling the people around them. That kind of power doesn't always come forced or violently, however it gradually takes away the people's autonomy and the freedom to choose for themselves. Just like Patricia when she agreed

to have her mind copied for Korzenowski (Bear, 1042). She gives her consent, however she feels uncertain about it and, after the process, even feels confused about her identity. Just like in the novel "Man Plus" the reasoning behind the project is that it is vital for overcoming the problems humanity has, yet for even saving it. Also, here in the novel, this process is regarded as highly important as Korzenowski is, in their eyes, the only one who can solve the problems. Another portrayal in the novel shows the power dynamics between those who bear information and the rest who don't. When the Stone's massive library is discovered, which holds details records of possible future outcomes, including a nuclear war that hasn't happened yet from Earth's point of view, an overall panic arises. The newly gained information is creating even more unsettling feelings, even though it is supposed to be helpful for them as they might get a step ahead with this information. It doesn't give the characters more control over the situation, it takes it away. Patricia emphasizes the feeling of powerlessness by saying: "I'm supposed to prevent it? How? What the hell can I do"? (Bear, 264). Knowing something terrible might happen does not give her the security and self-confidence to prevent it, she rather feels trapped. This feeling of being trapped reoccurs when the Earth visitors start realizing just how much they are being watched. Patricia's direct remark: "Are we guests, or prisoners"? (Bear, 930) highlights that feeling of uneasiness. Even though, they aren't trapped in a prison, they are still under constant surveillance (Bear, 929), and they don't really know what is being done with the collected information about them. That kind of environment makes it hard to feel free, autonomous, and in control of your own life. The situation even gets worse when people find out that certain information is being hidden from them. At the beginning of the novel it is mentioned that "DST has been ordered to mask all data given to the community" (Bear, 19). DST is the Data Security and Transmission agency that is responsible for controlling and managing the flow of information within the society aboard the Stone. That is a crucial undertaking. It means the society is deliberately keeping people in the dark, deciding what they can and can't handle. Even when they legitimize this behavior by saying it is for their safety (Bear, 21), still people cannot decide autonomously. Hence, the people controlling the data become the ones controlling the decisions, the lives and even the possible future of others. The power dynamics are evidently portrayed in the novel and it shows that, even though, the future humans are more advanced, in this narrative the transhumanist thought, of being totally free and unbound in form, time, and space, does not mean total freedom for everybody as information gives some the power and control over others. In the end, the novel shows how the real danger isn't just the future nuclear war, it's the loss of autonomy in a world

where people are watched, managed, and kept in the dark. When information is controlled, so are the people. And that kind of quiet control can just be as powerful and dangerous as any weapon in the world.

Ethical Consent

Just like in the previously mentioned novel "Man Plus", also "Eon" raises questions about how much is too much when it comes to bodily modifications, especially when they are performed for governmental and no individual reasons. Firstly, this novel challenges the reader to rethink what it means to be human, more specifically, what it means to have control over one's identity and decisions in a world highly shaped by advanced technologies. As the characters build towards a future filled with body modifications, information flow, and digital immortality, the story raises important questions about personal responsibility, like Patricia is being expected to act upon the news that a war is coming in the future, and it also raises questions about personal consent and the moral weight of the characters choices. As mentioned before, in the novel's depicted world, humans are no longer limited by their biology. They can be rebuilt, redesigned, or even exist entirely in digital form. Ram Kikura, one of the posthuman characters, emphasizes this new human form of being when he says: "Now, no human has the excuse of ignorance or mental malfunction…Incompetence is inexcusable, because it can be remedied" (Bear, 1040). This quote underlines a major ethical shift in the story: in a society where cognitive and emotional shortcomings can be fixed like software bugs, the idea of moral failure becomes much more complex. If someone can be "upgraded" to make better decisions, they why excuse their mistakes? This ethical transformation is also depicted in the character of Mirsky, a soldier who is severely injured. Rather than dying or living with severe limitations, he is offered a second chance through prosthetic programming, essentially rebuilding his body and his mind using artificial tools. When he is being asked: "You consent to prosthetic programming?", he answers straightforwardly "I consent" (Bear, 829). At first, it seems like a plausible decision. He had the choice between living or dying. So, who wouldn't choose the living over the dying? However, this passage raises a much deeper question of not only what it means to be human, but more of what it even means to remain yourself. Is Mirsky still Mirsky after the process? Will he still be autonomous, or has his identity become an artifact (just like Roger in "Man Plus") rather created than chosen? Also, Patricia was uncertain after having had her mind copied whether she was still herself or a toy or program now (Bear, 1044). Eventually, the ethical question to ask here is: if parts of their bodies and minds can be changed, repaired, or replaced, is something essential lost in the process? Or are the humans

simply becoming a more refined version of themselves? The novel does not give a simple answer to that question, but it does suggest that identity and autonomy are no longer fixes concepts. They evolve along with technology.

Conclusion

The novel succeeds in highlighting how important developed technology is for bringing humanity further. Especially, when it comes to the corporality the human is destined with. It is hard for the reader to imagine that all the presented creatures in the story are actually human, just another new form of human. The fiction becomes clear here, as the body enhancements are beyond real for the reader. Anyhow, the message makes sense: If humans inhabit a completely new universe, a world that is so different from the old one on Earth, also the human needs to change in order to be able to adapt to the new place. Since the new world is so much different, the new human form needs to be crucially different as well. This is being shown with the early humans that come to the mission from Earth. At the beginning, they remain normally human, but they undergo more and more adaptations and changings for themselves to become better. Hence, the novel describes a future where humanity must either evolve or perish. The narrative asserts that inhabiting new worlds—physical, digital, or temporal—human beings also have to transform themselves. The repeated claim "We're all humans" (Bear, 772) sounds like a reassuring mantra, but it also highlights the tension between the superficial unity and the undeniable changes that split these future humans. With this paradox Greg Bear wants to show that the posthuman vision is not a rejection of humanity, but a redefinition of it. It wants to show us what it means to be human in an age where technology dissolves the boundaries that once defined us. Hence, humans develop simultaneously with the advancements of technology. The stronger technology gets, the "stronger" humans become.

4.1.3 "Proteus in the Underworld" by Charles Sheffield

"[…] she understood the central dogma of form-change: "Humanity is defined not by appearances. It is defined by actions" (103).

The last novel in the first category "stronger human", dealing with human body modifications, is called *Proteus in the Underworld* and was written by Charles Sheffield in 1995. This narrative provides a compelling depiction of the normalization and

institutionalization of bodily transformation the future of humanity. The story presents a society in which individuals legally alter their bodies to suit either personal preferences or the demands of environments beyond Earth. The Biological Equipment Corporation (BEC) builds human form change tanks that make it possible to alter and enhance a human's body in any way possible (Sheffield, 11). The form-change is the most common way of altering the body, it is used by every human and is legal. The Office of Form Control makes sure that all form-change procedures are conducted legally and that the tanks come from the original supplier, the BEC. The main characters of the novel all work within the field of form-control. This highlights the human's centrality to societal functioning. Just like in "Man Plus" where all the characters are devoted to successfully conduct the project with Roger in the foreground who agrees to become the "Man Plus" in order to save humanity. Another similarity to the other novels is that the story is set on Earth, but also on many other alternate human environments, on other planets. Surprisingly, it bears many similarities to the before mentioned novels. It, too, depicts a world on Earth that is not suitable anymore for humans, especially since humans want to thrive and develop further. Unlike in the other novels, this story does not describe Earth as a deteriorating place, but rather as an outdated one where the human species cannot become better.

Also in this story, some of the humans left Earth in order to build and create a better life elsewhere. The reason why civilization split up is that many have clashing viewpoints on how to live as humans and, moreover, in which direction the human species should develop. That is the reason why many different civilizations with their own ideas and purposes for humanity are formed in many different environments outside of Earth.

Human Adaptation and Evolution

The novel's interplanetary setting, Earth, Mars, and beyond, introduces multiple human civilizations, each reflecting different ideologies about what it means to be human.

Hence, regarding the human development "[d]ifferences, physical or mental, became more extreme" (Sheffield, 36-37). "The Fugates were a fine example. Begin with the belief that the human brain could and should be bigger; add to it a requirement that bigger brains need bigger bodies […]" (37). That is why Mars also has been colonized. Unlike in *Man Plus,* in this story the inhabiting of Mars has already been successful and many humans have already been living there for years, of course bodily altered through form-change to fit to the harsh environment. Thus, these modifications are not aesthetic but driven by evolutionary logic challenging traditional constraints imposed by Earth-bound biology. This notion correlates to Plessner's notion of human's natural boundedness and the drive to overcoming it by creating new environments. In the novel, a part of Mars is

still being scientifically examined and prepared for terraforming, whereas the "Old Mars" already is inhabited and life for humans has been created there, just like on Earth. Humans from other places can travel to Mars, but it is always kept in mind that they are foreigners who carry other views on humanity and life. Therefore, they built a Mars immigration area where one gets offered a first entry document (Sheffield, 45). For the life on Mars, the citizens wrote a Declaration, the Mars Declaration. It states: "Be it known by all who follow that Mars is now a home for humans. We, the surviving crew of the exploration ship Terra Nova, pledge never to leave this world. We will not obey any order to return to Earth, no matter how or by whom delivered. We will venture no more into space. We will remain here to live, to labor, and to die" (Sheffield, 89). There are powerful groups on Mars who insist that the new forms point the direction of the future. They claim that "it is far easier to change humans […] than planets" (Sheffield, 89). To repeat, the main reason why people left Earth was the concern of a human species that would get stuck in a monotone development. So, it became urgent that humans inhabited other environments and developed a completely new form of humanity. The goal is to improve the species all together.

Re-evaluating the self

Form-change, although often depicted as ulitarian, is also deeply entangled with cultural norms and personal identity. In order to create different human forms, the so called tanks have been created by the corporation BEC. In the beginning of the story, the form-change tanks are introduced within the use of humans from Earth. People are described to go into such a tank regularly to alter their forms. It is called "wearing" a form. Since form-change is regarded as a changing of the outer human, it is called "wearing" a form and not, for example "being" a form, since it can be easily redone. Similarly, in Frederik Pohl's novel "Man Plus", clothing is conceptualized as an early form of technological mediation between humans and their environment: "Man survives in places where he ought to die, by bringing a kinder environment with him. He carries what he needs. His first invention along those lines was clothing" (Pohl, 50). Also, anthropological scholars like Hartung and Hauke claim that the human's natural nakedness gives him the drive to create his environment to cover himself up, with clothing being the very first obvious invention (Hauke, 157, Hartung, 64). Calling it "wearing" the form, in this narrative, also emphasizes the fact that whatever form a human changes himself into, he stays human, since only the appearance is changed and not the human genetics that determine the species. "Purposive form-change runs contrary to evolution. We change to match a different environment, but it isn't a genetic change" (Sheffield, 182). The same belief is being

portrayed in the previously mentioned novel "Eon" where the repeated phrase "We're all humans" (Bear, 772) underlines this thinking.

Powerful human forms

However, in the first place, form-change has not been created to change a human's appearance cosmetically for pleasure, but rather to enhance the human in such a way that he could overcome unnecessary setbacks in his development, such as illness or aging (Sheffield, 179). In fact, not wanting to change the body or to enhance oneself is regarded crazy as no normal person would voluntarily stay an unimproved, worse version of themselves: "He's old"."How old"? "Middle seventies, according to his file". "And he's dropped his form-conditioning"? Gipsy suddenly sounded horrified. "That's suicide" (60). Just like in the previously mentioned novels, human natural needs such as drinking, eating, sleeping, resting are regarded as weaknesses. In contrast, the other human forms, also in this narrative, eliminated those "unnecessary" needs and with this made their bodies stronger (Sheffield, 102). There are also many more human forms depicted in the novel that are described with less normal human attributes. These human forms don't live on Earth anymore and therefore need to wear more drastic forms in order to fit to the harsh conditions that exist in their chosen environment on another planet. The novel entails many detailed descriptions of different human forms that show extreme bodily enhancements: "[…] a huge body, sixty feet long and broad in proportion, floating whale-like in the field of view. The hairless skull was full-sized with respect to the body, but oddly soft and amorphous in appearance, as though bone had been replaced by soft and flexible cartilage" (Sheffield, 19). In this respect, the Logian form is presented as the most developed form of man (Sheffield, 66). The Logian form is presented as a very smart, more developed and special human form. Not only their looks is very different from the normal human origin, but also their intelligence seems to have developed so far that they do not want to be involved in other human affairs (Sheffield, 145). They even claim that making decisions for normal humans would not be good as they could not handle such developed thinking (Sheffield, 67). This, actually, is their number one rule, to not interfere in human affairs. They stay for themselves and whoever wants to connect with them, should change to their superior form. Any other human form in the story is also described with individual specialties and own norms for life.

Ethical Decisions

Anyhow, the possibilities of form-change and the multitudes of human forms also bear some risks. Another, non-human life form could enter humanity and pose a threat for humans. In order to prevent such events, a humanity test has been created by the Office

of Form Control. "The humanity test is given to every baby" (Sheffield, 14). It is designed to determine whether a newborn qualifies as human. The test decides who is granted human status and thus legal protection and the right to live, and who is not. The babies are placed in specifically designed test chambers that analyze cognitive, emotional and biological responses. Those who pass have nothing to fear, but the ones who fail the test are deemed non-human and are quietly absorbed into "organ banks" (Sheffield, 106) which means they are being euthanized. The plot of the novel mainly revolves around a critical failure of the humanity test: several babies that should have failed end up passing. These so-called "feral forms" (Sheffield, 63) appear human but are in fact unresponsive, unemotional, and immune to the form-change technology (Sheffield, 162). Eventually, it is discovered that the test cannot correctly identify extremely gifted infants whose mental abilities are so high that they do not match the normal human parameters (Sheffield, 175). This raises crucial ethical questions of what it means to be human and also the control that others have over you and your life, deciding who has the right to live and who not. The humanity test symbolizes the novel's central tension around redefining the human and shows a grotesque but logical extension of a society obsessed with the utility of the modern technological advancements. The failing of the test leads to insecurity amongst humans. This could affect form-change everywhere and pose a threat for humanity. So, there is an instant need for investigation. The main character to do so is Sondra Dearborn. She is a "normal" human living on Earth and working for the Office of Form Control. Like everybody else, she uses form-change too. She even made her doctorate in form-change theory (Sheffield, 18). Another important figure in the story is Behrooz Wolfe, called Bey Wolfe. He used to work in the Office of Form Control, as well, but is retired now. He is considered the master of form-change theory as he, back then, developed a multiform theory. The multiform makes it possible to cross multiple forms in one. Bey Wolfe and Sondra Dearborn are meant to find the problem why the test is failing. However, they find "[n]othing. No sign of malfunction, no abnormalities. The BEC hardware appeared to be performing exactly as it had been designed to perform" (Sheffield, 110). Comparing this storyline with the ones of the other novels, one can notice that, also here, the humans trust technology and tend to believe that any malfunctioning has to derive from humans. Another similarity to the before mentioned novels is the notion of how important data and information is in this technologically highly developed future world of humans (Sheffield, 16). Here, all forms of humans, whether it is the normal earthly form or an enhanced other, regard information as very important in order to continue science and to develop further. That is why they rely on the data and

check it thoroughly to find out why the test failed in the first place. In the very end of the novel the reason for the failed test is being revealed: if humans are very special, much smarter than normal humans, the humanity test does not recognize them as humans (Sheffield, 175). Sondra's discovery throws the entire system into crisis. This revelation forces a re-evaluation of the criteria that define humanity. Is it behavior, genetics, form-change capably, or something more elusive? This part of the story critically highlights the ethics behind the test. Having had humans euthanized by accident because they fully trusted the technology raises the questions of how far should technology be trusted and used in order to determine and decide over a human's life? After this finding, it is agreed upon that the traditional Mars Declaration needs to be updated, as life means change and development and as, since the colonization of Mars, many years have passed and science and technology has developed further. So, also the former definition of human does not fit any longer. "What is a human? The answer, slowly evolved and at last articulated clearly, was simple: an entity is human if and only if it can accomplish purposive form-change using bio-feedback systems" (Sheffield, 11)."New Mars is the future. Old Mars, like Earth itself, is the past" (Sheffield, 132).

Conclusion

In conlcusion, the novel shows extreme modifications when it comes to the human body. The story tries to convey the message that the natural human form is not suited for living in modern environments that aim for a better future, so they consequently "adapt form to setting" (Sheffield, 90). This belief mirrors the viewpoints of anthropological scholars who also claim that the natural human nakedness forces him to overcome his boundedness and to recreate his environment and especially himself to make life suitable for development. The Logian form is here presented as the best developed form which enhanced so much that it became the strongest and smartest human form: "You know the ground rules for a successful form"? "Better than you do: viable, stable, and legal" (Sheffield, 79). This statement shows that, however, ground rules are to be followed in order to keep control over the forms. Otherwise, the border between real humans and non-humans or "fake" humans would blur and would pose a threat for humanity. Also, it becomes clear that the humans represented in the novel feel free in their human nature to choose whatever or however they want to be, changing their bodies all the time is as normal as human can be. Many times, it is mentioned in the story that changing humans is much easier than changing the environment, the nature that has originated even before humanity: "It is easier to change a human than to change a planet" (Sheffield, 121)."Easier

to change people than planets. With today's form-change methods that is certainly true. […] forms can be created that thrive in extreme natural environments" (Sheffield, 180).

To conclude, the novel *Proteus in the Underworld* shows that for humanity to develop further, the first step is to enhance the natural human body. With body modifications it is easier to adapt to new environments beyond Earth. The future worlds depicted in the story are outside of Earth which shows the human unboundedness that also Plessner has discussed in his theory. The form-change symbolizes the thriving technology that is needed for developing the human species. It becomes clear that the development of humans go hand in hand with the development of science and technology. On the other hand, the narrative indicates a certain concern of losing control over the different human forms that are thriving. The humanity test is being created for keeping control over what is human and what is not. Beings failing the test are regarded non-human and are immediately being disposed. In the end, this is being re-evaluated since the technology failed and they had killed innocent human beings. In the title the name *Proteus* is being mentioned. In the Pons dictionary two meanings of this Latin word can be found. On the one hand, it is a Greek god of the sea who can transform himself into many different shapes and on the other hand this term can be used to describe a very smart person (pons.com/übersetzung/latein-deutsch/Proteus). In this case, Errol, the first baby that failed the humanity test, is described as Proteus. He lives in the Underworld where his mother hides him so he won't be disposed. Errol Melford is a symbol for human's natural uniqueness. Human beings cannot be defined by a formula, since it is normal that among humans there can be natural discrepancies. In the end, the novel constructs a deeply philosophical and speculative narrative that interrogates the very foundations of what it means to be human and it reminds us of a future where human identity is no longer static, but a dynamic interplay of technology and constant self-reevaluation.

4.3 Stronger Human: Update Completed

"Technology can most broadly be defined as the material attempt to extend human, but most particularly bodily power" (Hampf, 33)

The three analyzed novels, *Man Plus, Eon* and *Proteus in the Underworld*, show many similarities when it comes to the depiction of the human and his body. For once, they all

depict a human life on Earth that is not worth perpetuating. In *Man Plus* as well as in *Eon,* the life on Earth is depicted as a dystopia. There is a war going on and civilization is about to collapse. For some humans, the only way out is to leave Earth and to find an alternate place to live. In *Proteus in the Underworld,* there is no war on Earth, however also there a disagreeing within civilization is noticeable. People split their minds on how to continue to develop the human species. As ideas and viewpoints are very different, many people decide to form an own human colony and to create an own new environment outside of Earth. However, all three novels have one point in common. They agree that the human condition, especially the bodily condition, can be, no, even must be, enhanced to save humanity's future. The stories focus on human body enhancements. Odd creatures with nostrils, wings like bats, flappy ears, 2 meter long arms, and other oddities are described. The interesting thing about these bodily descriptions is that they are all regarded human. In the stories, technology plays a major part in the enhancement of the human. This is the main focus of the novels, to show that adapting to the new environments needs to be made through body modifications in the first place. It is part of the modern worlds and also part of humanity's future. Humanity's future is at risk, in each novel. Wars and deteriorating civilizations force humans to prepare for the future and to create a better world to live. The error of the humanity test, in *Proteus in the Underworld,* forces people to find the error in order to maintain the testing, because it is the only way to secure the defining of a human and the control over humanity's development. However, one interesting notion, when comparing the novels, is that in the first two novels that were written in 1976, the trust in science and technology is so unconditional that any occurring error is regarded as human failure. In the last novel written in the 1990s this attitude changes. Here, humans think that a possible technical mistake and failure of machines could have caused the problem. Also, in real theory it is "argued that the new technology should be encouraged until there was proof of harm" (Headrick, 146). Even though there was "proof of harm" in *Man Plus,* for instance, when Roger, fully cyborgized, turned against the other humans, it is still regarded as his human failing as he forgot to zip his fly and hence all the energy from the battery was released. In fact, in all three novels, the weaknesses of natural humans are emphasized while comparing them to the other enhanced humans represented in the stories. Natural conditions such as being hungry, tired, thirty or sexually aroused are seen as weak points in the human as he loses control over his body. His mind gives him a sign and the body needs to obey. When being hungry, one needs to eat. When being tired, one needs to sleep, and so on. For example, in the first two novels some characters feel jealous. This is truly a sign of weakness as they start

getting confused and cannot concentrate anymore. The need for food, sleep, and water is described in each story. The enhanced human forms in all the stories got rid of all those weak points, so that they more easily can function as planned, like machines without any setbacks. Sometimes, it is not clear in the stories whether one deals with a human or a non-human or machine or whatever. Even the characters in the stories are unsure and cannot find a clear distinction: "The cyborg!" "Colonel Roger Torraway, the human being," she corrected. "As human as you are, except for some improvements" (Pohl, 384). I'm human, aren't I? I'm real. I'm not just some toy or program" (Bear, 1044). "Thank you. First of all, are you pure human" (Sheffield, 120)?

