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SPECULATIVE FICTION FOR FUTURE PHYSIOTHERAPIES 4**

PHYSIOPUNK