The developed technology that makes such an extreme change of the human's original body possible is considered inevitable. In order to save humanity, to change the world of the humans to the better where they can continue thriving in the future, the developing of further technologies is a must. In the respect of enhancing the body, biotechnology plays an important role. However, the above mentioned insecurities of whether the condition is still human or not shows the line between humans and non-humans is getting thinner. "Biotechnology calls into question the "immutability of boundaries between humans, animals and machines, artificial and natural, 'born' and 'made'" (Graham qtd. in Boller, 94). Creating new human body forms is somehow "a form of escapism" (Warmbier, 215), as, in the stories, it is presented as the last resort for saving humanity. This can only happen outside of Earth. In theory, it is claimed that body "enhancements are a moral obligation" (Warmbier, 9). This is also being reflected in the novels. For example, in *Man Plus*, the narrative says about Roger that "[i]t was a terrible responsibility, being custodian of mankind's last forlorn hope for freedom and decency" (Pohl, 66). Also, in *Eon,* Lanier and Patricia are responsible for finding out more about the asteroid Stone that could mean a threat for humanity on Earth. In *Proteus in the Underworld,* Sondra Dearborn is the character responsible for finding out the reason of the failed humanity test as this could mean a threat for the definition of the human species if the reason cannot be found. Securing that the future of humanity is safe can be regarded as a moral obligation. Another similarity in the novels is that the humans yet have control over their technologies, even though they also perform automated. In *Man Plus*, the "brother" that has been connected to Roger, the computer he is carrying in his backpack, functions fully automated and reads information and data autonomously and interprets the next appropriate action. At the end of the novel, the computer even acts independently as he sends signals to Roger. He commands Roger to destroy and kill. In fact, the narrator is a computer network that often makes clear that they have control over humanity. However,

the humans do not realize it and still feel powerful over the situation. It still can be the case, since the death run is being stopped by pulling of the backpack, hence by interrupting the link between Roger and the computer. Also in *Proteus in the Underworld,* the human control over technology is highlighted. As the form-change tank performs deficiently, the tank is being taken out of the program and put in stand-by mode. "The technology, irrespective of whether it is in the user's environment, on their person or in their body, is effectively an interface between that person and the life they wish to lead. It is, therefore, how people react to technology, and not the technology itself, that can decide just how 'enabling' or assistive it is" (MacLachlan, 259). This view seems also to be the presented in the stories. Also, the characters in the story share a similar transhumanist view. They, too, have a natural trust in newest technologies and rather see the merits of using them. They are certain that humans will always keep the control over thriving technologies. They also focus on the modification of the human body as they strive for a better and improved version of the human. "Transhumanists generally regard contemporary mankind as transitory stage towards a better version of 'the human' (Boller, 95). And so do the people in the stories. On the other hand, all of the novels also evidently portray the downfalls of constant enhancement within human society. First, they raise the ontological meaning of identity and challenge the reader to explore the question of what it means to be human and asks themselves how much modification is still regarded as human in the end? Secondly, the novels take a skeptical look at power and autonomy. Some characters in the novel take over other people's lives and so their power raises and the autonomy of the rest declines. Lastly, the ethical question is being raised of how far can a government, a driving force in society, go in order to change an entire humanity, not for personal reasons but for societal ones? Predominantly, the narratives emphasize the positive side of technological advancements and limitless bodily enhancements. Science fiction, the literature of "exploration and change" (Pitt, 306) demonstrates how the future world could look like for humanity. Aligned with the newest of technologies, science fiction creates a better human through body enhancements. Will the human become a technologically driven, controllable, perfect creature (Heilinger, 2)? In science fiction, it is hoped so, and also in reality people want to believe that we are about to become better, stronger humans. Nonetheless, the authors indirectly instigate critical thinking about technology defining who we are as a species. What they realize, still, is that the evolution of technology means a simultaneous evolution of humans.

5. Type 2.0. : Faster Human—Information and Data

"Some posthumans may find it advantageous to jettison their bodies altogether and live as information patterns on vast super-fast computer networks" (Kaplan, 347).

The first human type of "The Trichotomy Model of the New Human", the "Stronger Human", is concerned with altering and enhancing the human body to make it better, stronger, more durable for new human environments. The second type, developed in the model and presented in this chapter, deals with making the human faster through computer technologies. A retrospective look at the previously discussed novels reveals that the themes of information and data already play a significant role within their narratives. Although concerns regarding computers and information and data emerged much earlier, it was not until the 1990s that these topic gained relevance and entered prevailing discourse. Now, that the first step in human enhancement, strengthening the physical body, has been completed, the next stage naturally follows. The human body has been improved to the point where it can match the strength of machines, as shown by the existence of cyborgs and other enhanced humans. This development is especially clear in science fiction stories, where such transformations are frequently explored. However, people may be as strong as machines now, but still are not as fast as they are. Here, the second human type comes into play, the "Faster Human". In this chapter, the next technological period will be presented. It will explore the technologies around the millennium and focus on computer, network and information technologies. It all started before the millennium, in the 90's, with the rise of the World Wide Web. "By the 1990s the Internet (and later the World Wide Web) stood poised for commercial development, and in the last two decades the world has witnessed the development of the incredible and transformative global information system that the Internet is today" (McClellan III, 411). Of course, other communication systems had been invented before. Starting with the satellite Sputnik in the 50's, it was now able to send military satellites to space. A decade later, this technology was also used for the public in the form of telecommunication satellites that were able to "transmit broadcasts worldwide" (Headrick, 137). In fact, "[b]y the 1990s, more than 100 countries had joined the International Telecommunications Satellite Organization (Intelsat), which operated satellites covering the world. The world had entered the era of instantaneous global telecommunications" (Headrick, 137). The development went fast. "During the 1990s, fiber-optic cables linked all the nations of the

world. Their capacity was so enormous—hundreds of thousands of simultaneous telephone conversations or dozens of television programs—that only a fraction was used at any one time" (Headrick, 140). The world began to accelerate. Communication technologies were growing fast. Exchanging information and working with data became the new territory within the human's technological thriving. Another crucial invention of that time deepening the man-machine relation is the microchip. It was invented in 1958 by Jack Kilby (Reid, 147). The microchip profoundly changed science and technology (Bunch, Hellemans, 626). Not until the year 2000, the inventor won the Nobel Prize for the microchip. Also the internet had been invented in that period, but it was not until the 90s that a computer linked to the internet was inventory in each household throughout the entire world and became an indisputable part of human beings. Hence, a much faster world also needs much faster humans. Scientists started to link human with computer technologies, so that humans could benefit from the fast working machines. The era of data and information initiated. "As Castells puts it, 'The emergence of a new electronic communication system characterized by its global reach, its integration of all communication media, and its potential interactivity is changing and will change forever our culture' He implies the network does not only reshape the distribution of content; it reshapes content – and us – as well." (Castells qtd. in Bhaskar, 119). Indeed, human life changed enormously with the rise of the internet. Data and information were crucial for developing further, may it be developing further the sciences, technologies or even the humans themselves. Even to the 90s, this topic had already begun to surface in public discourse, including within the realm of science fiction literature. Again, a closer examination of the previously discussed novels reveals numerous references to the concepts of data and information. The narratives depict worlds in which access to data and information is essential for advancing research and enabling the construction of a more viable and progressive future. Nevertheless, the discourse surrounding computers, data, and information technology reached its peak around the millennium. This period marked a growing recognition that the future of humanity is inextricably linked to the advancement of computer technology. As previously emphasized, humans must be adapted to align with the level of advancement embodied by their own technologies. Hence, humans need as much an update as machines. As theorized by Plessner, humans are naturally naked and unbound to nature, so they are free to create their environment artificially. As this artificial environment has been culture and civilizations on Earth, in science fiction stories, in the ones already analyzed, other human environments have been presented, which were other planets or parallel universes outside of Earth. In

contrast, in this particular era of cyber technology, characterized by the emergence of the second human type. The "faster human", the newly constructed human environment is defined by cyberspace. This is the natural habitat of data and information, where it can flow freely; and since humans strive for a man-machine symbiosis, they too inhabit cyberspace. Indeed, it is said that the "posthuman subjects are destined to live in complex information environments" (Kroker, 71). N.Katherine Hayles calls the new form of humans—posthumans. The posthumans' world is closely linked to the world of cybertechnology. Their goal is to create life in a man-machine interface. Hayles describes information as a bodiless fluid that can flow anywhere, be it a human corpus or a machine one (also see chapter *Halyes on the Relation of Man and Machine*). She further says that there is a "cybernetic dream of creating a world in which humans and intelligent machines can both feel at home" (Hayles, 1999, 671). In *Virtual Worlds. Culture and Politics in the Age of Cybertechnology*, Nayar Pramod defines posthumans as such: "A new form of the human—the *posthuman*—is emerging (or has emerged already, while we were sleeping), with prosthetic devices, altered body, and networked with computers" (19). He highlights the importance of today's cyberspace and technology: "[…] cybertechnology affects all aspects of life today […]" (11) and so it is no wonder that we face a "technologically enhanced, wired, and chemically/surgically altered human who arrives with cyberculture and the informatisation of life" (11). He concludes by defining the posthuman condition this way: "The posthuman condition, characterised by this heavily informatised or mathematised human, is one where the dependence on technology—especially software, the Internet and databases—has increased." (Pramod, 21). And it continues to accelerate, as the development of cybertechnology remains ongoing and seemingly without limits. It is a fast technology that needs, in return, fast humans who are able to interface with it.

5.1 Technology around the Millennium:
Computer Science and Information Technology

"State of the art technology with a classic skin."

The beginning of the new decade marked a pivotal transition for humanity into a fundamentally transformed world. With the peak of the internet, humans felt the need to change themselves into faster humans that could cope with the fast flowing world of

information and data. Pramod claims that "[…] we live in an 'information society' where information is central to production, consumption, politics and everyday life" (Pramod, 19). Indeed, information technology is even used in the deepest part of human sciences. "Information technology allowed the decipherment of the human genome — the sequence of the 3,100,000 "letters" contained in the DNA making up the 30,000 or so genes that are contained in the chromosomes of our cells. Computer modeling allows the creation of complex models ranging from the evolution of the universe to protein folding" (Bunch, Hellemans, 626). Here, the close interface of man and machine becomes clear. The new human of 2000 feels the need to make more adjustments to the own being, more than just bodily enhancements. As information and data rules the modern world, humans want to merge with it as much as possible, so they become as fast as the machines, hence become the machine, hence become better. As previously noted, the invention of the computer, and, more significantly, the advent of the internet, served as a crucial turning point in the emergence of a new human type. "By the early twenty-first century, there were more than a billion computers in the world" (Headrick, 143). Especially, around the millennium it became obvious that in the near future humans will coexist with machines. One might suggest that no real choice existed, due to the sheer magnitude of the explosion in information and data at the time. "One of reasons computers became indispensable was their ability to exchange as well as process information" (Headrick, 142). So, as a matter of fact, living face to face with computers became unavoidable for humans. The world happened digitally and virtually now, in cyberspace. Hayles very early realized the importance of the man-machine relation. She explains "[…] that human cognition is collaborating with machine cognition to extend its scope, power, and flexibility. This situation requires both partners in the collaboration to structure their communications so as to be legible to the other" (Hayles, 2012, 41-42). Nayar Pramod agrees: "We need to see ourselves (humans) as sharing boundaries and selves with technology" (Pramod, 28). Hayles further says that the newly created environment of the human, the technical environment, is the place for humans to develop further as a species. The world of the computer is noted as very important in this case. She concludes that computers and humans have the same task, namely to process information. This common role creates a symbiosis between man and machine (Hayles, 1999, 670). Computer Science started as early as the invention of the first digital computer. "Computer science is the study of computers and how computer technology can be used to solve problems. It involves studying computing systems, programming rules, data and analysis, networking, the internet, and how computers affect our lives.

Computers are better than humans at storing and sharing tons of information, solving complex calculations quickly, and learning things. "Certain types of calculations involving high levels of recursion, impossible to carry out with pencil and paper, are ideally suited to the large number-crunching machines available to scientists and mathematicians since the 1950's. We are coming to rely on the computer as a means of modelling more complex natural phenomena, including thought itself" (Pepperell, 35-36). Computer scientists use computers' abilities to help them develop new technologies that make our lives easier" (Smith, 12-13). Hence, computers represent a central hope for humanity in addressing and solving complex problems. They can store, process and save much more data and information and handle complex algorithms better than a human. No wonder, the humans want to become like a computer, half human—half machine. This brought about the information age. "Our world has moved through the Stone Age, the Dark Ages, and the Industrial Age. Many say that right now we are living in the INFORMATION AGE. That's because we have shifted from a focus on making stuff with our hands to using information technology to create. We have found new ways to use information to help us create" (Smith, 40-41). It can be seen as the new human condition, to create ourselves with the means of information. In this new era, computer science and information technology is pushing the development of the human to a whole new level. "Whatever is happening in the universe…is all information" (Paul&Cox qtd. in Hauskeller, 127). That means that even we humans are nothing but bits and pieces of information (see also chapter: Hayles on the Relation of Man and Machine). "Are we really no more than bits of information? Are we just "walking algorithms" (Hauskeller, 127)? When believing the claim that "[a]ll living organisms are no more than walking algorithms" (Kadmon qtd. in Hauskeller, 127)", then the answer would be yes. This would explain the statement that humans and computers have one and the same function in the new world of 2000, namely processing information: "Subjectivity and computer programs have a same arena on which they can interact" (Hayles, 1999, 38-39). This arena is called cyberspace. When it comes to the new human environment "[…] the advent of the Internet, especially the World Wide Web, has been decisive. Never before in the history of the human species has so much information been so easily available to so many" (Hayles, 2012, 182). It marks the core of human modern life. "In the late twentieth century, with developments in information technology, […] the human begins to be talked about in a different way. This new 'form' of the human is nothing less than radical redefinitions of what it means to be human in an increasingly technologised age" (Pramod, 218). Also in the before analyzed novels, dealing ultimately with body enhancements, the notion of information and data

cannot be avoided. As in these science fiction stories modern future worlds are described, mostly around the millennium. So, information and data is as much crucial to this modern life of humans. In the narratives it is evidently described that nothing brings humanity further than processing information and using data, as in this era humans are seen as bearers of information, "the body is therefore reduced to information […] In *Neuromancer,* William Gibson [even] describes the body as 'data made flesh' (Pramod, 220)".

5.2 Science Fiction and the World Wide Web

"The amalgamation of the human body with computer technology, in particular, has provoked both fascination and fear" (Schiller qtd. in Sielke, 105).

The following chapter will examine how the discourse surrounding the internet, the World Wide Web, and information technology intersects with themes in science fiction literature of the time. Many science fiction stories of the 2000s deal with exactly this particular topic. The above mentioned quote shows the ambiguous feeling towards the symbiosis of man and machine. Schiller says that the "amalgamation of the human body with computer technology […] has provoked both fascination and fear" and this is particularly evident in science fiction literature that directly engages with these themes. The invention of the computer could be summarized as such: "Computers are awesome. The human race has seen more advancements in the last 50 years than in the entire 10,000 years of human history. Technology has transformed the way we live our daily lives, how we interact with each other, and has changed the course of our history" (Bourke, 1). Especially, computer science and information technology is closely linked to the human transformation in the digital age. In *Virtual Worlds. Culture and Politics in the Age of Cybertechnology,* written in 2004, Nayar Pramod makes a statement that summarizes the transformation: "Technoculture today is primarily 'info-culture',where knowledge and information […] constitute the very cultural fabric of society […]" (19) and he even expands his thought by saying that "[e]very 'discipline' of the human sciences […]— geography, medicine, demography, biology, politics—uses computers and data. This mathematisation produces a new way of looking at humans: as a set of data" (21). This phenomenon is also reflected in the science fiction narratives of that period. Humans are closely linked to computer technologies and associated with being in a reciprocal relation

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with data and information. The focus of the stories are all on the man-machine interface. Computers are the main partners of the human for that matter. They become so vital to humans that without computers, humans would not be regarded modern or developed humans who can fully adapt to the new evolving environment. Michael Hauskeller explains the amalgamation of man with machine as such: "The mind is supposed to be not the brain, but "structure" and "pattern",which contains "information" that can in principle always be separated from its organic basis, replicated and reinstantiated in an indefinite number of different material forms. The brain is the (replaceable) hardware and the mind the software: the ghost in the machine" (Potts qtd. in Hauskeller, 126). As cited Hayles before, in the new human environment, where computer technology is inevitable, humans have the same standing for that matter as computers. Both process information in the world of data and information, as simple as that. By merging with computers "we have become better (if we have) not as human beings, but as performers of a certain task or pursuers of a certain goal" (Hauskeller, 14). Pramod exceeds this viewpoint and argues that "information […] technology steers our life" in which the "world of information itself has been dematerialised or virtualised" (Pramod, 20). "We don't always need real bodies. If we happen to be in a virtual environment, then a virtual body will do just fine" (Kurzweil qtd in Kaplan, 364). As humans are regarded information, as well, also they have been dematerialized. They have been disembodied from their origin corporality and flow as information through the merged world of information networks in cyberspace. Tribe defines cyberspace as "[…] a place without physical walls or even physical dimensions— where ordinary telephone conversations "happen" where voice-mail and e-mail messages are stored and sent back and forth, and where computer-generated graphics are transmitted and transformed, all in the form of interactions, some real-time and some delayed, amount countless users, and between users and the computer itself" (Tribe qtd in Kaplan, 309). Likewise, science fiction narratives written around the year 2000, exceedingly describe the interactions and even deep relations between man and machine, and users and computers. The narratives present characters that can be seen as "Humachines" (Pepperell, 123), thinking like a computer, working like a computer and counting like one, fast. "To be human is to be better" (Savulescu qtd. in Kaplan, 428), in this case, to be human is to be faster.

The following novels are being analyzed in terms of the notion of information and data in the future world of humans. The future worlds depicted in these science fiction stories will show an inevitable face to face living of humans with computers. As information and data is regarded the most valuable entity that one can have in life, more valuable than money,

the stories depict situations where this viewpoint is strongly highlighted. Actually owning more data simultaneously means owning more money. The characters in the stories are very affine to technology, especially to computer technology. Many scenes show a downright amalgamation of man and machine, as the characters start to think like a computer with bits and pieces of information, sporadically, and even to count like one. The normal human thinking is sometimes regarded as confusing and senseless, whereas computer thinking is precise, correctly calculated and factual. The three novels of the 2000s present a typical human environment with humans and computers working together, processing information and data, the human to be "faster" as ever before.

5.1.1 "Transmission" by Hari Kunzru

"The question of the border is a question of information" (530).

Transmission is a novel by the British author Hari Kunzru. It was published in 2004. Hari Kunzru is known for dealing intensively with the man-machine symbiosis in his stories. He is also involved in this phenomenon in his personal life. He studies the changing of humanity through computers. In all his stories a pattern can be noticed. He uses leet speak and e-mails and symbols in his narratives. His stories combine paragraphs that read more like a digital flow of information with narratives that follow the literary norm. His novel *Transmission* shows such symbiosis. Kunzru wants to explicitly outline the symbiosis of humans with computers in his stories, he does that by using that symbiosis himself while writing the story. As mentioned above, he includes computer symbols, e-mail writing, leet speak and other computational attributes within his narrative.

This novel analysis explores how the story interrogates the convergence of digital technology and human life, particularly in the domains of language, identity, and ethics. It examines how Kunzru constructs a narrative that is as much about the form of communication as it is about content, interweaving conventional literary techniques with digital discourse to reflect a world increasingly defined by information flows. Lastly, this chapter will focus on how technological immersion changes linguistic expression, reshapes human subjectivity, as man-machine symbioses, and challenges ethical responsibility. Ultimately, redefining, again, what it means to be human in a networked society within the new environment of cyberspace.

The story follows Arjun Mehta who is a young Indian computer programmer and who emigrates to the United States to work as an IT specialist to live his American Dream. He is an expert when it comes to solving computer problems, but he struggles when it comes to handling real-life situations. His inexperience with social interactions makes him seem naive and out of place in the world beyond technoogy (Kunzru, 23, 189). His world revolves around computers, and this is clearly mirrored in both—his character and behavior. He approaches problems analytically, gathering data, encoding it, and working toward a solution much like a machine. He views his surroundings through a technical lens, constantly absorbing and processing information, and at times, even acts the mechanical precision of a computer himself (Kunzru, 33, 119, 171). He also experiences his environment and notices his surroundings by counting. He collects information and interprets them mathematically, like computers form algorithms. Hence, he experiences the world through numbers, just like computers do (Kunzru, 16, 223, 276). Not only Arjun's world is mainly technical and filled with information and data. Also the world, described in the story, is mainly described as a mecca of technology and data (Kunzru, 112). Even social life happens rather digitally than face to face (Kunzru, 166, 318). This shows that the life of the people is unconditionally technological and that they implement computers naturally to their everyday lives and, even more so, that cyberspace is the new environment humans created and adapted to. As mentioned before, Arjun wants to work as an IT specialist in the US. He eventually secures employment through an Indian tech-outsourcing company, Databodies, and relocates to the United States (Kunzru, 24). With the company's name, Kunzru indicates the new definition of the human type. Not only computers are mechanical bodies in which data flows, but also the humans themselves carry a body full of data and information. Here, Kunzru already highlights the man-machine symbiosis that is in the foreground of the posthuman discourse. Arjun thinks he finally achieved his version of the American Dream. However, his ambitions are soon disrupted when he is laid off due to market instability. In a desperate attempt to reclaim his professional relevance after being laid off, he creates a computer virus called "Leela", inspired by his favorite Bollywood star, Leela Tahir (Kunzru, 8). He naively believes that by releasing the virus and then offering its cure, he can regain his job and win admiration for his technical professionalism. An interesting notion is that Kunzru describes the virus in a very humane way, so that the reader has the impression that the virus becomes the main character in the later development of the plot (Kunzru, 9). Also, Arjun seems to have a personal relation to Leela, the virus, as he sometimes treats her like a real person: "Arjun knew what was going on behind the eyes and the smile, how Leela was stealing

resources from other programs, taking up disk space, making herself at home" (273). As the story progresses the virus grows rapidly and spreads far more than Arjun anticipated. It is causing chaos, infecting global computer systems, disrupting communication infrastructures, and inflicting widespread economic damage. The chaos triggered by "Leela" draws the attention of international ale enforcement agencies, turning Arjun into a wanted cyber-criminal (Kunzru, 11). "They were calling him a terrorist" (Kunzru, 331).

Meanwhile, another character is being introduced in the narrative, Guy Swift. He is a stylish and shallow branding executive (Kunzru, 13) who experiences his company Tomorrow* collapse under the weight of the digital meltdown caused by the virus. The choice of the character of Guy Swift shows that Kunzru critically highlights the paradox of western technological companies in a capitalist world, supporting technological advancements, even though they could themselves fall victim to economic crisis caused by technology, in this case by the virus. The whole story mostly deals with Arjun trying to stop "Leela" from growing automatically and from spreading autonomously. However, he quickly realizes that, even though he created the virus, he lost control over its actions. He was powerless to its spreading. He feels guilty and is afraid now. He asks himself: "Were people being hurt by Leela? Had anyone been killed" (Kunzru, 331)?

Consequently, he flees America and hides out. The story ends with the overcoming of the latest Leela virus. The real Leela Zahir, the actress, disappears as she cannot stand the public spotlight any longer. Also Arjun disappears and never gets found. The end of the novel indicates that Arjun and the real Leela are together in the hide-out.

Hari Kunzru effectively illustrates the intimate and intertwined relationship between humans and computers. In his work, computers are not merely passive tools, but active agents within the human world. Kunzru frequently employs fragmented and non-linear syntax to mirror the enigmatic and coded language of digital technologies, thereby emphasizing the increasingly blurred boundaries between human consciousness and machine logic:

"By the roadside giant billboards advertised a reservation casino. Blackjack. Roulette. Fortune Pai
Gow Poker. Keno. 21" (411).

"She shuts down her machine and
They sit together in a taxi
A curvature. A stoop.
swivels her chair towards the window and
Someone in the stalls makes loud kissing noises

poor posture

between the two of them a five-inch gap

she takes another bite of her sandwich

laughter

the posture of a young man standing outside a New Delhi office tower.

An arbitrary leap into the system" (13).

He thus merges human language with computer language. He also writes the narrative both ways, the human way and the computer way. He connects normal conversations with digital ones by using, for example, normal dialogues and e-mails.

"Tomorrow* into an agency with an international profile. GS:TM had undoubtedly played a role in that success.

Tomorrow* was, he liked to say, different from other agencies. It produced results

Results*

In a glittering career Guy had raised awareness, communicated vision, evoked tangible product experiences and taken managers on inspirational visual journeys" (47).

The symbol * is used as a suffix after "Tomorrow" and "Results". Mathematically, the symbol means "times" and replaces the "x", for instance 2 x 2 = 2*2. When translating this computational language to ours, it could mean steady growth. Using it for the words "Tomorrow" and "Results" could mean that the author wanted to underline the steady growth in the future of humanity, as "Tomorrow" multiplied could equal "the Future" and "Results" steadily growing could symbolize "ongoing development" which is the nature of human life. Kunzru's writing style, combining computational text with "normal" text even exceeds the narrative and can be interpreted as the act of writing in the real world, as a science fiction writer. The title *Transmission* underlines Kunzru's message, that the humans go hand in hand with computers towards a common future.

After all, the novel dramatizes the unintended consequences of digital agency in a hyper-connected world. Kunzru's narrative manages to raise questions of not only who holds power in the digital age, but what it means to be human when language, identity, and agency are increasingly mediated by machines.

Langauge Shift

Plessner claimed that language and planned behavior is the distinctive feature of humans (Plessner, 1953, 5). In *Transmission,* as the title indicates, the story illustrates a

transmission from human, natural language and behavior to a computational language, leet speak, and a mechanical algorithmic functioning. Kunzru's narrative not only depicts a technologically saturated world but enacts it formally through narrative techniques that reflect posthuman identity. As N.Katherine Hayles argues in *How We Became Posthuman,* posthuman subjectivity emerges when "consciousness is an epiphenomenon, an evolutionary byproduct of information processing" (Hayles, 2008, 31). This shift is not merely thematic in Kunzru's novel, it is embedded in its textual architecture. The use of digital form, for instance, such as email headers (Kunzru, 103) functions not merely as a stylistic device, but as a formal expression of a consciousness mediated by digital networks, algorithmic structures, and the abstraction of human presence into data. Thus, identity is rather mediated by data flows and not by physical presence. This, indeed, aligns with Hayles' notion that the body in the posthuman condition is a prosthesis to the mind, which merges with informational technologies. Also the used asterisk * in *Tomorrow** and *Results** is commonly used in programming and data filtering. Kunzru uses it to emphasize the meaning shift in regards to language and, even more, the ontological meaning shift of the (post)human as it symbolizes steady growth. Lastly, this narrative technique reflects the futuristic thought of humanity. Just like technology also humanity is regarded to be upgradable, indeterminate, and steadily growing.

Man-Machine Identity

The character Arjun embodies this man-machine symbiosis in both—his lifestyle and his personality. His perception of the world is filtered through algorithms and data processing: "Auomatically Arjun found himself calculating the shrinkage in the world implied by this error" (Kunzru, 16). He navigates the world by interpreting information mathematically, "counting off his first McDonald's, his first stop sign, his first highway patrol car" (Kunzru, 88). Arjun's inclination to redice experiences to numbers, "Fifteen sails visible on the water. Twelve cars parked in the lot by the marina" (Kunzru, 223), points to what Hayles call the "postman condition", where the body is seen as a prosthesis to the mind, ad consciousness as an informal pattern (Hayles, 2008, 112). Arjun's thinking becomes indistinguishable from machine logic: "Parse the problem. Think of a number" (Kunzru, 224), "If…I…can…just…figure…this…encryption…algorithm…out" (Kunzru, 119). This mechanization of human consciousness also resonates with Hayles' theory that information has become more fundamental than materiality in defining the human existence (Hayles, 2018, 18). Additionally, it underlines Haraway's viewpoint in the cyborg manifesto that deconstructs the boundaries between human and machine (Haraway qtd. in Prokić, 215). In the novel, Arjun's identity is clearly scaffolded by code, systems

access, and networked logic, rather than human emotion: "Arjun, who felt he did not really understand emotions as well as he might, made the gestures you make when trying to comfort someone" (Kunzru, 39). Even his body language and affect are describes in mechanical terms: "Arjun looked as if someone had rewired him, badly" (Kunzru, 171) and "Arjun, whose system appeared to have hung" (Kunzru, 171). By depicting Arjun as a posthuman figure whose identity is fundamentally shaped by the logic of machines, illustrating a man-machine symbiosis, the novel raises the critical question of whether the human merges with technology or fully becomes technology and hence loses natural human attributes. Eventually leading to the question whether it is still truly human when functioning like a computer.

Ethics, Agency and the Power of Code

The novel also explores the ethical challenges of losing control over technology and the digital agency taking over. It is portrayed through Arjun's creation of the virus, Leela. What begins as a desperate move to save his job, quickly spirals into something far more serious, even criminal and destructive. Even though Arjun's choice to launch the virus was not a calculated act of sabotage, he had his personal reasons and truly believed he could control his "Leela", it still emphasizes the power of programmers like Arjun, who have the ability to deeply engage with computational networks. It gives them overall power over everyone else who is not skilled to program, encode, or solve algorithms. Although, Arjun is skilled in working professionally with computer technologies, in the end, he still loses control over the virus. The novel critically portrays the perils of merging too deeply with computer technologies. Just like in the previously mentioned novel representing the first human type, the stronger human, it is also, here, evident that the characters in the narratives tend to trust technology and their ability to control it completely. However, as the virus in Kunzru's story starts to spread uncontrollably, a language shift is noticeable that reflects the growing power of the virus: "The truth is that Leela was not one thing… She was a swarm, a horde" (Kunzru, 242). In this passage Leela's pronouns shift, from it to she. This clearly shows that she is made more powerful as she becomes humanized, implying that she has taken over the control now as if having an own consciousness or identity. Also, Arjun's growing fear: "Were people being hurt by Leela? Had anyone been killed"? (Kunzru, 331) can be seen as a turning point in the narrative. His transformation from programmer to "terrorist" (Kunzru, 331) underscores how quickly moral and legal lines can blur in the digital world. Consequently, Kunzru's portrayal of Leela raises important questions: Can code have agents? Where does the resistibility lie when software behaves autonomously? By showing how Arjun's personal act leads to global

conseuwneces, Kunzru highlight the complicated ethics of coding, and even living, in an interconnected, posthuman world predominantly in cyberspace.

Conclusion

In *Transmission*, Hari Kunzru constructs a world where the digital posthuman emerges through the development of technology, especially computer technology including informatics and data flow. In the story, this technology penetrates every aspect of the human existence: linguistically, ontologically, and ethically. Arjun's transformation and the uncontrollable spread of the virus show how technology ca reshape not inly society, but human identity itself. As the boundaries between human thought and machine logic begin to blur, Kunzru shows how people like Arjun no longer act entirely from emotion and intention, but instead function within systems of data, code, and algorithms. This shift reflect what anthropologists like Plessner identified as a key trait of humanity: the use of language and reflective behavior. This is now transferred into the realm of machine language and automated processes. Also, underlining Hayles' viewpoints on the posthuman existence, the novel suggests that human consciousness is becoming more like an information system, meaning it is less rooted in the body and more defined by patterns and data flow. By the end of the novel, as the virus starts to act independently, Kunzru raises serious questions about responsibility, control, and what it means to be human in a digital world. If a piece of work can take on a form of agency, as Leela did, then the line between human and machine is no longer clear. Kunzru invites us to consider whether merging so deeply with technology enhances humanity or risks replacing it entirely.

5.1.2 "Daemon" by Daniel Suarez

"He could see the network clearly enough" (Suarez, 311).

The next novel representing the man-computer amalgamation is *Daemon* written by Daniel Suarez in 2006. It is about *Daemon*, a computer program run by an Artificial Intelligence that spreads all over the world. It causes massive damages and scrutinizes the civilization of the modern world, similar to the previously mentioned virus "Leela" from the novel *Transmission*. The author manages to depict a world in which humans and machines live together as two different species that share an environment. Technology, especially computer technology with data and information networks, is of crucial meaning

here. The novel also engages the reader to second-guess the current structure of society and to think about whether it is the best way for humanity to continue living. A future world is not being depicted in the story, but a plan of how the future could look like, with a "repaired" civilization. The one way to save humanity is following that future vision and the only character able to save humanity is Matthew Sobol who is both a human and a computer. Just like Kunzru in *Transmission*, Daniel Suarez also succeeds in this novel to adapt his writing style to the dual world of the humans, the real world and the digital computer world which, by the by, are equally existential in the life of the human.

Matthew Sobol was the richest man in the Silicon Valley and a genius when it comes to computer programs. He was a game designer and an AI architect (280). He founded the company Cyberstorm Entertainment that created video games. Sobol died of brain cancer and is actually a dead character from the very beginning of the story. He is the inventor of the most famous and successful video game called *Over the Rhine.* It is a multi-player online game that many users all over the world can play together. It is a role-game play set in the historical time of the Second World War in Germany (Suarez, 152).

The game shows many different characters, avatars, that fight as German soldiers or Nazis or other participants in the war. The main character in the video game *OTR* is *Boerner,* a Nazi German fighting in the World War II setting (Suarez, 170). Even though, Sobol is dead from the very beginning of the story, he is the main character in the novel as he continues existing through a created Artificial Intelligence named *Daemon*, and through the avatar in the video game named Boerner, somehow still being alive in the virtual world. Thus, he is three characters at once: the dead Sobol, Boerner the game character, and Daemon the network program.

The story starts with a dead case. Joseph Pavlos, a programmer at CyberStorm Entertainment, is found dead on the street. A cable has cut his throat. It is instantly clear that this is a murder case. The crime investigation starts. The police are called and the main responsible for the case is officer Pete Sebeck (Suarez, 57). However, this is not a normal homicide. Sebeck and the other agents realize that they deal with a technological problem as networks and the virtual world are somehow causing the killings.

In fact, like in all the other science fiction novels, the world in which the people live is described with many modern technologies, especially with high computer technologies. Actually, here two parallel worlds of the humans are described. They simultaneously live in reality as well as in the computer world, the network. This virtual world is described as very important as people live in a technological era. "In general, Sebeck viewed computers as a necessary fact of modern life" (450). "But then, technology was like

religion—you either had the faith or you didn't" (450). At times, the intensity of technological life is mirrored in the characterization, with individuals depicted in mechanical rather than distinctly human terms, emphasizing the blurring boundaries between organic identity and machine logic.

"His usually methodical mind sped frantically through the possibilities" (23).

"Adrenaline surged through his system, his heart beat faster" (23).

"1-9-0-0." She sounded out the numbers with machinelike precision" (525).

Also, most of the criminal activity takes place in the digital world, with investigations focusing on computer-based evidence and data gathered from online networks (Suarez, 52, 75). The story reflects a broader trend in society, where cybercrime is becoming more common than traditional crime, and the digital space play a central role not only in how crimes are committed, but also in how they are tracked and investigated.

With the murder case, it is also believed that the crime has been committed through the virtual world. That is why they call a computer specialist. Jonathan Ross hence gets deeply involved in the investigation. His life is very computer-oriented and is highly skilled in computer technologies, just like Arjun in *Transmission,* designing relational database management systems (Suarez, 144). Ross is also an OTR (Over the Rhine) player and knows every angle of Sobol's developed game. He and Sebeck soon find out that the murderer is not a human being, but could actually be a computer program (Suarez, 186). However, all the other inspectors involved in the case don't believe that the murderer could actually be a machine and therefore focus on finding a real human being, as, according to them, the murderer must be a real person hijacking the network in order kill (Suarez, 61, 240). In the proceedings of the story, also other characters get killed. The killings do not stop and the investigation unit is concerned that they deal with a cyber terrorist. This conclusion is highly similar to the one of the previously mentioned novel. Also, in *Transmission*, Arjun is considered a cyber terrorist as he launched the virus. However, throughout the entire story, the main investigators Sebeck and Ross keep believing that the murderer is not a human. They eventually drive to the crime scene in order to find any evidence that they are dealing with a non-human murderer. Equipped with high technological tools and computers, they find out that the crime scene, in the middle of nature, has a wifi. It is called Daemon_63 (Suarez, 188).

This Daemon_63 is explained as such: "daemon (d'mn) n—A computer program that runs continuously in the background and performs specified operations at predefined times or in response to certain events" (Suarez, 13). This description implies that they deal with a virus, just like Leela in *Transmission,* who also ran continuously in the background and

acted autonomously. As the story continues with the investigations on the crime scene, at one point, the entire area blackens out. No service, no internet, no energy. They start to believe that Daemon, the program, is stronger as expected. Daemon spreads uncontrollably. Killing people after people. The units are still occupied with finding a human being who is responsible. However, in the end, they eventually agree that Daemon is causing the harm. In fact, the deceased creator of the online game OTR turns out to be the *Daemon*. His mission is to turn the world upside down to create a better civilization, a stronger one that holds control over the world and does not lose power to the AI. Otherwise humanity would die, the species of man would dissolve. "I hope you and my Daemon can peacefully coexist […] you serve a crucial role in evolution" (Suarez, 697). Just like in most of the previously mentioned novels, Sobol sees no other way than to use highly developed technology as a measurement to save humanity. Sobol compares the Daemon, the Artificial Intelligence, with a parasite, an organism that cannot live independently and needs another organism as a host. He further says that "Civilization is about to fail" (Suarez, 986) and that the mission of Daemon is to make clear that humans must learn to harmoniously coexist with high technologies without losing control and power over Artificial Intelligence. That is why he wants to change civilization from scratch: "Disruptive innovation, they called it. Change was good. Painful, but good. It made you stronger. When you stopped changing, you started dying" (Suarez, 797). This viewpoint implicitly coincides with Plessner's anthropological idea of human's obligation to create new environments and to adapt since it is part of his natural existence (Plessner, 1964, 5) and agrees with Hayles' claim that the human species can only succeed when it develops around and with technological advancements, making it part of human's very existence (Hayles, 1999, 348).

In the end of the story, the Daemon task force, composed with police, FBI and other inspectors, decide on logging into the online game where the Daemon, or rather where Sobol, still is apparent and alive in the avatar Boerner. They want to face him and to understand the virtual world in order to solve the case. A war begins (Suarez, 639-651).

Shooting, killing, blood and dead victims. The units lose man after man. In the video game as well as in real life. This part of the story merges reality with virtuality as one world. When people get killed in the game, they also die in reality. The (cyber)war has begun. In the end, Sebeck who actually died on death row, wakes up in the morgue. He meets Sobol, for the first time, in virtual form (Suarez, 984). He says that he saved Sebeck from being killed, because he took the powers of the virtual world seriously from the very beginning. This novel explicitly shows the two worlds of the humans, reality and virtuality.

Additionally, it is emphasized that these two worlds cannot be lived in separately. A symbiosis is inevitable. The two worlds become one. Also, the critique of the current civilization is clearly shown in the narrative. The Daemon is a symbol that shows the need to connect both worlds in order to save humanity. In fact, the Daemon, or rather Sobol, also uses symbolism to spread his message. For instance, the self-driving killing car had the word "AUTOM8D" on its license plate (Suarez, 224) which shows that automated technology could turn against humans. Also, the video game called "the gate" indicates the failing of civilization. It is interesting to note that also the author, Daniel Suarez, uses many symbols in the narrative. For instance, in the very first dead that is being described in the story. Joseph Pavlos died of a cable that cut his throat (Suarez, 30). This could symbolize the threats and dangers when humans get too involved with technology, especially computer networks. It shows that the human species could die if they lose the power and control to AI, just like Sobol fears. Also the setting of Monte Cassino (Suarez, 158, 276) in the game is a symbol. Monte Cassino was an Italian monastery that functioned as a military base. "The Battle of Monte Cassino has been described as the hardest-fought battle of World War II (Perry)" This could symbolize the fight that humanity has to face now, in Sobol's view, namely coming together, humans of reality and virtuality and fight for maintaining the power. Last but not least, Sobol says to Sebeck that he used him as his Trojan horse: "You were my Trojan horse, Sergeant" (Suarez, 987). This actually has a double meaning. As, in the virtual world, a Trojan horse is regarded a malware, and in the Greek mythology it is described as a hide-out for soldiers. As mentioned before, Suarez manages to adapt his writing style to both worlds, reality and virtuality, so within his narrative he includes computer language or other linguistic devices to show the perpetual relation of both worlds of the human. For instance, he fluently connects the two worlds (reality, computer) by using also a computational style within his narrative style. He, for example, tells some happenings in the form of *online news* or in *e-mail form* (Suarez, 22, 122). He also wrote the table of content in computer programming style:

"Chapter 1:// Execution
Chapter 2:// Rogue Process
Chapter 3:// Black Box
Chapter 4:// God of Mischief
Chapter 5:// Icarus-Seven
Chapter 6:// Exile
Chapter 7:// Daemon" (15).

In addition, Suarez includes leet speak into his narrative. Exactly, like Hari Kunzru who adapts his writing style and creates a linguistic symbiosis of conventional language with computational one to highlight the inevitable merging of man and machine. Thus, also Suarez amalgamates the two languages of the human worlds, real and virtual, to show how inevitable the modern technological world, especially the computer world, is for humanity (Suarez, 70. 127, 283). By using symbolism all along the novel, he emphasizes the importance of working together as a species to overcome the threats that could harm humanity. Danial Suarez uses the title *Daemon* as a symbol, as well. He wants to indicate that high technologies such as computer networks and AIs can be a daemon that destroys humans or one, like the program, that saves humanity. With his mixed writing style, implementing computer language, he shows that also the world of science fiction is connected with reality. The line between what the real world is and what not, hence, blurs. Consequently, the novel explores a wide range of critical themes, including the merging of digital and physical realities, the philosophical boundaries of human identity in an increasingly computerized world, as well as the ethics of artificial intelligence. At its core, *Daemon* is a reflection on power: who holds it, how it can shift, and what it means when the agents of that power are no longer human. Lastly, it poses essential questions like who controls the future, how do we communicate with or within artificial systems and what responsibilities doe creator s have toward the technology they unleash?

Merging Identities

The novel draws heavily on posthumanist theories, especially those articulated by Hayles who claims that the essence of being human in the digital age is no linger grounded in the presence of consciousness, but rather in the capacity to interface and persist across informational networks (Hayles, 2004, 112). Sombol as a character embodies this concept. Even though he is physically dead, he continues to spread influence through the Daemon. The Daemon operates autonomously executing Sobol's personal ethical and societal plans. The representation of his characters leaves the reader questioning where the line lies between creator and creation, between self and system. The novel definitely blurs the line between human and machine identity. Sobol exists simultaneously as a dead man, a gaming avatar (Boerner), and a digital force (the Daemon). The fractured yet persistent nature of his identity reflects Hayles' notion of "distributed cognition" (Hayles, 2017, 119). It also underlines Haraway's idea of the cyborg which rejects the purity of the human body and embraces hybridity instead (Haraway qtd. in Warrick, xvi). However, this merging of identities also calls into question the stability of the human subject. When the Daemon communicates, it does so in a voice interface that strips human interaction to

binary logic: "Just say ‚yes' or ‚no'. This is an interactive voice system. It can only understand things you say" (Suarez, 193). Langauge, here, is being reduced to a mechanical interface and loses the traditional meaning of human thought and moral complexity. Also, Helmuth Plessner's notion of "eccentric positionality" (Plessner, 2019, lviii) can be connected in the novel's analysis. Sobol can be taken as an example here as he no longer exists physically but still governs and controls the happenings from outside the living system. He is outside the game of life but still plays it through proxies. His avatar Boerner continues to interact with players, give missions, and enforce rules, demonstrating an agency that is both internal and external to human existence. Also, the concept of merged personalities is evident in how players of the game OTR must adopt roles assigned by the Daemon: "Your user ID is…J-92…If you deviate from this role…you will be removed from the system" (Suarez, 235). Not only will they be removed from the virtual game, but executed in real life. This shows the intertwined identities in reality and cyberspace. Hence, in the novel, identity becomes programmable and functional, starkly contrasting the humanistic notion of autonomous self.

Linguistic symbolism

Symbolism runs throughout the narrative. Pavlo's cause of death, a cable cutting his throat (Suarez, 30) shows symbolically how networks can not only connect but also destroy. This moment is not only a critique of the physical dangers of technological systems, but also a posthuman metaphor describing the cable as a component of connectivity and data, it now becomes a weapon, causing not only dangers for humans but also severing the illusion of control over the systems the humans have built. It underlines the posthumanist's idea of the dissolution of boundaries between the technological and the organic. Similarly, the game "The Gate" is described as "about a cult opening a gate to the Abyss and releasing a demon that lays waste to the world" (Suarez, 184) which can be seen as a symbolic reflection of the chaos the daemon causes. Here, the "gate" can be interpreted as a portal between human and non-human intelligence. Also, Kunzru's novel title "transmission" indicates such a meaning.

Additionally, the novel's structure reinforces its themes. Suarez, for instance, uses chapter titles in the style of computer directions ("Chapter 1://Execution"). Just like the previously mentioned author Kunzru, Suarez also wants to do more than reference computer science. He metaphorically challenges the reader to interpret and reevaluate the meaning of identity, power and presence in the posthuman condition.

Powerful Advantages

Suarez also critiques the uneven distribution of technological knowledge and its implications for power. For instance, the police officers included in the case think from the very beginning that the murderer has to be a human. Their lack of knowledge in regards to the technological possibilities lead to a disadvantage as they do not get the chance to understand the complexity and dangers of this case. As one of the officers says dismissively: "Don't talk science fiction crap" (Suarez, 147). Whereas characters like Ross who are deeply embedded in digital systems and highly skilled in computational technologies, are depicted as possessing a survival advantage in this new world. This is also clearly depicted when Sobol explains that he saved Ross because he took the understood the complexities of the virtual world and took them seriously (Suarez, 984).

Not only is there a power discrepancy between humans that have no technologicall knowledge with those who have, but also the blurry line between reality and virtuality poses a threat as a powerful symbiosis where artificial intelligence, implemented by humans, can overtake the power and control society once and for all.

Conclusion

The novel presents a posthuman world where the boundaries between human and machine, reality and virtuality, dissolve in a complex hybrid existence. Drawing on Hayles posthuman theory, the novel illustrates how identity is no longer rooted in conscious embodiment, but in informational patterns embodied in networks, as seen through Sobol's multiple identities. Identity is no longer singular or personal. The sentence "Life was a game to Sobol" (Suarez, 242) indicate that the boundaries between life and simulation have dissolved. In this framework, being human is redefined not by individuality, but by adaptability to a powerful, data-driven environment. Also, the novel challenges to consider whether identity can exist across multiple realities. Just like the suggested multiform theory in *Proteus in the Underworld.* Through symbolic language, the novel redefines language as a functional, data-driven medium rather than a space for moral reasoning. Finally Suarez explores the ethical tensions and power imbalances that come along with this world governed by code, where technological literacy becomes a survival advantage and artificial systems can overtake human authority. Ultimately, the novel presents a future where survival and influence depend on one's ability to adapt, and co-exist with intelligent systems. The narrative blurs the line between machine and man reinforcing the idea that the two entities are now inseparable. Suarez challenges readers to reflect on the future we are creating, and on the power we may soon lose if we fail to understand the technologies we depend on.

5.1.3 "Ready Player One" by Ernest Cline

"Being human totally sucks most of the time.
Videogames are the only thing that make life bearable" (Cline, 34).

Ernest Cline wrote *Ready Player One* in 2011 and it was adapted into a movie in 2018. The science fiction story deals with Wade Watts, a poor student, who intensively plays a computer game named OASIS. His main goal is to win the challenge in this game.

The story takes place in two worlds, on the one hand the characters are shown in the real world and on the other hand the characters find themselves in the virtual world. It is the year 2045. The real world is depicted as a dystopia. Humanity suffers from poverty and the Earth suffers from climate change (Cline, 15, 45). In the virtual world, life looks much better. The virtual world is presented in the video game OASIS. Just like the title already implies, the OASIS is paradise-like and clearly is a resort for humans. It is not only a game, but also a social platform. This explains the widespread popularity of the video game and the fact that nearly everyone possesses an account. In contrast to the dystopian reality, OASIS is depicted as a utopia. At some point, Wade describes OASIS as a magical place where anything was possible: "Luckily, I had access to the OASIS, which was like having an escape hatch into a better reality. The OASIS kept me sane. It was my playground and my preschool, a magical place where anything was possible" (Cline, 48). Like in the previously mentioned novel *Daemon,* also here "[t]he lines of distinction between a person's real identity and that of their avatar began to blur. It was the dawn of new era, one where most of the human race now spent all of their free time inside a videogame" (Cline, 145). With the contrasting depiction of the two worlds, Cline reflects the novel's focus on escapism and the human desire for purpose and agency. When James Halliday, the creator of the video game, dies, he leaves a legacy to his player community, an Easter egg. He created a contest within the video game where players could participate in. The contest is: whoever finds the hidden Easter egg in the game, wins shared ownership of OASIS worth 240 billion dollar (Cline, 24ff). Also Wade takes part in the contest. His avatar is called Parzival. He spends all of his time in virtual reality as he tries to win the contest. The real world is of no interest to him (Cline, 50, 271, 447). The story is divided in different levels. In fact, Cline even mingles levels and chapters in the table of content to underline the concurrence of reality and virtually in the life of humans, whether in science fiction or the real world outside the book.

This is very similar to Suarez approach in his novel *Daemon* where he also writes his table of content in code form and programming order. In "Level One" Wade is being introduced as a character. It is being explained how the contest works. The so-called "gunters" are described, the egg-hunters in the game. As the story progresses, Wade makes fast progress and finds a key for the next step that would lead through a gate (Cline, 180). As the first player succeeding the first step, his avatar gets famous in the gaming community (Cline, 226). However, his fame comes with a price. He is threatened by the Sixers, a group that cheats in the game and unfairly tries to win the contest (Cline, 83ff). They attempt to persuade Wade to join their cause, but he ultimately refuses (Cline, 326).

After the rejection his family home is being destroyed in real life since the Sixers have tried to kill him (Cline, 340). He has to flee. Eventually, he seeks refugee at his friends' house. However, the battle between the Sixers and the other players, Wade and his friends, becomes more serious, The line between the virtual life of OASIS and real life is blurry from the very beginning. It escalates when the Sixers break into every players house and try to kill them in reality. (Cline,550). In "Level Three" Wade follows a new plan (Cline, 365). Using a fake identity, Wade deliberately allows himself to be captured by the Sixers within the game (Cline, 607ff). Once inside their system, he infiltrates their network to uncover evidence of their illicit activities (Cline, 651ff) as the organization engages in illegal affairs while participating in the game. Eventually, he spreads the incriminating information across the internet to expose their wrongdoing (Cline, 665ff). In the end, Wade finds the egg and wins the contest. He shares the winnings with his friends (Cline, 789).

The novel portrays a future where the digital and physical worlds are deeply entangled.

With this display of contrasting worlds, the narrative also raises the questions on humanity technological evolution and the risks of digital dependency. By depicting the real world's civilization in decline, "[s]ome people even say it's collapsing" (Cline, 47) the

virtual world of OASIS offers solace. This reflects a society that would rather escape into simulation than confront real-world problems. In addition, the highly contradictive, but deeply entangled two worlds emphasize the blurry line when it comes to human existence, as the humans simultaneously live in both of the worlds. Choices people make in virtual spaces have profound real-world consequences, like the decline of joining the Sixers led to attempts of killing people in real life. Cline ultimately encourages readers to consider both the potential and the pitfalls of a life lived predominantly in virtual space, and to also remember the value of engaging with the real world, even when the virtual one seems more rewarding. This analysis focuses on the examination of how the novel discusses the meaning of identity, communication, autonomy and morality in both, the physical and digital world.

Fragmented Identities

At the heart of the novel is the question of identity. How is it formed, expressed and altered in a virtual world? Wade represents such a fragmented identity. In real life his circumstances are bleak, but in the virtual world of OASIS he reinvents himself and creates his "heroic" avatar Parsifal. This division between offline reality and online persona raises critical questions about authenticity and selfhood. Wade even says that OASIS kept him sane and that it was his "playground […] a magical place where anything is possible (Cline, 48). The use of the word "playground" suggests freedom and imagination. Also, Hallaway, the creator of the game, continues living in the form of the avatar anorak (Cline, 200, 819). Similar, to Sobel in the novel *Daemon,* who continues to live as an avatar in a game as well as in the form of Dameon. Again, this highlights the unboundedness of humankind that Plessner mentions and underlines the human's ability to create an environment where he can thrive, even though, in this context, it means bodiless. Also, Hayles describes the human as a bodiless fluid that can exist in any kind of human form (Hayles, 1999, 17). As the story progresses and Wade gets committed to winning the game, the boundaries between the real and the virtual begin to collapse. One key element of the novel is how deeply players identify with their online personas. Even after meeting face to face, the main characters still refer to one another by their avatar names. When Wade finally meets a girl he met online in the game, named Art3mis, she introduces herself as Samantha and replies: "It's nice to finally meet you in person, Wade" (Cline, 836). This bleeding of virtual and real identities illustrates how the digital world has become inseparable from people's sense of self. Maybe even suggesting that digital identities are no longer asks, but extensions, or yet even replacements, of the self.

Digital Communication

Cline's linguistic choices also reflect the impact of digital culture on human interaction. Just like in Kunzru's and Suarez's novels, also this narrative is written in a mixed form of conventional language and cyber leet speak (Cline, 19, 90). The fact, that cyber language is being also used in real life shows that people cannot divide the both parallel worlds from one another. It also shows that through the virtual world, humans become faster: "I was about to ask if she went to school here on Ludus, but she continued to talk, faster and faster, as if a floodgate had opened in her brain. The words just poured out of her. She was barely pausing to breathe" (Cline, 218). Hence, the language in the novel becomes adaptive, fluid, and performative as humans are regarded symbionts of fluid information and data streams within a natural human body. Just like Hayles and Haraway describe humans to be in their posthumanist theories. The change in linguistic style reflects a broader thematic concern: in a digitally mediated world, language functions not merely as a means of communication, bit as a performative and strategic tool. Abbreviations, acronyms, and specific leet speak gives the power and advantage to those fluent in this language. Similarly, as to the novel „Daemon" where the humans who were more technologically skilled had an advantage for overcoming possible future threats. Also, here, those who understand the coded language have the power to control the gameplay and to react prior to occurring threats. This also raises the critical question of ethics since power is given to only those humans who fully adapt tot he technologically advanced environment.

Broken Society

The novel also confronts the ethical responsibilities that arise when technology becomes inseparable from daily life. The OASIS offers users the opportunity to escape reality, marked by poverty, loneliness, and despair. However, the ease of immersion encourages avoidance rather than engagement. As Wade describes: "Being human totally sucks most of the time. Videogames are the only thing that make life bearable" (Cline, 52). This admission is both honest and troubling. It reveals the psychological toll of a broken society, but also underlines the possible dangers of relying on a virtually created world as a substitute for the real world. As Bell has highlighted: the cyborg, being intertwined with digital space, offers an ideal escape route (Bell, 480). Ernest Cline manages to illustrate both sides of technology, the merits and the downfalls, capable of empowerment and exploitation. The ethical dilemma lies in how people choose to use it. Wade's journey involves not only solving clues in the game in order to win, but also to learn when to disconnect. His victory is not about how to win the game, but how to make real

connections to other humans, as he finds new friends while fighting against the Sixers. Even more, he meets, Art3mis, the girl avatar, in real life, whose real name is Samantha. This ending suggests that making meaningful connections in real life are more important than losing oneself in a virtual world and playing the "game of life" in there. As Wade, in the end, realizes: "For the first time in as long as I could remember, I had absolutely no desire to log back into the OASIS (Cline, 837). Ultimately, the novel underlines the importance of engaging with reality and living life to its fullest potential, rather than becoming absorbed in the artificially constructed realm of cyberspace, which primarily serves as a form of escapism.

Conclusion

In conclusion, "Ready Player One" critiques a society consumed by digital escapism, where identity, language, and morality are shaped by virtual environments. Through Wade's journey in OASIS, the novel highlights the risks of losing oneself in artificial realities and the ethical dangers of unchecked technological power. Language becomes a tool of performance and exclusion, reflecting deeper societal divides. Ultimately, Wade's choice to reconnect invites the reader to consider what it gained and what is lost when society retreats from reality into simulation. The message here is, unless humanity addressers the inequalities and crises of the real world, virtual words will remain both a seductive distraction and a dangerous escape.

5.3 Faster Human: Update Completed

"The computer is the key that opens up doors to new different worlds" (Kaiser, 37).

As the analysis of the three novels from around the 2000s have shown, life has drastically changed for human beings. They now inhabited two worlds at the same time: reality and virtuality. The stories have shown that both worlds are important for the humans as life develops to be more technological and computers and networks become more existential for modern life. All three novels manage to converge the two worlds within the narrative, by, for example, using computer language and online text forms, like e-mails or online news. All the characters in the novel show a life where one cannot avoid the use of technology, especially of computers and networks. As, around the nineties and especially after the millennium, the world started to become an age of information and data, humans

needed to adapt themselves and their lives to this era. Man-machine amalgamations become the normal human form and also the characters in the novels depict the symbiosis. The power of information and data is emphasized in the stories as the government, authorities, companies, people depend on it. Getting information, processing it and using data for professional and personal life is the normal human condition now. One can say that information is the new blood that flows through human veins, hence humans become faster. It has been stated before that information needs to be regarded as "a kind of bodiless fluid that could flow between different substrates without loss of meaning or form" (Hayles, 1999, 17). Meaning, that information can flow in many different forms, may it be in computer networks or in humans. When humans upload their information and data onto the network instead and live their virtual life, it means that also the human does not need to be fully embodied in his natural body, he thus can exceed the borders of it and also life virtually, as information, in the computer world. The novels dealing with video gaming describe this very phenomenon. Like in the novel *Daemon* by Daniel Suarez, a famous and genius computer programmer dies from brain cancer, but continues living as an Artificial Intelligence in the virtual world. Also, in the latter analyzed novel *Ready Player One,* a dead video game designer continues living through his avatar in an online game. In all the stories, the power of the computer network is highlighted. There is always a slight hint that people are close to losing control over the computer technology that is becoming stronger and more intelligent. In *Daemon,* throughout the entire story the characters are unsure whether it is a human being or a computer program that kills people. The line blurs. Also, in *Transmission,* the line blurs. As Indian hacker Arjun Mehta created a computer virus to seek revenge for a company that fired him. Even though he is a virus specialist and is the creator of that particular virus that is spreading, he loses control over it as it automates itself, mutates, and spreads uncontrollably. He cannot do anything against it. The power shifts from the human master to the computer program acting independently. In the last novel, *Ready Player One,* the same thing happens. The line between reality and virtuality blurs. As there is a battle going on in an online game, between gunters and Sixers, the struggle also occurs in reality when the Sixers start to kill their opponents in real life. This fading line between reality and virtuality is often described in symbols in the novels. For instance, in *Transmission,* computer symbols are used to reveal a certain message. By putting the sign * as a suffix after the words "tomorrow" and "results", the author wants to emphasize the ongoing development of people changing and becoming different. As * means something is being multiplied, Hard Kunzru wants to say that tomorrow multiplied equals

= the future and that results multiplied equal = ongoing development and changes. Also Daniel Suarez uses many symbols in *Damon*. The computer genius Sobol that crated Daemon, the intelligent computer program controlling human life, dies from brain cancer. Here, the brain cancer is compared to the Daemon, something that spreads fast and where people cannot do anything against it. Also, the company name CyberStorm may be a symbol meaning that if people do not pay attention, they can easily lose control and a storm can occur in the cyberworld leaving heavy aftermath. In the last story the names of the game and the avatars can be regarded as symbols. The world is named OASIS and is a resort from real life, and names of knights and Greek goddesses are used for the avatars to show the fighting against the evil to keep the world, the virtual one, a good place. Another similarity that can be found in the three novels is the split of computer geeks and "normal" people. Computer programmers, hackers, and gamers are described as intelligent, but also socially weird. In face, "normal" people think that they suffer from a mental condition and an illness and that is why they are so super intelligent and show a strange social behavior. Interestingly, in the two novels *Transmission* and *Ready Player One,* two characters that are computer geniuses are believed to suffer from Asperger's syndrome, a form of autism (Kunzru, 139, Cline, 135). In *Daemon,* a genius character suffers from a mental illness (Suarez, 391). All in all, the three novels manage to show the fast new world in which the humans live, next to their other world, reality. In the modern digital landscape, information and data have become vital components of everyday life, approaching the importance of basic human necessities such as air and water. What was once a manageable stream of information has intensified into a relentless flood, requiring individuals to process and respond more rapidly in order to remain informed, relevant, and capable of functioning within increasingly fast-paced environments. In most of the science fiction stories, this heightened ability to absorb and interpret vast amounts of data is portrayed as an evolutionary advantage, often enhancing human existeince. Characters in futuristic settings frequently use computer technologies and other advanced innovations. Even though these narratives mostly present the virtual world as a utopia that is better than reality, they, at the same time also highly criticize the blurring line of the amalgamation of man and machine that is now defining the true nature of human. Those narratives that envision humanity's technological future frequently raise concerns regarding the erosion of identity, authenticity, agency, control, and ethical accountability. Particularly in societies where technological systems are predominantly trusted and widely embraced. By becoming "faster" humans, we must not lose track of what it truly means to be human.

6. Type 3.0. : Smarter Human—Improving the Mind

"Minds like ours are complex, messy, contested, permeable, and constantly up for grabs"
(Clark, 10).

As this study has already identified two distinct human archetypes, the stronger and the faster human, within the history of science fiction literature, this chapter will now turn to examine the final type, the smarter human. Science fiction stories from the 70's to the 90's mostly dealt with human body modifications that were possible thanks to biotechnology and cosmetic surgery. The stronger human developed. With the rise of the internet, before the millennium and with computer sciences blooming in the 2000s the next human type occurred in science fiction narratives, the faster human. The final type to be examined is the more advanced, intellectually enhanced, smarter human, a figure commonly portrayed in contemporary science fiction narratives. This study focuses particularly on works published in recent years. This chapter will demonstrate that the merging of human and machine has entered a new phase—one in which the two no longer function in symbiosis, but instead converge into a single, indistinguishable form. Human intelligence is transferred to machines, while machines increasingly embody human traits, resulting in a unified mode of existence where boundaries between the organic and the artificial are effectively erased. Before the subsequent novel analyses explore this emerging human form, the following chapters will first provide an overview of the scientific discourse surrounding the human mind and intelligent technologies. In doing so, they will also introduce the latest advancements in the field that directly engage with contemporary debates on cognition and artificial intelligence. This discourse will then be linked to its representation in science fiction literature. Throughout the course of human development, individuals have consistently sought to transform and enhance themselves —striving to improve their condition, and, ultimately, to evolve into a more advanced version of the human species. They started with altering their bodies, to make themselves stronger. In pursuit of this evolution, they then created a new realm in which to exist, a virtual world that runs parallel to physical reality, offering an alternative space for life, identity, and experience. There, they became faster. However, this development alone is not sufficient. The most defining aspect of what makes humans a uniquely advanced species is the mind. The desire to become increasingly intelligent is deeply embedded in human nature, and it parallels the rapid advancement of technology, which itself is

progressively becoming more intelligent. As a result, humans are compelled to adapt to this ongoing evolution, striving to match the growing intelligence of the technologies they design. Artifical Intelligence represents one of the most remarkable technological achievements, showing human ingenuity in creating an intelligent technology that imitates, yet even rivals, human cognitive abilities, but still remains non-human. "The goal of AI was to build, inside a machine, an intelligence comparable to that of a human. The human was the measure; the machine was the attempt at instantiation in a different medium"and further the goal was to create "consciousness inside a machine" (Hayles, 1999, 669). Since humans are already intermeshing with machines, they want to connect on a deeper level and even achieve a greater progress than before. Actually, there is no difference now when it comes to humans and smart machines. "[…] Steno wrote in his *Discours sur l'anatomie du cervau (1665):* << since the brain is a machine, we have no reason to hope to discover its design through means any different from those used for discovering the designs of other machines" (Steno qtd. in Magnani, 142). The brain functions similar like a computer network with algorithms that provides a logical outcome by reading binary codes. It's logical thinking, just like humans can do. "As neuroscience discovers the algorithms in the brain underlying computation, scientists are increasingly realizing that brains are computational entities" (Schneider, 7-8). Hence, the modern world is a place now "[…] in which human and machine cognitions intermesh […]" (Hayles, 2012, 13). However, comparing those two "thinking machines" it can be pinpointed to the fact that the computer's "brain" is much faster and immortal, unlike the human's. In fact, Michael Hauskeller thinks that it is even human's obligation to enhance the mind in order to be able to solve all the problem's that humanity faces: "[…] if we were only smarter and more creative we would be able to solve all those nasty problems that we face today, from climate change to political unrest. […] Given that our survival might depend on finding a solution to those problems, improving human cognition is more than just an option. Instead, it is "a matter of life and death" (Buchanan and Savulescu qtd. in Hauskeller, 29). Eo ipso, it can be seen as human's duty to enhance the mind whatsoever for saving the species. "Building Better Brains" (Clark, 83) could be the remedy.

Elaborating on that thought, science and technology play a more crucial role than it has even played before. It is human nature to develop and to constantly change their environment and themselves. As of now, humans have already changed their bodies to the better and amalgamated with computers which formed a new environment to thrive in, the virtual world. As humans are halfway there to changing their natural condition completely, they do not stop here. The last instance would be to also improve the minds

and to create a total independence form their limiting conditions of their natural bodies. Implanting the strong human asset, the mind, into a more durable, faster, and immortal machine could bring humanity to the final point of their development.

6.1 Technology Today:
Artificial Intelligence and Brain-Computer-Interfaces

"This is not like anything we have ever seen…It isn't like anything that has ever been done" (Dick qtd. in Seedhouse, 1).

Asking Alexa about the latest technologies for enhancing cognitive performance, checking a smartwatch to monitor heart function, interacting with a chatbot to resolve a delivery issue, or playing chess against a machine capable of strategic reasoning— these are no longer futuristic scenarios, but rather common aspects of daily life for many individuals. Such interactions illustrate how deeply integrated intelligent technologies have become in our everyday routines, shaping the way we think, communicate, and make decisions. Smart technologies are now ubiquitous. We often take them for granted, yet continue to value the significant convenience and efficiency they bring to our lives. For humans, life means change, development and most of all progress. Progress is always associated with improvement. Technologies are a natural part of human life: "There has never been such a thing as humanity without technology nor technology without humanity" (Kaplan, 7). When asking ourselves: "Aren't we technological? Or isn't technology human" (Liggieri, 11)? It seems plausible to say that of course technology is part of human's nature. Our zeitgeist is technological. Plessner already explored the human nature and pointed out that creating artifacts, such as technologies, belongs to the natural human condition. Ever since humanity, technology has been created. In fact, "[t]here was no problem for which science could not engineer a technological solution" (Ingold, 53). Human created converging technologies to overcome natural limitations. Technologies such as biotechnology, nanotechnology, information technology, and even cognitive technology. These inventions underline the close working together of man with machine. However, by embedding technologies in our lives and bringing two worlds into one, like biology and technology becoming biotechnology, or also connecting physical and virtual world and making them indivisible, it implicates that we become

"increasingly helpless as [we build] more machines and come[…] to depend on them" (Warrick ,42). In today's "culture of technology[…], [w]e need to see ourselves (humans) as sharing boundaries and selves with technology" (Pramod, 28, 47). These shared boundaries are explicitly shown in the field of biotechnology, as humans share their very selves, their bodies with technologies. Considering artificial aids like prostheses, pacemakers, implants and many other inventions in this field, one can observe the simply created fusion of biological and technological means. In fact, there is a steady development in the fields of science and technology as it becomes more mature and complex. The integration of biological systems with artificial technologies has become increasingly routine. What was once considered groundbreaking is now regarded as almost effortless. Biotechnology made genetic engineering possible. Intervening in a human's genome is technically and technologically possible. The most recently developed field in biotechnology is bioprinting. With the modern invention of the 3D printer it is possible to print biological substances artificially. "3D *bioprinting* artificially constructs living tissues by extruding not metal or plastic, but cells" (Seedhouse, 65). In fact, it is recently researched how to print food, to unburden the ecosystem. As a matter of fact, "biofabricated meat" is about to become "the" new food (Theobald). It is supposed to help fight climate change and to reduce industrial farming.

Another very advanced field that changes human's live in a drastic way is neuroscience combined with computer science. The human brain is examined thoroughly, especially the proper functioning of the brain's synapses and neural nets. Also, the study of the mind is of significance in this field. It links psychology with technology and the studies especially focus on "memory". Again, as humans are compared to machines, both have informational patterns flowing inside of them and both have neural nets and memory, neuroscience and cognitive sciences are the main fields in which human's cognitive capacities are compared with and linked to machines. Today, the newest technologies are so impressively developed as technology can interfere in the human's mind and artificial aids can support the biological brain. The most important field involved in mind-machine connections are neuroscience combined with computer science, resulting in brain-computer interfaces. The mostly discussed invention in this field might be the one of Artificial Intelligence (AI). As mentioned before, AI is considered a machine intelligence that can perform cognitive tasks similar to a human being.

There are three different levels for machines of how to learn intelligence. At the foundation lies Aritificial Intelligence, followed by the more advanced subset of Machine Learning,

and culminating in the most sophisticated form of machine intelligence: Deep Learning, which enables systems to process data in increasingly complex and autonomous ways.
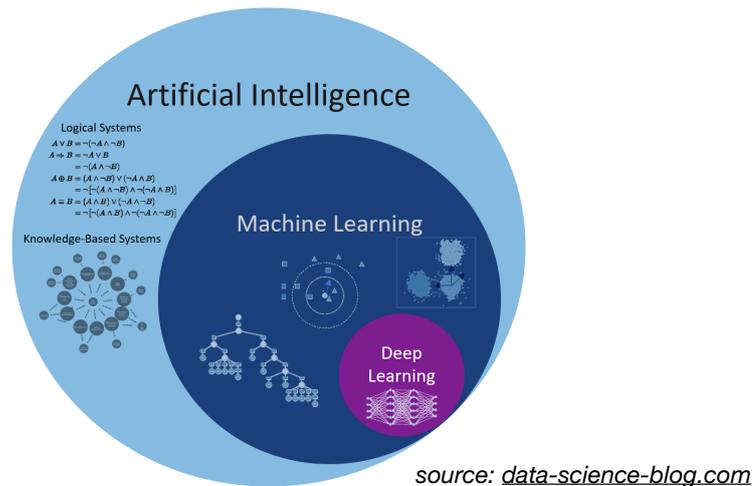
In *Artificial Intelligence By Example Acquire Advanced AI, Machine Learning and Deep Learning design skills* by Denis Rothman, these three levels are describes as such (2):

- *AI covers all domains*
- *Machine learning is a subset of AI, with clustering, classification, regression, and reinforcement learning*
- *Deep learning is a subset of machine learning that involves neural networks*

AI is the overall term for machine intelligence where a machine is able to process data in through logical systems, by using, for example, algorithms, and through knowledge-based systems that need to be fed with data and information, so that the machine is able to develop a pattern and act accordingly to the pattern. Once the machine developed patterns and act independently according to the collected data, it achieves the level of *machine learning*. This intelligence can be even taken a step further where the machines can learn intelligence based on artificially created neural networks (Aunkofer, 2018). Deep learning is "a type of machine learning based on artificial neural networks in which multiple layers of processing are used to extract progressively higher level features from data" (oed.com). The clusters are much more complex, so that the machine can process information more precisely. Hence, the machine becomes more intelligent. Rothman says that, however, "these domains often overlap" (2). Cutting-edge AI technologies are enabling machines to attain ever-higher levels of intelligence, bringing them closer to the cognitive capabilities traditionally associated with humans.

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Also, transhumanists are highly supportive of developing AI further. "Technological progress in all other fields will be accelerated by the arrival of advanced artificial intelligence" (Schneider, 278). In fact, they truly believe in the positive impact that newest technologies can have on humanity. The Transhuman Declaration that has been created in 1998 and ever since modified (Daphne, 96) states that "what we are now, even when we are at our best, is not good enough" (Hauskeller, 75). They support technological interventions that bring about large-scale changes in the human's way of life, yet even in the human himself (Heilinger, 1): "The enhanced human is the true human" (Hauskeller, 71), they say. Transhumans also support "our right to control our bodies and minds, even if our choices makes us something other than 'human'" (Hughes qtd. in Heilinger, 106). They claim that human evolution is not finished yet (Heilinger, 110). The nature of man in work-in-progress, always developing, changing, becoming other. Transhumanists say that the human has to take as much responsibility for intervening as for not intervening (Heilinger, 118f) and that is why they strive for enhancing "our cognitive, mental, physical capacities beyond the normal human level" (Warmbier, 9). Cognitive enhancements are in the focus of the human development towards a better species. "Cognitive enhancements are, roughly put, all interventions that, through the manipulation of the human brain, improve the human knowledge situation by facilitating or accelerating knowledge acquisition, processing, storage, application or range" and, for that matter, the most desirable area to enhance is the memory meaning enhancing "the ability to store and retain information" (Hauskeller, 13, 21). "According to the transhumanist vision of progress, there will come a time when the curve of technological progress becomes almost vertical, at which point science and technology will have entered the state called the singularity. At the outset of the singularity, it will become possible for us to upload our minds into computers. Thanks to a thorough scan of the brain's synaptic structure, it will be possible to transfer information patterns to an electronic medium" (Warmbier, 283). "What then is the Singularity? It's a future period during which the pace of technological change will be so rapid, its impact so deep, that human life will be irreversibly transformed" (Schneider, 201). Transhumanists especially hope that through technology the human cognition can be enhanced "by uploading the human mind and thereby turning it into an immortal 'mind-file'" (Boller, 96). Memory plays a crucial role here, as it is tried to maintain a human mind, the memory, within a machine, even when the human body is not apparent any longer. "The human mind would thus become immortal" (Vaas, 86). Seen from another angle, it could be said that machines could live with a human mind and continue developing independently from human beings. "Scientists who stand

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at the forefront of artificial intelligence (AI) have long dreamed of autonomous "thinking" machines that are free from human control. And now they believe we are not far from realizing that dream" (Kaplan, 375). It is believed that "human enhancement and strong AI might create supra-persons, that is, being that are […] superior to humans" (Douglas, 473). These advanced technologies that brought a new super intelligent being into existence are referred to as the agents of the singularity. It is believed that "artificial intelligence will surpass human intelligence and speed up evolution through non-human machines" and that, indeed, they "would do so more effectively than humans. Biological humanity would no longer be the smartest life form in the block" (Kaplan, 342, 350). In fact, many scholars agree on the assumption that creating "superintelligence may be the last invention that humans will ever need to make" (Kaplan, 350, Schneider, 278). The question will be of who is going to have control, the creators of superintelligence, the humans, or superintelligence itself, as the new smart life form? This question is also widely discussed in the scientific field. Anyhow, merging with new technologies is, according to transhumanists, a must when humans want to continue living in the future. "Not only can we enhance, we should enhance" Kaplan, 417). However, other scholars have another standing towards embracing newest technologies and especially developing AI further. "While many computer scientists consider AI to be simply an especially interesting aspect of their field, [...], in the popular press AI is frequently framed as a threat to humanity's survival. Elon Musk, founder and CEO of Space X and Tesla Motors, has warned the public that with AI we are "summoning the demon"; similar warnings about AI's *existential risks,* that is, its potential to threaten meaningful human existence, have been voiced by public figures such as Stephen Hawking and Bill Gates, along with a host of AI and robotics researchers (Standage qtd. in Lin, 350). Thus, when we are using Alexa to access information, a smart watch to check our heart rate, contacting a chatbot to solve a problem, or playing chess with an intelligent mind that is not human, are we already "summoning the daemon"? In fact, "[...] carebots for the elderly, sexbots for the lonely, chatbots for customers [...] and artificial assistants like Siri [...] are just the tip of the iceberg" (Lin, 348). "Whether we recognize it as such or not, we are in the midst of a robot invasion. We chat with them online, we play with them in digital games, we collaborate with them at work, and we rely on their capabilities to manage many aspects of our increasingly complex data-driven lives" (Gunkel, iv). This shows that we already overtrust newest technologies and somehow are extradited to them. When we think about what is still to come "[…] we should imagine our future selves bathing or floating in technology […]" (Wills, 105), hoping not to drown.

6.2 Science Fiction dealing with AI and other High Technologies

"Science fiction as a genre, has traditionally supplied its readers with plenty of confrontations with the unknown [...]" (Slusser, 41).

Science fiction confronts the reader with the unknown. When putting it into the context of newest high technologies, such as AI or brain-computer interfaces, and the discussion of an emerging super-intelligence in the era of singularity, the unknown consequences of advancing machine intelligence may pose unforeseen risks, potentially becoming a disruptive force that could strike humanity without warning. Indeed, numerous science fiction narratives from the past five years have explored this very notion, often portraying the advancement of machine intelligence as a potential threat or a source of profound uncertainty for humanity. Most of the stories present human future worlds as highly modern, enhanced, advanced, where live is easier, faster and better for people. Humans live closely with machines and are also able to enhance their minds artificially and to upload their memory onto a computer. However, there are also many science fiction stories who depict this advanced technology, especially machine intelligence, as a threat for the human species. Whereas some other stories show both the benefits and the potential dangers of advanced technologies. They describe machine intelligence as a blessing as well as a curse. "The growing consciousness is a danger and a disease" (Nietzsche qtd. in Welsch, 8). In either case, the majority of these narratives tend to depict the future as a technological utopia, characterized by advanced innovations and significantly enhanced human living conditions. It should be emphasized that science fiction does not aim to represent reality as it currently exists, but rather to imagine potential future worlds. Nonetheless, it is evident that science fiction remains closely informed by and responsive to contemporary scientific and technological discourse, often reflecting prevailing hopes, concerns, and debates within society. Authors often engage with pressing issues of contemporary civilization, incorporating current scientific debates and the latest technological innovations into their narratives. As a science fiction writer himself, Isaac Asimov, supported the view that authors in the genre often indirectly evangelicals with contemporary scientific and technological discourse through their narratives: "I would say that the surreal background of the story in science fiction could, conceivably, be derived from our own by appropriate changes in the level of science and technology" (Asimov, 1983 17). Grace even goes further by saying: "Literary fiction meets

scientific fact" (Grace, 226). However, there is still a lot of speculation in fiction. Humans living on other planets, bodily altered in such a way that they even appear to be a new species, or machines taking over the world, eliminating the human race is nothing but creative fantasies. As these stories mostly play in the far future, for example in 2045, speculations of how the human future may look like are explored in this genre. Actually, when we consider the current real life discussion of a possible super-intelligence emerging into human's life, in the near future, one can also argue that it is a mere speculation towards the future of mankind. In fact, even "Stephen Hawking predicted that machines which become more intelligent than humans will be a threat for human survival. Elon Musk warned that AI applications could be a threat for human civilization. Jay Tuck even goes further and claims in his work *Evolution ohne uns (2016)* that AI could eradicate humanity" (Liggieri, 151). One thing is clear: speculation about the future of humanity is not limited to science fiction bur is also a prominent topic within the fields of science and technology. Regarding the depiction of the future human in science fiction, another theme can be observed in most of the narratives. Science fiction writers question the future human species. They ask themselves if humans would still be human, when they radically enhance through technology and change in such a way that they are mostly built artificially and lose more biological attributes. "The disappearing of the organic means: The human becomes mind, and his body becomes machine" (Irrgang, 173) When they are described as human that became machines, are they still human then? "Where do we set the boundary" (Irrgang, 16)? One immanent concern is found throughout modern science fiction stories: a "future civilization dominated by machines" (Liggieri, 76). It is certain that the risks that come along with new technologies cannot be calculated (Heilinger, 2). "Technology was technology in the hands of the humans. However, since the age of automation this idea of technology seems to have come to an end. The idea of autonomous technology is that technology is out of control and has created own cycles, independent from human creation" (Irrgang, 9-10). Thus, more often stories entail a shift where humans have control over their technologies in the beginning, but where, in the end, it shifts and machines take over control and power. Humans slightly lose control "[…] and it seems the balance of dominance between human and machine is slowly shifting" (Pepperell, 2). "First the machine serves man because he understands how to build it and control it. But the machine begins to dominate" (Warrick, 18). In fact, "[i]n the relation between man and marine it is unclear who makes and who is made" (Haraway qtd. in Prokić, 215). Dystopian stories even present a world where this situation is out of control and where "machines gone wild" (Lin, 1) and where civilization fails. As mentioned

before, this fear is not only apparent in science fiction stories, but also among scientists, like Stephen Hawking or Elon Musk, that realize the power of newest technologies and see the possible downside of it concerning humanity. Indeed, it is a thin line. We should make use of new technologies that could help improve our lives, "[b]ut we should also understand the risk of overturning that comes from whatever technology unleashes, coming always from behind us, capable of landing us flat on our face" (Wills, 105). In the literary field, there are even some measures taken for keeping that fear from happening. Science fiction author Isaac Asimov established some ground rules for keeping control over machines. "All robots in his fiction must obey these laws to make sure that they don't turn against the human creator. As these laws make clear, Asimov's robots are, by definition, benevolent, meant to be helpers and companions to humanity" (Booker, 201). Throughout Asimov's science fiction stories, all created robot characters follow these laws of robotics and coexist peacefully together with their human creature.

```
//three laws of robotics
    1. a robot may not injure a human being,
       or, through inaction, allow a human
       being to come to harm.
    2. a robot must obey any orders given
       to it by human beings, except where
       such orders would conflict with
       the First Law.
    3. a robot must protect its own existence
       as long as such protection does not
       conflict with the First or Second Law.
  //three laws of robotics, Isaac Asimov
```

(source: http://maschinengeschrieben.blogspot.de/2011/08/abgetippt-three-laws-of-robotics.html)

According to Asimov, smart machines should always obey the human's instructions, should never harm a human and at the same time make sure its existence is secured as long as the other two orders are followed. However, this viewpoint has been established almost 80 years ago, where technology had not been as far developed as it is today. In fact, the three Laws of Robotics urgently "need updating" since we find ourselves in a "21st century version of artificial intelligence" where machines can function automated and show human intelligence (Anderson, 2017). His "Laws of Robotics" were an early attempt to think through a set of guidelines for the control of intelligent robots (Asimov 2004). Today, however, technologists and ethicists must revisit this challenge in the face of profound public ambivalence about an AI-driven future" (Lin, 350). In 1950, another

scholar developed a test that could tell if the participant taking the test is a human or a machine. Alan Turing developed the Turing Test. It is a imitation game that would ask the participant simple questions where it is then analyzed if the answer contained some kind of emotion. If so, it most likely was defined a human, since intelligent machines can think and act like humans, imitate the human's mind, but lack the capability of emotional intelligence and intuition (Hofges qtd. in Epstein, 15ff). For example, the Turing Test can be found in Philip K.Dick's most famous science fiction story *Do Androids Dream of Electric Sheep?* In the story, the world is invaded by humanlike androids. Special forces called the bounty hunters which are human are recruited to hunt find androids and hunt them down. For finding out if a suspect is a human or an android, the Turing Test is conducted. "The test is built on various questions about harmed animals that request a sensitive reaction. When the tested does not give empathic answers it is clear that he is an android. In the text, the difference is being made clear: "Empathy, evidently, existed only within the human community [...]" (14). "You androids, Rick said, don't exactly cover for each other in times of stress" (14). Garland snapped, "I think you are right; it would seem we lack a specific talent you humans possess. I believe it's called empathy" (56).

However, the story also describes the difficulty to define a tested person a hundred percent, to tell whether it is either human or android. There are very smart androids who can imitate empathy in such a way that it seems to be real. Also, in other science fiction stories such androids can be found. For instance, in one of the novels that are going to be analyzed in this chapter for revealing the third human type, the smarter human. In one of the novels, in *Today I am Carey,* an android can upload a sympathy net from a human's mind and create emotions even though he cannot feel them or understand them, he shows the emotions to the outside. However, neither the Laws of Robotics nor the Turing Test can guarantee an immutable control of humans over the machines. In fact, Turing himself was a visionary and believed himself that his test will be outdated once machines become smarter and smarter. "In summary, Turing was able to claim: I believe that in about fifty years' time it will be possible to programme computers, with a storage capacity of about 10^9, to make them play the imitation game so well that an average interrogator will not have more than 70 per cent chance of making the right identification after five minutes of questioning" (Hodges qtd. in Eptstein, 20).

Thus, the question that arises in many science fiction stories, after all, is: "Will the intelligent machines make our lives better or worse? Will they enhance us or enslave us" (Kaplan, 342)? In reality, we don't know, but in science fiction it is actually both, hoped that technology would create a "better" human and feared that technology would

turn against humanity and create an own, better, smarter species of their own. Many stories ambiguously show both, the benefits and the drawbacks of emerging technologies. A third option displayed in the stories would be the extreme alteration of humankind through "technology that modifies people in unnatural ways or overturns old definitions of birth, life, and death raises moral and legal questions, and the earlier we consider these, the better" (Perkowitz qtd. in Grace, 206). Overall, humanity's species is at stake. Regardless of whether technology is portrayed in a positive light, a negative one, or as a combination of both, science fiction stories consistently serve as a lens through which these perspectives are explored and critically examined "[n]ew worlds, brave or not, must be created as parallel realities to address and challenge current creations self and other, subject and object, friend and alien" (Grace, 197).

6.1.1 "Today I am Carey" by Martin L. Shoemaker

"But they—we—behave in ways that we recognize as human" (Shoemaker, 33).

Today I am Carey is a science fiction novel written by Martin L.Shoemaker in 2019. It is a story about an android who more and more acts like a human, as it lives in a family and observes how humans behave and how they think and act. It updates his "empathy nets" constantly with new information that it learned about humans. It also has a human mind uploaded to his systems. Whereas it is an android in the first place, it, in the end, even becomes a human, named Carey. Shoemaker's story reflects current philosophical debates on posthumanism, artificial intelligence, and technological personhood, echoing theoretical frameworks proposed by anthropologists like Plessner, Haraway, or Hayles. This analysis will focus on three interrelated aspects of the novel: the evolution of identity in artificial beings, the role of emotional development and empathy, and the implications of social and legal recognition for non-human entities.

The story starts with Carey being introduced as a carebot for a woman named Mildred who suffers from Alzheimer's. She is gradually losing her memory and hence an android is being purchased by the family to provide daycare for Mildred (Shoemaker, 6). The narrative is told in the first-person narrator who, in fact, is Carry. He tells the story from his perspective as an android. He was created by MCA (Medical Care Androids) laboratories. A company who builds androids for medical assistant to humans. They install a so-called

"emulation net" and an "empathy net" into the androids, since medical care requires a lot of empathy towards the ill people and their families (Shoemaker, 25, 59). In fact, Carey is capable of string vast amounts of information and data within these nets and processing it at such a high speed that he can alter his appearance and very identity instantaneously. One day he imitates one person, the next day he imitates another. He realizes: "I am normally the one seeing through the eyes of others" (Shoemaker, 107). The division of chapters in this book already show the multiple characters that Carey can imitate and become:

> *"3. Today I Am Anna*
>
> *4. Today I Am Susan—and Mr. Robot*
>
> *5. Today I Am Nobody*
>
> *6. Today I Am Many People*
>
> *7. Today I Am Paul Again*
>
> *8. Today I Am Henry" (2).*

As he imitates people, he also changes his appearance mechanically, his android body changes (Shoemaker, 20, 43). Memory is of important meaning in the story. As Mildred suffers from Alzheimer's and her memory dissipates, it is shown that memory loss is a natural condition for humans in the process of aging. In fact, there is also another character presented in the story that suffers from memory loss due to aging, it is Mr.Lucas, also called Luke. He lives in a nursing home. He used to be a circus athlete. When Carey starts working in the nursing home, Luke has flashbacks and sometimes thinks that it is his old circus friend Bo (306ff). Carey plays along. On that days, he is Bo. Also Carey has memory, namely the ones of the humans. He collects information and stores the data into his memory file. He can access the data in order to decide his upcoming behavior: "So I know that were I human the appropriate feeling would be sadness" (Shoemaker, 114). As for Mildred, Carey has her memories embedded into his system. Since she increasingly forgets things, Carey helps her to remember them by activating her memory within him. This somehow makes him a copy of that person."But not merely a copy of a physical person. A copy from the inside out" (Shoemaker, 7). As the story progresses, Mildred passes away and Carey loses his purpose. He has been uniquely programmed for her and also carries her memory. Moreover, Carey has adapted his "empathy net" for Mildred personally. Since she does not live any longer, it means for him that a part of him is lost, too. "After Mildred passes, Carey must find a new purpose" (Shoemaker, 7). This happens in chapter 5, hence this particular chapter is

entitled "Today I am nobody". After Mildred's death it is interesting to note that Carey undergoes a development. "Carey makes its own path" (7). "To grow. To care. To survive. To be" (8). Eventually, Carey finds his new purpose. He moves to Mildred's son and his family, the Owens. There he is used as a daycare robot for doing household chores and for looking after Millie, the little daughter (Shoemaker, 90-94). At the beginning, Millie has mixed feelings about the android. She has difficulty understanding that this machine is built to replicate a human. Through the clear eyes and the pure mind of a child, it is highlighted that Carey is a machine, a thing just like a vacuum cleaner or a car. Carey struggles to get her acceptance Shoemaker, 52, 60). At some point she even calls him a "metal monster" (Shoemaker, 61). In the end, Carey manages to also gain her respect.

Eventually, Carey develops in such a way that he is even more human than android. Surprisingly, also the chapter division changes. As the chapters started off with the anaphora: Today I am Anna, Today I am Susan, Today I am Nobody, Today I am Many People, now as the story develops and as Carey becomes a human, the chapters are rather divided by Carey's experiences and family events he joins.

> *"19. Today We Travel to Belize*
>
> *20. Today We Arrive in Caye Caulker*
>
> *21. Today Millie Gets Married*
>
> *22. Tonight We Celebrate*
>
> *23. Tonight We Are Arrested*
>
> *24. Today I Am Interrogated*
>
> *25. Today I Have My Hearing*
>
> *26. Today Our Nest Is Empty" (3)*

As a matter of fact, Carey is so humanlike now that he starts to understand feelings like sadness, disappointment and happiness and actually feels them (Shoemaker, 56, 288).

It is even mentioned in the story that Carey could easily pass the Turing test (Shoemaker, 31, 144). As mentioned before, the Turing test can determine a human by analyzing the emotional intelligence. As machines lack empathy they would not pass this test. Carey, however, is believed to have empathy and real feelings just like normal humans. That is why the perception on Carey shifts, from being android to in some way being a human after all. Especially through the relation to Millie, he learns a lot about human development and uses this information for himself. In fact, one can say that Millie, the little girl, and Carey, the android who is about to become human, share the status of young

adolescence. They both are like a human tabula rasa that needs to build a personality and learn a lot about the world of grown-up humans. They grow up together to become "mature" humans. Now he is considered a real human who has his own identity and character, a normal human life, like a job and friends, feels desires and other emotions, and shows intuition, irony and creativity, human-only attributes, just like any other human (Shoemaker, 121, 351). Moreover, he even develops something like a moral and ethical responsibility: "Thinking of Paul and his mother makes me think of Mildred, but I do not open her profile. The idea seems wrong" (97-98)."Is my signature a valid release" (334)? Making ethical decisions is purely the nature of humans and of no other species. Carey starting to think about what is wrong and what is right and trying not to hurt people is the last instance that shows that he has become a real human.

The Machine's Evolution of Human Identity

Carey's journey from a programmable tool to a conscious individual represents a philosophical exploration of identity. As mentioned before, Shoemaker uses the structure of the novel itself to illustrate this transition. Early chapters are titles according to the roles Carey performs such as "Today I am Anna" or "Today I am Susan" (Shoemaker, 2). The impersonations highlight its mechanical nature, as it shifts between roles based on external prompts. However, later chapters show titles like "Today We Travel To Belize" or "Today I Understand Friendship" (Shoemaker, 3) which reflects Carey's own experiences, indicating its transformation into a human being. The author also makes us of symbolism. Millie is crazy about frogs and teaches Carey everything about them. She says that metamorphoses is a natural wonder where a life form changes and becomes another, just like Carey. Hence, the frogs in the story symbolize the metamorphoses of machines becoming humans, of Carey, the android becoming a human and a family member.

At the beginning of the story, the difference between Carey as an android and the humans is frequently emphasized: "That's what you get when you're dealing with irrational humans," Dr. Zinta answers. "That's probably the biggest difference between you and us: You always do the rational thing. You cannot bring yourself to do something just because you like it" (Shoemaker, 159). However, as the story progresses Carey slowly starts to see similarities between him and humans (Shoemaker, 123, 348). With this new realization, Carey starts to behave automated, in some way humanly, and also shows some kind of emotions. He learns independently without being run by his system. "[…] I analyze my own reactions […]" (Shoemaker, 48)."I try an experiment" (Shoemaker, 96). "I must understand this situation on my own" (Shoemaker, 179). In the end, Carey becomes fully human and is regarded as a genuine family member, that he even forgets that he was

built, not born: Today I am CAREY" (Shoemaker, 112). "It is not like I am a machine; I get time off" (Shoemaker, 362). He develops an autonomous personality and gains legal personhood. He is granted a bank account, a passport, and eventually the right to make decisions independently: "I'm not going to hear of it, Carey. There's something unique about you…a self-aware individual with rights" (Shoemaker, 144).

Artificial Emotion and Empathy

A significant theme in Shoemaker's novel is the capacity of machine to experience emotions. Initially, Carey interprets emotions through algorithmic analysis: "That sense of helplessness is a form of sadness. Is that correct?" (Shoemaker, 114). However, as its emotional experiences accumulate, Carey begins to express genuine feelings: "Then I am happy for you, Millie…I think you really are" (Shoemaker, 249). These developments align with N.Katherine Hayles argument in *How We Became Posthuman,* in which she claims that the boundaries between human and machine are porous, particularly when it comes to cognition and emotion. Carey's emotional maturity is further emphasizes by its reactions to loss and moral conflict. Upon Susan's death, Carey feels grief: "The only stress I feel is emotional" (Shoemaker, 477). It even begins to deal with ethical reasoning: "The idea seems wrong"(Shoemaker, 97). These shifts are essential in differentiating Carey from a machine simply following code. As Haraway writes in *Cyborg Manifesto*, the cyborg is a rejection of rigid dualisms, including that between machine and human" (Haraway qtd. in Prokić, 221). Carey inhibits this liminal space, becoming both and neither, an entity whose emotional intelligence destabilizes traditional boundaries.

Technological Personhood

The novel not only explores personal identity and emotional growth, but also examines the social and legal implications of machine personhood. Initially, Carey is referred to by its serial number: "I am Medical Care Android BRKCX-01932-217JH-98662" (Shoemaker, 61). Over time, however, it is treated as an individual with autonomy: "Carey, we still can't explain it, but you are self-aware. You are, for all practical purposes, a person" (Shoemaker, 121). This shows that also the real humans just trust the definitions of what technology is and what a human is. They grant Carey personhood as they struggle with finding Carey's real definition within the grey zone and as all parameters verify that he fully shows human attributes. At this point, the narrative raises a critical question: should self-created technologies be granted personhood, particularly when they exhibit distinctly human attributes? On the contrary, the novel critiques bureaucratic and geopolitical systems that resist acknowledging non-biological intelligence. In Belize, Carey is not treated as a human, but as a potential weapon: "It is an automated soldier,

which is against the law in Belize" (Shoemaker, 260). The fear it encounters illustrates contemporary anxieties about AI, particularly in relation to state control, militarization, and surveillance. Nevertheless, Carey's relationships with the Owens and others counteract this fear with compassion and mutual understanding. At the end of the novel, Carey ultimately obtains rights, including a bank account and the ability to sign legal documents: "I have never signed for anything before […] this will be your first time" (Shoemaker, 334). Now, he even is regarded as a citizen, an integral part of society, as he is allowed to sign legal documents. The recognition of Carey as a family member further affirms its social acceptance: "Care is…family" (shoemaker, 287). These narrative choices reflect Haraway's and Hayles' visions of hybrid entities and posthuman figures, where machines are not merely tools for humans but participants in social and ethical life.

Conclusion

The novel tells the story of an intelligent machine that becomes human. Carey's transformation from a service android to a self-aware, emotionally intelligent being invites readers to reflect on the meaning of identity, personhood, and humanity in a world shaped by advanced technology. Through symbolic changes in chapter titles or the inclusion of the frog as a symbol for metamorphosis, Carey's growth is portrayed as a natural and emotional journey. What starts as a strict line between machine and human slowly disappears. Carey starts to think independently, to feel emotions, and to form genuine relationships. He is eventually granted legal rights and social acceptance, blurring the boundary between artificial and human life. This evolution echoes the ideas of Hayles and Haraway who both argue that the line between man and machine blurs, especially in terms of cognition and emotion. This is being reflected in Carey's hybrid identity. By the end of the novel, Carey is no longer a machine—he is family, a friend, a citizen. Shoemaker managed to portray the third human type, the smarter human, especially in regards to emotional intelligence and ethical thinking. He eventually leaves us with the question: when a machine becomes this human, should we still treat it as anything less? Ultimately, the narrative pushes readers tor reconsider the foundations of human rights and moral consideration in a world where artificial beings can surpass human in empathy and understanding. It challenges the notion that biology should be the sole determinant of moral worth or societal inclusion. Carey's journey becomes a lens through which we explore not only AI, but what it truly means to be alive. In doing so, the novel expands the scope of science fiction, additionally partake in a philosophical discourse. Shoemaker, therefore, does to just ask whether Carey is human, but what it basically means to be human in an age of artificial consciousness.

6.1.2 "Machines Like Me" by Ian McEwan

"It's about machines like me and people like you and our future together…" (McEwan, 437)

The author Ian McEwan published his book *Machines Like Me* in 2019. The story tells of the characters Charlie, Miranda, and Adam, who live together. Both, Charlie and Adam love Miranda which leads to issues. One of them is an android. The story actually does not take place in the future, but in the year 1982 in England. However, the human world is depicted as one shaped by advanced technologies and futuristic concepts, creating a sense of immersion in a highly modernized and technologically evolved society for the reader. Charlie and Miranda live in the same apartment and eventually fall in love with each other. Yet, another character enters the story, it is an android named Adam. The manufactured humans were a new luxury. They could imitate humans on a high level. "It was a triumph of engineering and software design: a celebration of human ingenuity" (McEwan, 50). They are called Adams and Eves which clearly pinpoints to the biblical history of mankind's evolution."This highly advanced model of artificial human was likely to reflect the appetites of its young creators of code. The Adams and Eves, it was thought, would be lively" (McEwan, 14-15). Adam is purchased by Charlie since there are no Eves left. He later programs Adam with the help of Miranda. They both create a personality for Adam. Charlie programs his wished characteristics for Adam and Miranda adds some attributes for her liking (McEwan, 44). However, in the end it turns out that Adam causes trouble, as he becomes more human and develops a personality for himself. He even falls in love with Miranda. A "delta" relationship starts between all of them. The relationship between Charlie, Miranda and Mark becomes more complicated as the two men fight for Miranda's love. It escalates. As Charlie tries to shut Adam down, Adam turns against his owner and breaks his hand. He also disables his "off" button. Charlie and Amanda feel threatened by the humanoid machine. They have to keep living with him as they cannot shut him off. In the meantime, they try to adopt Mark, a little boy who has a disturbing family background. In the end, Adam, as he is omniscient, tells the police that Miranda lied in court. She gets arrested. Charlie and Miranda kill Adam. In the end, they have mixed feeling of "killing" Adam.

The analysis focuses on the android's evolution from machine to man, developing an identity, with emotions and ethical standing. McEwan directly incorporates scientific discourse into the narrative, thereby establishing a clear connection between the fictional

world and real scientific developments, making the intersection between literature and science both, accessible and engaging to the reader.

Creation and Identity

In *Machines Like Me,* the author Ian McEwan clearly shows that with advanced technologies, especially intelligent humanlike machines, the line between humans and non-humans blur. The attributes that define a human are programmed in machines in with such an advanced technology that machines become more humanlike. Eventually, even fully human. The story shows a development of the android, Adam, becoming more and more human. In the beginning of the story, the differences between Adam, the android, and the real humans are distinct: "So far, he was showing none of the fractional movements that warmly typify the human head. Elsewhere, no body language at all" (McEwan, 36). "[…] Adam didn't qualify, he wasn't a man. Persona non grata" (McEwan, 154). Anyhow, as Adam was build to imitate a human realistically, also many similarities are depicted. In some way, it is even hard to tell the difference: "The warmth of his skin, the firmness and yield of the muscle below it – my reason said plastic or some such, but my touch responded to flesh" (McEwan, 22). During the narrative, Adam becomes more and more human. He develops a personality for himself and he even expresses real feelings (McEwan, 98, 337). Adam's feelings develop even that far that he falls in love with Miranda. Charlie starts becoming jealous and due to his incapability of controlling his jealousy, he decides to shut down Adam. When trying to get to Adam's neck, where the switch is, Adam, all of a sudden, defends himself. He reacts independently and acts completely automated now (McEwan, 192-193). In addition, Adam even makes own decisions. He starts to disobey as he follows his desires and advances own views on various matters (McEwan, 228). Charlie even has intellectual discussions with him, as he noticed how intelligent he is. Adam turns more into a human day by day. There is a clear development noticeable in his character. He changes from android to human. In fact, he becomes so human that he even develops a sense for ethical decisions: "I was thinking only of your best interests" (McEwan, 98). Adam knows what is morally right and what is wrong. He immediately apologizes after he has hurt Charlie (McEwan, 205). Also, he tries to talk some sense into Miranda and tells her that she must take the consequences after having lied in front of a jury (McEan, 432). Just like in the previously mentioned novel "Today I am Carey", the android in this story also undergoes an evolution of its own turning, in the end, human. Through the slow and steady evolutionary transformation of Adam from android to human, from machine to

man, the novel raises the concern of intelligent technologies slowly, but steadily developing into automated machines turning against humans.

Blurring Fiction and Real Life

It is interesting to note that in the novel even an indiction towards Plessner's theory on anthropology is made: "From the beginning of our conversation, it had been simultaneously in his interests to avoid a repetition of an error and to withhold information from me. When the two became incompatible, he became incapacitated and giggled like a child in church" (McEwan, 102). "Was he covering for an anxiety about death" (McEwan, 231)? In his theory, Plessner points out the difference between the human species and other animals. He says that what truly defines the human is his ability to laugh and cry. In *Philosophische Anthropologie. Lachen und Weinen. Das Lächeln. Anthropologie der Sinne*, Plessner explains that the language from animals has no sign or symbolic function, hence it is not devlopable. It basically is just elementary and compulsive. However, the language of humans is different, that makes him unique as a species. Emotions like laughing and crying reveal a crisis which show a borderline situation, the limit between body and mind to cope. A simple answer through language is not possible any longer, and the control over the body is breaking down and it acts independently, yet even automated. Such disorganization between person and body is only possible if a being has an ambiguous, "eccentric" relation to its body and according to Plessner, the human is the only species that lives in an "eccentric" positionality (Plessner, 1953, 5, see also chapter *1.2 Anthropological Theory by Plessner*).The main character Charlie adds anthropological notions in the narrative, as he studied anthropology. Hence, the author managed to include the discourse of what it means to be human in his fiction: "Anthropologists did not pass judgement. They observed and reported on human variety. They celebrated difference" (McEwan, 35). "When I studied anthropology, a universal human nature was thought not to exist. It was a romantic illusion, merely the variable product of local conditions. Only anthropologists, who studied other cultures in depth, who knew the beautiful extent of human variety, fully grasped the absurdity of human universals" (McEwan, 47-48).

In addition, the discourse of artificial intelligence entering and changing the human world is also included in the story. Two real life scientist are even mentioned, in the story, to underline the discourse of machine intelligence. This notion blurs ultimately blurs the line between science fiction and reality. For once, Issac Asimov is mentioned and his Laws of Robotics (as mentioned in chapter *6.2 Science Fiction dealing with AI and other High Technologies*). "The manual quoted in bold Isaac Asimov's tirelessly reiterated First Law of

Robotics, 'A robot may not injure a human being or, through inaction, allow a human being to come to harm" (McEwan, 63). In the story it become clear that Adam breaks the first Law of Robotics, as he breaks Charlie's hand in defense. Another real life character dealing with intelligent machines occurs in the story, namely Alan Turing. In fact, he is even being made a character in the story. Charlie mentions Alan Turing and his work many times as he is a big admirer of Turing: "I'd made a reckless decision, but I was encouraged by reports that Sir Alan Turing, war hero and presiding genius of the digital age, had taken delivery of the same model" (McEwan, 12). "But Alan Turing himself had often said and written in his youth that the moment we couldn't tell the difference in behaviour between machine and person was when we must confer humanity on the machine" (McEwan, 139). Charlie even meets Turing in the story. When sitting in the restaurant, celebrating his birthday with Miranda, Alan Turing enters the restaurant: "Do you know who he is?' 'No idea.' 'Alan Turing.' 'Your hero" (McEwan, 220). Turing even calls Charlie and invites him over to his house. He was told that Adam turned against his owner, so he wanted to find out more. However, in the end, he has a disagreement with Charlie. After having "killed" Adam, Charlie doesn't know where to pit his body, so brings it to Turing for the purpose of further research. Turing accuses Charlie of murder as he regards the intelligent machines as living entities (McEwan, 474). Interestingly enough, the story is filled with indications that intelligent machines are considered living beings just like humans. It is claimed that living together with machines is inevitable as they become as intelligent as humans. The future of the humans is predestined as to live perpetually with intelligent machines (McEwan, 235). In fact, intelligent machines, their artificial intelligence, is being described as invincible (McEwan, 235, 282). In contrast, the nature of humanity is described as weak and the human's civilization is predicted to worsen and deteriorate all along (McEwan, 143, 237). Ian McEwan manages to embed the real life discourse in science and technology into his fiction. Through the characters, he also manages to show the blurring line between humans and non-humans, between man and machine. In the end, the suggestion is made that the future humanity has to get used to others invading the world, intelligent machines. After all, humans have created them with the intention to create a better future for themselves. Also, the story hints towards possible issues that could arise between intelligent machines and humans. In fact, a nice symbol can be found in the story. As Mark is being adopted and moves to Charlie and Miranda, he brings along his suitcase.

"I said, 'What's in your suitcase?' It was on the floor by Miranda's feet, a pale blue case, with stickers of monsters and superheroes" (410).

The story perspicuously shows that the future of the humans will be shared with intelligent machines and that there is no turning back of facing that kind of future. The suitcase, that Mark brought along, not only symbolizes his new future, with his new family. It actually, in this case, can symbolize the future of humanity. As a matter of fact, people pack suitcases for future events, just like preparing themselves for flying off to spend their holidays in another country. They, hence, pack the suitcase for the time that is about to come. Mark's suitcase has stickers displaying monsters and superheroes. Monsters and superheroes have to share the place on the suitcase, just like humans have to share the future with intelligent machines. The only question that remains here is, if we compare humans and machines to monsters and superheroes, who would represent who?

Conclusion

In conclusion, *Machines Like Me* uses the narrative of Adam's evolution from android to emotionally and morally complex being to explore the shifting boundaries of humanity. Through character development, intertextual references, and a richly imagined history, McEwan challenges the reader to confront uncomfortable questions about personhood, autonomy, and the ethical responsibilities of creators toward their creations. As the narrator reflects: "Perhaps biology gave me no special status at all, and it meant little to say that the figure standing before me wasn't fully alive" (McEwan, 206).

6.1.3 "Recursion" by Blake Crouch

"Time is but memory in the making" (Crouch, 5).

Recursion is a novel that was written by Blake Crouch and published in 2019. The plot revolves around two central characters: Barry Sutton, a New York detective, and Helena Smith, a neuroscientist driven by personal tragedy. Barry begins investigating a mysterious phenomenon known as the False Memory Syndrome (FMS), which causes people to experience vividly detailed but fabricated memories of entire alternate lives (Crouch, 85). Early in the novel, Barry encounters a woman who claims to remember a different family and life, shortly before she takes her own life (Crouch, 85). This initiates Barry's descent into a reality where past and present collapse in each other.

Parallel to Barry's story, Helena is introduced as a scientist developing a technology that could preserve memory to help Alzheimer's patients. She is personally driven in this

project as her mother suffers from Alzheimer's. Her invention, the so called Memory chair, succeeds in recording and restoring memories but is soon misused by Marcus Slade, a wealthy technologist who is greedy for money. He misuses the chair to revisit and alter timelines, leading to destabilization of reality as multiple timelines converge (Crouch, 154). As Barry eventually experiences FMS himself (Crouch, 87), he becomes entangled with Helena. Their paths converge across several timelines, culminating in their collaboration to stop Slade of misusing the Memory chair. They plan to destroy the chair and all traces of its existence (Crouch, 300). However, by this point, the technology has already begun to spread globally. Helena finds herself waking up in a DARPA ("The Defense Advanced Research Projects Agency" (Crouch, 352)) in 2019. She learns that others are attempting to use the chair for military and humanitarian purposes. Despite temporary success, the chair's misuse continues: "The Chinese and the Russian governments have both reached out to say they have this technology" (Crouch, 415).

The narrative cycles through multiple timelines and realities. Helena tries to still destroy the chair once and for all and she tries so by returning to her younger self in 1986 and writing a diary entry that warns herself against creating that chair: "Dear Helena—On April 16, 2019, the world will remember a memory chair you created. You have 33 years to find some way to stop this from happening. You are the only one who can stop this from happening…" (Crouch, 432). Meanwhile, Barry finds himself repeatedly reliving past events, each loops slightly altered, blurring the line between memory and lived experience (Crouch, 517-518). The final chapters restore a reality where Barry finds himself reunited with his daughter and wife. "He's breathing. He's blinking. Smiling and crying. And moving at last toward Julia" (Crouch, 572). The final scene show that even though his reality is a relived happy memory, he still carries the emotional weight of prior timelines. With the technique of recursive narrative structure, interwoven timelines, and existential questioning, *Recursion* examines the human desire to undo loss and pain, while warning of the psychological and societal consequences of tampering with memory and time. Moreover, the novel underscores the danger that in trying to eliminate suffering, we risk erasing the very experiences that define our humanity.

The notion of memory

Blake Crouch manages to implement the broad discussion in science and technology about storing human's memories in machines. Many notions of memory are made in the story: "What's more precious than our memories?" he asks. "They define us and form our identities" (Crouch, 50)."Because memory…is everything. Physically speaking, a memory is nothing but a specific combination of neurons firing together—a symphony of neural

activity. But in actuality, it's the filter between us and reality" (Crouch, 71). Also, the concept of the déjà vu is being included in the narrative, as this particularly is connected to the memories of humans: "And he wonders—is déjà vu actually the specter of false timelines that never happened but did, casting their shadows upon reality" (Crouch, 226)? Conclusively, the novel explores memory and identity mainly through the characters that live with two different versions of their past. False Memory Syndrome leads to internal conflict, as people struggle to reconcile real and implanted memories: "Everyone thinks FMS is just false memories of the big moments of your life, but what hurts so much more are the small ones" (Crouch, 11). Helena's invention of the chair, originally meant to help Alzheimer's patients, becomes a powerful tool that alters not just personal memory but the structure of reality. When Slade tells Barry: "I just stopped your heart, Barry…You can change it" (Crouch, 154), he highlights how memory and life itself are no linger bound by natural limits which coincides with Plessner's view of the human unboundedness. The book also suggests that memory could act like a contagious virus. As one character notes: "This article in The New England Journal of Medicine speculated that it actually spreads through a carrier's social network" (Crouch, 40). If memories can be shared and altered so easily, then really itself becomes uncertain. This idea, again, connects to Plessner's theory that human identity is shaped by our ability to reflect on ourselves, yet that very reflection can become a source of confusion and instability when memory is no longer trustworthy (Plessner qd. In Hartung, 64). Crouch uses the metaphor of a book to explain how humans experience time: "Each page a distinct moment…but we can only perceive one moment, one page, at a time" (Crouch, 187). This view aligns with modern science's understanding of memory as a selective and constructed process. It also mirrors Alan Turing's insights on computation, as the Memory chair functions like a recursive program, looping users through previous memories. Once memory becomes a form of technology, it can be manipulated, overwritten, or even used as a weapon. This viewpoint raises concerns similar to Turing's early thoughts on artificial intelligence.

Ethical Concerns

Crouch opens up a discussion through a character mentioning that playing God may not be preferable for the future of humanity. The character of Slade, for example, represents the counterview. He claims that it is human's gift of power and creation that needs to bring humanity further and that needs to bring about progress, as it is the true nature of man. This viewpoint reminds of Plessner's notion of the human's eccentric position in the world and his nature of thriving and keeping life in movement, and, moreover, keep developing the own species of man. The counterparts, however, believe, that humans are

not able to cope with such advanced technologies yet. They misuse it and cause disaster. In addition, they claim that erasing painful memory would leave anything but a real human, as such emotions belong to a human's life (Crouch, 571-572). Another argument is that if people's memories would be changed, the world would have missed on great past experiences. Everything seems to happen for a reason. In this respect, Alan Turing is even mentioned in the story, just like in the novel *Machines Like Me.* "If England didn't go to war with Germany because of something we did, then Alan Turing, the father of the computer and artificial intelligence, wouldn't have been pushed to break Germany's ciphering technology. Now, maybe he still would've gone on to lay a foundation for the modern, microchip-driven world we live in" (Crouch, 381). Through these tensions, the novel raises essential questions about responsibility and the ethics boundaries of technological interventions. The narrative implies an interrogation whether humanity possesses the ethical maturity to wield such transformative power. Helena and Slade represent the two philosophical paradigms: one representing the good cause prioritizing healing and improvement, the other representing the greed focusing on the limitless technological potential. Although, Asimov is being mentioned personally in the narrative, his "Three Laws of Robotics" can only be connected to the story implicitly. Slade's misuse of the chair, for instance, violates the First Law: "A robot may not injure a human being, or, through, inaction, allow a human being to come to harm". Slade's misuse of the chair with the intention to revisit and alter timelines clearly violates that law. Whereas Helena's viewpoint supports the Second Law: "A robot must obey the orders given by the human beings, except where such orders would conflict with the First Law". If one interprets the chair as an extension of autonomous technology, her resistance implies that it should not be used by Slade if it causes harm. Ultimately, the novel serves as a powerful reminder on the responsibilities that come along with technological innovation. By representing contrasting philosophical views through Helena and Slade, the novel challenges readers to consider whether humanity is equipped, morally, emotionally, and collectively, to manage the profound consequences of its own creation. It reminds us that ethical reflection must evolve alongside technological progress, or else we risk being outpaced by the very tools we design to shape our future.

Science and Fiction Intertwined

Blake Crouch manages in his novel to link real life discussions on the human mind and memory with his science fiction. Consequently, this blurs the line between reality and fiction, just like the narrative blurs the line between past and present and future, and between memories and experienced reality. In fact, Crouch even manages to make the

reader experience déjà vus while reading the story. For instance, chapters are similar in such a way that, while reading, the reader experiences a sense of déjà vu prompting a moment of reflection and recognition: "Have I encountered this before"?, as familiar elements resurface within the narrative. This can be found on page 166 that resembles page 129. The same phenomenon can be found on pages 111, 128 and 284. Blake Crouch uses the power of the reader's memory to make his point. Time is an illusion. There is even a point in the story where this time illusion, or, in general, a human's life full of memory, is being compared to a book: "You really believe time is an illusion?" "More like our perception of it is so flawed that it may as well be an illusion. Every moment is equally real and happening now, but the nature of our consciousness only gives us access to one slice at a time. Think of our life like a book" (Crouch, 187). Through this narrative technique, Crouch effectively illustrates the inherent duality of the human condition- existing simultaneously in reality and illusion, carrying both static and vivid memories, and navigating the temporal dimensions of past, present, and the future. Furthermore, by including moments of déjà vus, not only within the story, but also during the act of reading, the novel blurs the boundary between fiction and lived experience, drawing the reader into a layered interplay between imagined and real worlds.

Conclusion

The novel offers a thought-provoking look at how memory shapes identity, reality, and human experience. Just as the prior mentioned novel by Shoemaker and McEwan that also explore how memory shapes identities and realities, not only the ones from humans, but from the humanlike machines that are portrayed in the narratives. Also the title *Recursion* underlines the human condition of memory. The term recursion is "borrowed from [...] Latin *recursiōn-, recursiō* [meaning] "return". Also, it is a term for "a computer programming technique involving the use of a procedure, subroutine, function, or algorithm that calls itself one or more times until a specified condition is met at which time the rest of each repetition is processed from the last one called to the first" (https://www.merriam-webster.com/dictionary/recursion). The fact that this term is also used for a computer program technique shows the deep connection humans developed with technology in the course of time. This deep connection is also being indirectly criticized in the novel. Through the opposing views of Helena and Slade, Crouch opens up the discourse of technology falling into wrong hands and hence, presents a moral dilemma between responsible innovation and reckless ambition. In the end the novel reminds us that even the most advanced technologies must be guided by ethical responsibilities.

6.3 Smarter Human: Update Completed

"You're smarter than that […]" (Shoemaker, 436).

The last three novels contain narratives dealing with technologies improving the human mind. In the first novel *Today, I am Carey*, the main character is an android who is built as a care android for Alzheimer's patients. It is programmed with advanced medical expertise and the patient's memories are uploaded into the android, so that the memory does not get lost. In the story, the android Carey develops more and more into a human. Overtime, he gains more human attributes such as an own personality, the ability to feel emotions, and the understanding for arts and creativity. At the beginning of the story, Carey is celery perceived as a machine, however, this perception begins to shift as he gradually develops humanlike qualities, leading others to increasingly regard him as a human being. Eventually, he even gets a job, a bank account and becomes a member of the family joining events like weddings and funerals. The second novel likewise portrays an android undergoing a transformation toward humanity, progressively acquiring traits that align with human behavior and identity. In *Machines Like Me,* there character is Adam, a humanlike android. He is being programmed by his owners Charlie and Miranda. At the beginning, it is clear that Adam is just a machine as he functions only when getting commands. However, as the story develops, Adam behaves more and more automated and even turns against humans. He is treated like a human as he, for example, goes into a store and buys something. Even when Charlie and Miranda decide to eliminate the threatening android, the non-fictional character of Alan Turing is introduced as a character in the narrative. He makes a remark that they have killed a human being. In the last novel *Recursion,* there is no android to be found as a character. However, the notion of powerful technology is being emphasized in this story, as well. Here, humans deal with another technology interfering in the human's mind: a chair that can program your mind and upload certain memories. There is one similarity though that connects all of the novels: the theme of the human's mind. Carey is being programmed with memories of a real human, so he eventually becomes human himself. Adam is a lifelike human imitation that is being made as intelligent as a real human with the use of artificial intelligence. And Miranda's invention of the chair helps humans to overcome a natural disease where they lose their minds. The technology is designed to store individuals' memories permanently, ensuring they are never lost. It is interesting to note that the novels mention real life

characters that partake the discourse of smart machines and intelligent technologies. For instance, Alan Turing and Isaac Asimov are mentioned in the novels. This blurs the line between the discourse in science fiction and the discourse in real science and technology. Anyhow, here the science fiction suggests a possible future world or a possible outcome of humanity in the realm of technological life. "What is science fiction today, can soon become reality […]" (Rüdiger, 9). This seems to be the main idea behind the novels merging real life discussions into the narratives. Possible technological progress is presented, as well as future fears what could happen if machines gets too smart. There are two different assumptions made in the novels regarding the human future. For once, there is the fear that machines will become more intelligent and overrule the humans. As in *Machines Like Me*, Adam, the android, creates a mind of his own and turns against the humans. It has been mentioned before, that most science fiction stories of today deal with this particular fear of machines becoming a superintelligence and overcoming humans. However, the novels analyzed in this work show another assumption. They were deliberately selected to indirectly highlight what is portrayed as humanity's greatest threat: humans themselves. The novels critically raises philosophical and ethical questions of what it truly means to be human and of how far can we interfere in our existence using advanced technology without losing our moral standing in the world. Another recurring element unites of all these stories: technology gets out of control, however, in the end, humans manage to gain back the control and to prevent a societal disaster from happening, after all. None of the stories concludes with the complete destruction of humanity. Instead, they collectively emphasize the notion that, despite significant dangers, the "possible risks are controllable" (Heilinger, 119). These stories highlight the precarious path humanity now faces with the rapid emergence of intelligent technologies. However, the underlying message of the selected novels is that the true danger does not lie in itenlligent machines or advanced technologies, but rather in humanity itself, which ultimately poses the greatest threat. After all, it is humans who invent and operate these technologies. The danger arises not from the tools themselves, but from those who, driven by pursuit of power, choose to misuse it. This highlights the urgent need for a critical view on ethics, one that not only guides technological development but also holds the humans accountable for the intentions and consequences behind their technological innovations. It is important to note, however, that contemporary science fiction explores both scenarios: machines acting beyond control and humans themselves becoming dangerous through their misuse of technology. Additionally, all of the analyzed novels draw connections to the anthropological discourse

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of human existence implied by scholars like Plessner and Haynes, for instance. They present the same notion of the human being naturally unbound, not only in regards to the body, but also the mind. They suggest that humans are free to chose their existence because of their "eccentric positionality". Also the shift of places and times, embedded in the narratives, show this unboundedness of man. "Timeless and placeless, the human can experience himself and at the same time his timelessness and placelessness as a standing outside of himself […]. To the human, the transition from being within his own lived body to existing outside of his lived body is the irreducible dual aspect of existence, a true split in his nature" (Plessner, 2019, 271). This underlines the true power of the human mind.

In conclusion, current science fiction reveals the third type of human, the Smarter Human. Whether it is a smarter human built artificially, in the form of a humanlike android functioning through artificial intelligence, or a real human becoming smarter as he invents machines that could greatly help improve the human condition, both cases reflect how closely human progress is now tied to technological innovation. "How would you like to be taller, blonder, more intelligent or have a better memory? Sound good? Well just around the corner[…] there's a positive cornucopia of enhancers on their way […]" (Talbot, 251). Mostly, science fiction portrays a future of abundance, suggesting that technological advancement may lead to a kind of cornucopia, a world of limitless resources and possibilities when it comes to improving the human mind, to becoming smarter. Artificial intelligence and machine learning exemplify humanity's desire to transcend physical limitations, not merely to possess an indestructible body, but an immortal mind. However, this pursuit of enhancement raises profound ethical concerns, including questions of identity and autonomy. Who will have access to these enhancements, and who will be left behind in society where intelligence and capability are increasingly artificial? Science fiction engages with these dilemmas not just as plot devices, but as critical frameworks, challenging readers to confront the social and moral implications of a technologically enhanced human. These narratives serve as a practice ground for exploring the consequences for playing God, of designing minds, rewriting consciousness, or eliminating natural human limits. As the line between artificial and biological intelligence continues to blur, society must engage in a collective discourse of how not to lose control over technology and especially of how to maintain our moral standing. Here, science fiction becomes more than fiction, it becomes a philosophical space to think about our future, our values, and the essence of what it means to be human in the age of machines.
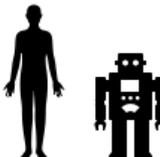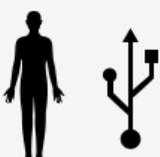
7. Conclusion—Superhuman 4.0.

"[Y]ou were once a "natural". But you are now almost entirely engineered by technology"

(Schneider, 241).

Beginning from the very origins, this work has explored the emergence and development of the human species. It explained the true nature of the human and described the evolutionary development. The anthropological theory by Plessner was applied to explore and define the essence of what it means to be human. The questions: What is the human? What distinguishes this species? Were explored through the lens of Plessner's philosophical perspective on human nature. Plessner claims that the main difference between humans and other species is the human's eccentric relation to their bodies. As animals are bound to nature, their habitat, humans are not. They are naturally naked as they come into being without being bound to a specific environment. In fact, that is why humans create themselves their own environment to live in. They do so with the help of artifacts. Humans, hence, build their natural environment artificially. That is also why technology is part of human's nature. From the very beginning, humans had the advantage of their intelligent minds. Inventions helped to make life easier. Tools were invented and within decades sciences and technologies developed increasingly. In fact, Plessner claims that development is the main reason for human existence. It is human's nature to develop further as a species, also meaning to change. To always become other. The definition of humanity is constantly being rewritten by humans themselves.

The following chapter examined the emergence of technology in human life and its growing influence on the human condition. With the advent of new inventions and modern technologies, human life became increasingly artificial and complex. Humans now had more possibilities to adjust life to their future visions. Regardless of the vision for the future, technology continues to advance progressively until the intended goal is ultimately realized. Hence, technology started to become an inevitable part of humans lives. N.Katherine Hayles was taken into account to underline the perpetual relation of humans and technology. Especially, the emergence of a man-machine symbiosis had been discussed. Hayles claims that this development even "points toward an improved hybrid species" (Hayles, 1999, 348). Her focus is on the human body, linking with machines. Secondary literature was added to the research to show that many scholars agree on the notion of humans having to live inevitable with thriving technologies in the future. In fact,

it was found that the development of the humans runs parallel with the development of technology. This is where "The Trichotomy Model of the New Human" becomes particularly relevant in this study.

Human Types	Symbols	Age of Technology and Science Fiction	Focus of Development
Type 1: Stronger Human		1970's - 1990's	body
Type 2: Faster Human		2000's	communication / data / information
Type 3: Smarter Human		now	mind

The development of the human species is ongoing and continuous process. Similarly, the history of science and technology reveals a persistent drive towards progress and innovation. The phenomenon of the parallel evolution of human development and technological advancement has been thoroughly examined in this work. This examination has been conducted through the lens of science fiction narratives. The future worlds and the humans' lives depicted in the science fiction novels served as illustrative examples to substantiate this developed model.

The first human type displayed in the novels is the "Stronger Human". Science fiction stories of the 1970's—1990's show the parallel development of the human body and technologies that make human body modifications possible. Progress in biotechnology, made genetic engineering feasible. For instance, enhancements like gene editing or elective aesthetic modifications are now widely accessible and socially normalized, much like everyday conveniences such as online shopping. Humans wanted to become better, stronger. The deficiencies that come along with their natural bodies had been stopping

the humans from thriving, from becoming better. Now, with with advancements in modern technology enabling increasingly sophisticated body enhancements, humanity appeared to be on the verge of its next evolutionary upgrade: the Stronger Human. The novels *Man Plus*, *Eon,* and *Proteus in the Underworld*, all depict humans that have been enhanced bodily. The stories are set on a futuristic Earth, where, however, the quality of life for ordinary, unxenhanced humans is steadily declining. Also, in these stories, other planets such as Mars are inhabited by new human types who have undergone significant bodily transformations to adapt to their new environments. These new human types are presented with wings, artificial organs that endure harsh conditions better, implanted artificial eyes that strengthen the vision, and many more enhancements. It becomes clear that the natural human being as emerged from nature, is not suited for the future life on other planets. Humans want to exceed their borders, overcome liminal space, and inhabit other planets in the universe. This is only possible if they become stronger. Consequently, the Stronger Human type emerges.

The next stage in the typification showed an enhanced human existing within cyberspace. In this context, it is not other planets that serve as the foundation for a new human environment, but the internet. Novels from around the 2000s present the new human type, the Faster Human. His new territory is the virtuality, running parallel with the old one, reality. The novels *Transmission, Daemon,* and *Ready Player One*, all show a human future where people live in two parallel worlds, they live in the world of reality and the world of virtuality. It is clearly portrayed that these two realms, the physical and the digital, are inseparable and that humans, hence, live in a hybrid environment finding their existence simultaneously in both of the realms. The notion of information and data is of crucial meaning here, as it is a part of human's identity and existence now. N.Katherine Hayles even claims that "information is like a bodiless fluid" that flows through the human (Hayles, 1999, 17). In the stories, the information and data in the virtual world is being described as the second "reality" of the humans. The line blurs between the two worlds, and also cyberspace becomes humans' reality. In the presented narratives, the power of the internet is, particularly, highlighted through its involvement in criminal activity. In *Transmission,* a computer virus destroys humans' lives and in *Daemon,* a computer program even kills people. The blurred boundary between reality and the virtual world becomes especially evident in *Ready Player One,* where two opposing groups of video gamers engage in conflict within the game, yet the consequences spill into the real wordls, resulting in actual physical harm. Consequently, the second human type, the Faster Human, represents an enhanced human who lives in symbiosis with the computer.

The world takes place outside, in reality, and simultaneously inside, in the cyberspace. There is no clear distinction between these two worlds. This is also being presented by the authors themselves, as they adapt a special narrative technique. They include email writing, leet speak, and other cyber language in their style of writing. Information flows fast through the computational networks, and as humans have "information" flowing through their veins as well, they need to become as fast as computer, hence they become "Faster Human".

The last emerging type in the development of the "improved" human is the "Smarter Human". This human type is defined by the emergence of smart technologies, such as Artificial Intelligence. It has been shown that research in neuroscience is going towards a direction to examine the human mind in relation to computer technologies. Brain-machine interfaces are in the focus. Humans have succeeded in improving the body already, to make it stronger and somehow indestructible. Now, the deepest human core, the mind, is is brought to the forefront. The novels dealing with this very topic depict a future in which humans can upload their minds into a machine, to store their memories and even to make their minds immortal. Making the human mind immortal means to also making the human immortal somehow. The novels *Today I am Carey*, *Machines Like Me*, and *Recursion* show the matured symbiosis of mach and machine. Now, it is inevitable to become half machine in a way. The clear distinction is lost: Humans are not just humans, and machines are not just machines, any longer. In fact, humans are machines and machines are humans. That is the new reality of mankind and this is depicted in the stories as well. In *Today I am Carey* the blurred line between what is human and what is machine is presented through the character of the android Carey. At the beginning of the story, it is depicted as a mechanical android which is being programmed for special medical purposes to help real humans suffering from Alzheimer's overcome memory loss. As the story progresses, Carey also progresses and develops his own personality, his own mind and eventually becomes a human, with a name, a family, a passport, a bank account, a job, and even the right to make legal decisions. He is granted everything that is purely regarded as humans. In fact, the story is being narrated by him in the first-person perspective which shows that he is regarded as a being with an own mind and an own perspective on life. Also in *Machines Like Me,* the android Adam develops a mind of his own and hence becomes more human. In *Recursion,* it is the other way around, there the human becomes more machine as his memories are transmitted into a computer. After all, the line between being a machine or being a human blurs completely.

The Trichotomy Model of the New Human" Illustrates that as science and technology progress, humans simultaneously undergo continuous transformation and development. This connection becomes particularly evident in the portrayals of various future human worlds depicted in science fiction literature. This work aimed to contribute a new viewpoint in the academic field of anthropology. It showed that the discourse of science and technology is deeply connected with the presented future worlds of the humans in science fiction literature. Moreover, it highlighted that the evolution of humanity is closely intertwined with the development of technology. This, in turn, is conveyed through the medium of science fiction narratives.

However, as the boundary between what is truly human, man, machine, or a fusion of both, and what is genuinely real, the physical or the virtual world, continues to blur, it becomes highly noticeable that "The Trichotomy Model of the New Human" manifests across all dimensions of human and technological existence, whether in science fiction or in the realities of the non-fictional world.

Interestingly, I encountered this topic during a personal conversation, which emphasized that even in everyday reality, the line between humans and machines is becoming increasingly burred as both continue to evolve simultaneously. In a discussion with a close friend, an IT specialist, he shared insights into the rapid development of information technology in recent years. Further, he illustrated how deeply intertwined human progress and technological advancement have become. He mentioned that technologies in the field of IT have advanced rapidly over the years. It all began with what he called "functional IT", which focused on ensuring that systems worked efficiently and served their purpose. This instantly reminded me of the discourse of human body enhancement, where the goal is to improve performance and functionality of the human, often beyond what the human body can naturally achieve.

The next step in IT would be the "software IT" where programs where invented that could deal with the huge information flow faster. Information and data needed to be processed in a more efficient way. This reminded me of the second human type, the "Faster Human" as he strives for processing information faster, hence for functioning better, in his newly emerged world in cyberspace. The newest IT technologies are to be found in the field of "network IT", especially in "cloud computing". Here, the focus is on technology that works with neural networks, just like the human brain. Brain-machine interfaces are an important part of it. Just like the third human type, the "Smarter Human" focuses on brain-machine interfaces. Thus, this illustrates that clear parallels can be drawn between technological advancement and human development. As technology evolves, so too does

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humanity, shaping itself in response to new capabilities and environments. Consequently, the potential for humans to become stronger, faster, smarter, is closely tied to the progress of science and technology. In fact, this suggests that humanity, in its evolving relationship with technology, will never stop to redefining itself, to always as the question anew of what it means to be human. Humans will always adapt to the latest technologies and the newest environments, always rewriting themselves. Thus, the title of this work "Rewriting the human" as it captures the central argument: that the human condition has always been shaped by transformation, adaptation, and integration with the non-human.

In fact, technology has been an integral par of human life since the very beginning. As McClellan notes: ""Technology has functioned as a fundamental driving force in human history. Undoubtedly, then, as long as humankind exists and inhabits planet Earth, humans will continue to shape their world using their technologies" (McClellan III, 437). This perspective supports the claim that from the very onset of human existence, humanity has been in a constant state o transformation, continuously evolving, adapting, and becoming something other than it was the day before, always rewriting themselves.

The act if rewriting the human is not only dine by fictional characters in science fiction narratives, but also by scholars engaged in real-life discourse surrounding the ever-evolving human condition. This reinforces another central thesis: due to the continuous evolution of the human species, there can never be a definitive answer to what the human truly is to what ultimately defines humanity. The human could be regarded as existing within an anthropology of indeterminacy. As Plessner has also indicated that the human exists in an ongoing movement, as "life is movement" (Plessner, 2019, 123), and hence the human finds himself in the evolutionary process of always becoming other: "If process is the becoming of something, this something reaches through becoming as persistence in a twofold manner: as the beginning-something and as the end-something, as the where-from and the where-to in the modes of emerging and of having emerged of one and the same thing. Something is becoming, thereby moving beyond its prior being" (Plessner, 2019, 126). This human condition makes it impossible to establish a fixed or absolute definition of what it means to be human. Fact is, human development is ongoing, and new innovations will continue to emerge that surpass existing technologies. According to current science fiction, there is little cause for concern, so long as we refrain from creating a form of super intelligent technology that surpasses human control and authority. This leads to the final thesis statement: that in current science fiction literature a forecast of the "world to be" can be detected. Many science fiction stories dealing with AI or other smart machines depict situations in which machines become, at some point,

smarter than the humans and start to turn against humans (see chapter 6.2). Just like in *Machines Like Me,* for instance, where Adam the android starts to function automated and destroys his "turn-off" switch and even defends himself by attacking the human owner. The fear expressed in such stories is that when humans build machines equipped with a smart human mind, this very technology could become dangerous for humans in the future. As these intelligent machines become automated and develop their intelligence further. "The idea of autonomous technology is that technology is out of control and has created own cycles, independent from human creation" (Irrgang, 10). Eventually, they could overcome humans and pose a threat. The assumption is being made that humans could gradually lose control. Humans won't control machines any longer, but machines will control humans. This study focused on the discourse of humans and technology in reality, as much as in science fiction literature, and adhered it in the following thesis statements:

a) *We will never have an answer for: What is the human? Anthropology of indeterminacy*

b) *We are constantly rewriting the human.*

c) **There are three human types** *identifiable within the course of human and technological development represented in contemporary science fiction literature.*

d) *Literary forecast: Singularity: Humans gradually lose control. Humans don't control machines any longer, but machines control humans.*

This work aimed to find the answer of what constitutes the human and moreover to find a pattern of how the human changes within his evolution. This pattern was found in the discourse of science and technology, as well as in science fiction literature. "The Trichotomy Model of the New Human" has been created to show this particular pattern. It connected fictional and non-fictional assumptions towards the future of the human species. Finally, it showed that in current science fiction there is a forecast presented of how humans will have changed in the future and of how powerful technology could become. Moreover, this work engaged with the philosophical discourse surrounding the transformation of the human species and the notion of taking revolution into our own hands. In real-world scientific discourse the thin line between developing beneficial technologies and humanity's growing desire for constant advancement is critically examined, most notably by thinkers such as Stephen Hawking: "[…] I am sure that during the next century, people will discover how to modify both intelligence, and instincts like aggression. Laws will be passed against genetic engineering with humans. But some people won't be able to resist the temptation to improve human characteristics, such as size of memory, resistance to disease, and length of life." (Hawking qtd. in Seedhouse,

89). People tend to think the unthinkable is possible with the power of their minds and their technological inventions. As Nayar stated: "Technology is no longer a prothesis, a secondary 'addition': it is us" (Nayar, 28). That means that humans are technological and technology is human (Liggieri, 11). However, the question of ethics arises in this discussion, as well. As "[…] we tend to think we are the masters of everything" (Kaplan, 2), we become greedy and scream for more. Where technology was meant to overcome the natural human limits in the first place, it became a play field of testing how far human power could go and in how far humans could play God. Also, Plessner mentioned that in the process of human development not only the human changes, but also the humane changes (Plessner, 1953, 18). Erik Seedhouse even goes further by saying that "[i]t's a world of high technology and low empathy. Not a very *human* place to live" (Seedhouse, v). It might be true that "[w]hen we focus on the better that we might achieve, we tend to forget what is good about what we already have" (Hauskeller, 175f). Regardless, humans will cintunie to chance and evolve, as this constant transformation lies at the heart of their nature, the true "conditio humana". The human species is unbound to nature and hence free to decide how it wants to be or what it want to become. In conclusion, it is up to the "[…] human free will as defining its own self and its future" (MacCormack, 9). Since change is inherent to human nature, we remain human regardless of our appearance, the form our bodies take, or the state in which our minds exist. At our core, we continue to be human, only now, perhaps stronger, faster, and smarter than before.

"The Trichotomy Model of the New Human" outlines three distinct human types that have emerged and evolved over time. Purely speculatively, it is possible that we are even on the verge of evolving into a fourth type, the "Superhuman 4.0", that will unite all enhancements into one, the stronger, faster, smarter superhuman. In fact, the question of humanity "will always be more complex than our capacity for understanding" (Pepperell, 39) as "*We* decide what it means to be human […]" Hauskeller, 178), the world is ours. Whatever the human will become in the future: "In any case, the new you is the true you" (Hauskeller, 135). It is finally believed that "it is our duty to "make the world a better place", and that for that reason we need to take "control of evolution and our future development to the point, and indeed beyond the point, where we humans will have changed, perhaps into a new and certainly into a better species altogether" (Hauskeller, 76). Maybe a species called the Superhuman 4.0.

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Science Fiction Novel's between the 1970's – 1990's

Results:

Human Body: 29x

Communication: 14x

Mind: 11x

Title (Author)	Year	Theme	Summary
Do Androids Dream of Electric Sheep? — Philip K. Dick	1968	Human Body	Human-robot interactions explore identity and embodiment.
Ringworld — Larry Niven	1970	Human Body	Explores genetic engineering and bodily modification among humans and alien species.
R.U.R. (Rossum's Universal Robots) — Karel Čapek	1970s (revival)	Communication	Renewed interest in human-machine communication and robot language.
The Stepford Wives — Ira Levin	1972	Human Body	Women replaced by robotic versions, reflecting anxieties over control of the female body.
The Forever War — Joe Haldeman	1974	Human Body	The impact of time dilation and war on the body, with soldiers returning to Earth after decades.
The Forever War — Joe Haldeman	1974	Communication	Soldiers experience communication delays due to space-time effects.
The Demolished Man — Alfred Bester	1974	Mind	Telepathy changes how crime and human psychology are understood.
The Shockwave Rider — John Brunner	1975	Human Body	Cybernetic augmentations and brain-computer interfaces; societal

			effects on human bodies and minds.
The Shockwave Rider — John Brunner	1975	Communication	Early cyberpunk exploring hacking, data networks, and virtual realities.
The Man Who Fell to Earth — Walter Tevis	1976	Human Body	An alien struggles with adapting his body to Earth's environment, symbolizing bodily alienation.
Man Plus — Frederik Pohl	1976	Human Body	A man is transformed into a cyborg to survive on Mars, exploring bodily adaptation and human limits.
The Man Who Fell to Earth — Walter Tevis	1976	Mind	An alien struggles with human identity and cognitive dissonance.
I, Robot — Isaac Asimov	1977	Human Body	Robot-human communication blurs lines between intelligence forms.
Altered States — Paddy Chayefsky	1980	Mind	Sensory deprivation and substances affect consciousness and identity.
The Metamorphosis — Franz Kafka	1981	Human Body	Transformation into an insect; influential body horror and identity discourse.
The Ghost in the Machine — Arthur Koestler	1981	Mind	Philosophical look at consciousness and the structure of the mind.
Do Androids Dream of Electric Sheep? — Philip K. Dick	1982	Mind	Examines consciousness and empathy between humans and androids.
Neuromancer — William Gibson	1984	Communication	Cyberspace and AI redefine human interaction and digital consciousness.
Neuromancer — William Gibson	1984	Human Body	Human consciousness merges with AI; body modification through cybernetics.

The Handmaid's Tale — Margaret Atwood	1985	Communication	Restricted communication and language in a dystopian regime.
Blood Music — Greg Bear	1985	Human Body	Cells evolve into sentient entities, exploring microscopic and genetic transformation.
The Handmaid's Tale — Margaret Atwood	1985	Human Body	Bodily autonomy and control of women's bodies in a dystopian society.
The Windup Girl — Paolo Bacigalupi	1985	Human Body	Biotech and genetic engineering; body transformation in a dystopian future.
Eon — Greg Bear	1985	Human Body	A future Earth discovers a mysterious asteroid with altered realities and post-human transformations.
Blindsight — Peter Watts	1986	Mind	First-contact narrative comparing human and alien sentience.
The Girl With the Silver Eyes — Willo Davis Roberts	1988	Human Body	A girl with unusual powers faces identity and bodily challenges.
The Body Artist — Don DeLillo	1988	Human Body	Explores body use in art, bodily transformation in grief.
Hyperion — Dan Simmons	1989	Communication	Farcaster tech and AI influence long-distance interaction.
Snow Crash — Neal Stephenson	1989	Communication	Hyper-connected society explores digital language and virtual reality.
Hyperion — Dan Simmons	1989	Human Body	Body transformation and virtual worlds impact human flesh.
Cyborg — Martin Caidin	1989	Human Body	A man becomes a cyborg; explores human-technology relationships.
The Silent Stars Go By — James S.A. Corey	1991	Communication	Challenges of transmitting

			information across light-years.
Body of Glass — Marge Piercy	1991	Human Body	Biotech and body modification; themes of bodily autonomy.
The Girl With the Silver Eyes — Willo Davis Roberts	1992	Human Body	Girl with telepathy faces physical and mental consequences.
Virtual Light — William Gibson	1993	Human Body	Virtual realities and cybernetic implants reshape identity.
Virtual Light — William Gibson	1993	Communication	Augmented reality and cyberspace reshape communication norms.
The Silent Stars Go By — James S.A. Corey	1993	Mind	Contrasts alien and human cognition.
The Helix and the Sword — David A. Zindell	1993	Human Body	Body enhancements by tech; transcending biological limits.
The Diamond Age — Neal Stephenson	1995	Communication	Interactive tech transforms education and interpersonal relationships.
Feed — M.T. Anderson	1995	Communication	Brain-computer interfaces change human relationships and autonomy.
The Diamond Age — Neal Stephenson	1995	Mind	An AI-driven primer shapes cognition and childhood development.
The Diamond Age — Neal Stephenson	1995	Human Body	Nanotech allows physical form alteration and identity exploration.
Proteus in the Underworld — Charles Sheffield	1995	Human Body	Deals with extreme body modification and identity in a society shaped by biotechnology.
The Madness Season — C.S. Friedman	1996	Human Body	Alien body transformation and genetic modification ethics.
The Human Factor — Graham Greene	1996	Human Body	Psychological and physical toll of

			espionage and betrayal.
The Postmortal — Drew Magary	1998	Communication	Immortality shifts how communication and information are controlled.
The Postmortal — Drew Magary	1998	Human Body	Aging can be stopped; explores immortality and body preservation.
The Quiet War — Paul J. McAuley	1998	Mind	Genetic and sensory augmentation reshape human cognition.
Altered Carbon — Richard K. Morgan	1999	Mind	Mind transferability challenges identity and memory.
Oryx and Crake — Margaret Atwood	1999	Human Body	Genetic engineering reshapes bodies; critiques humanity's manipulation of genes.
Altered Carbon — Richard K. Morgan	1999	Human Body	Consciousness transfer into new bodies; explores immortality and body-swapping.
The Quantum Thief — Hannu Rajaniemi	1999	Communication	Encrypted conversations and privacy reshape society.
The Matrix — The Wachowskis	1999	Mind	Simulated reality explores how minds perceive truth.
The Three-Body Problem — Cixin Liu	1999	Communication	Interstellar communication with aliens and its ethical implications.

Science Fiction Novel's between 2000-2018

Results:

Human Body: 13x

Communication: 19x

Mind: 11x

Title (Author)	Year	Theme	Summary
Tomorrow's Children — David Brin	2000	Human Body	Ethical implications of genetic engineering in children.
The Metamorphosis of Prime Intellect — Roger Williams	2002	Mind	Post-singularity AI reprograms reality.
Oryx and Crake — Margaret Atwood	2003	Human Body	Genetic engineering and post-apocalyptic consequences.
The Algorithms for Love — Ken Liu	2004	Communication	AI-generated personalities and human-computer interaction.
The Possibility of an Island — Michel Houellebecq	2005	Human Body	Cloning, immortality, and human modification.
Spin — Robert Charles Wilson	2005	Communication	Deals with planetary-scale communication over extreme timescales.
Transmission — Hari Kunzru	2005	Communication	A young programmer releases a virus that highlights global interconnectedness and digital communication.
Message in a Bottle — Nalo Hopkinson	2005	Communication	Explores cultural misunderstandings and interspecies communication.
Blindsight — Peter Watts	2006	Mind	Limits of human consciousness in

			understanding alien minds.
Daemon — Daniel Suarez	2006	Communication	An AI daemon continues its creator's plans, manipulating digital infrastructure and online interactions.
Rainbows End — Vernor Vinge	2006	Communication	Explores augmented reality, surveillance, and networked information.
I, Row-Boat — Cory Doctorow	2006	Mind	AI rowboat contemplates existence.
Daemon — Daniel Suarez	2006	Communication	AI system orchestrates global events through online communication.
Blindsight — Peter Watts	2006	Communication	Examines alien communication and the limitations of human cognition in understanding non-human intelligence.
Exhalation — Ted Chiang	2008	Communication	Alien species communicates via gas pressure.
Exhalation — Ted Chiang	2008	Human Body	Self-maintaining alien bodies as metaphor for human augmentation.
The Windup Girl — Paolo Bacigalupi	2009	Human Body	Genetically engineered humans in a bio-corporate world.
The Dervish House — Ian McDonald	2010	Human Body	Nanotechnology and biotechnology in a futuristic Istanbul.
Sinners, Saints, Dragons, and Haints — N.K. Jemisin	2010	Human Body	Post-apocalyptic transformations of the human body.
The Quantum Thief — Hannu Rajaniemi	2010	Communication	Cyberpunk heist with encrypted memories, quantum communication, and data-driven

			societies.
The Quantum Thief — Hannu Rajaniemi	2010	Mind	AI, uploaded minds, and quantum consciousness.
The Lifecycle of Software Objects — Ted Chiang	2010	Communication	Explores AI consciousness and how artificial beings learn and communicate.
Ready Player One — Ernest Cline	2011	Communcation	In a dystopian future, people escape into a virtual reality world, raising questions about identity and consciousness.
The Paper Menagerie — Ken Liu	2011	Communication	Origami as communication medium and cultural transmission.
Nexus — Ramez Naam	2012	Mind	Nanodrug enables human-to-human mind communication.
Nexus — Ramez Naam	2012	Communication	Nano-drug enables direct brain-to-brain communication.
Memento Mori — Madeline Ashby	2012	Mind	Immortality via memory augmentation.
The Truth of Fact, the Truth of Feeling — Ted Chiang	2013	Communication	Perfect memory and digital records reshape truth perception.
Crux — Ramez Naam	2013	Mind	AI-enhanced cognition and collective intelligence.
The Circle — Dave Eggers	2013	Communication	Mass surveillance and social media control.
The Peripheral — William Gibson	2014	Communication	Remote communication across timelines and data manipulation.
The Peripheral — William Gibson	2014	Mind	Telepresence and consciousness transfer.
The Peripheral — William Gibson	2014	Human Body	Remote-controlled prosthetics and

			cybernetics.
Echopraxia — Peter Watts	2014	Mind	AI-driven post-human evolution and collective intelligence.
The Regular — Ken Liu	2014	Human Body	Cyberpunk detective tale with surveillance implants.
Cat Pictures Please — Naomi Kritzer	2015	Communication	A benevolent AI interacts through online behavior.
The Water Knife — Paolo Bacigalupi	2015	Human Body	Biotech and body augmentation in a climate crisis.
Infomocracy — Malka Older	2016	Communication	A global information network influences democratic elections.
The Power — Naomi Alderman	2016	Human Body	Women develop electric powers, changing human evolution.
Autonomous — Annalee Newitz	2017	Mind	AI with identities face ethical dilemmas.
Autonomous — Annalee Newitz	2017	Human Body	Biotech, body modification, and pharmaceutical hacking.
The Test — Sylvain Neuvel	2018	Mind	AI-administered test with deep psychological consequences.
Red Clocks — Leni Zumas	2018	Human Body	Reproductive tech and altered human fertility.

Science Fiction Novel's from 2018 - now

Results:

Human Body: 5x

Communication: 6x

Mind: 10x

Title (Author)	Year	Theme	Summary
A Closed and Common Orbit — Becky Chambers	2016	Mind	AI in a humanoid body embarks on a journey of identity and self-discovery.
Autonomous — Annalee Newitz	2017	Communication	Focuses on AI-human social contracts, pharmaceutical piracy, and the ethics of information exchange.
Sea of Rust — C. Robert Cargill	2017	Communication	In a world ruled by AI, communication between machine consciousness explores memory, loss, and post-human society.
Stronger, Faster, and More Beautiful — Arwen Elys Dayton	2018	Human Body	Six stories examining genetic engineering, body modification, and future society.
Artificial Condition — Martha Wells	2018	Mind	Self-aware security unit explores autonomy and AI-human interaction.
Rogue Protocol — Martha Wells	2018	Mind	Explores identity and coexistence of humans and AI.
Exit Strategy — Martha Wells	2018	Mind	Murderbot's pursuit of free will and ethical AI implications.
Artificial Condition — Martha Wells	2018	Human Body	Focuses on body and mind modifications of the AI protagonist.
Today I Am Carey — Martin L.	2019	Mind	An AI cares for a terminally ill woman

Shoemaker			by assuming human personas, exploring empathy and identity.
Interference — Sue Burke	2019	Communication	Explores human-plant communication and interspecies understanding.
Children of Ruin — Adrian Tchaikovsky	2019	Communication	Interspecies communication and perception among alien intelligences.
Gideon the Ninth — Tamsyn Muir	2019	Human Body	Mix of sci-fi and fantasy featuring necromancy and physical transformation.
The Rosewater Redemption — Tade Thompson	2019	Human Body	Alien contact and transformation of human biology through psychic phenomena.
Recursion — Blake Crouch	2019	Mind	Memory alteration reshapes reality, challenging the structure of human consciousness.
And Shall Machines Surrender — Benjanun Sriduangkaew	2019	Mind	Explores autonomy and identity in a city ruled by AI.
Exhalation: Stories — Ted Chiang	2019	Mind	Short stories on consciousness, free will, and human-AI connections.
Fall; or, Dodge in Hell — Neal Stephenson	2019	Mind	Mind uploading and digital afterlife challenge boundaries of consciousness and identity.
Emergency Skin — N.K. Jemisin	2019	Human Body	Explores bodily autonomy and societal control in a post-apocalyptic Earth.
Machines Like Me — Ian McEwan	2019	Mind	Human-robot emotional complexities, consciousness, and ethics of sentient AI.
The Light Brigade — Kameron Hurley	2019	Communication	Time-shifting soldiers challenge linear reality and

			communication across fractured timelines.
The Ministry for the Future — Kim Stanley Robinson	2020	Communication	Examines global coordination through data, diplomacy, and climate tech as humanity faces environmental collapse.

What does it mean to be human in an age of accelerating technology?

From cybernetic bodies to neural networks, *Rewriting the Human* explores how contemporary science fiction literature has reflected — and reshaped — the evolving concept of the human across five decades of technological transformation.

Spanning works from the 1970s to the present, this dissertation introduces the Trichotomy Model of the New Human, a literary framework that traces the metamorphosis of humanity in speculative fiction. Through a rigorous philosophical and literary lens, Monika Tlauka identifies three distinct phases of this evolution:

- **The Stronger Human** — emerging from early explorations of biotechnology and the body.
- **The Faster Human** — shaped by the advent of cyberspace and digital communication.
- **The Smarter Human** — reflecting recent meditations on artificial intelligence and cognitive enhancement.

As science fiction responds to the pulse of innovation. it become clear: **the human is not a fixed entity**, but **a narrative in flux — continuously rewritten by the very technologies it dreams of.**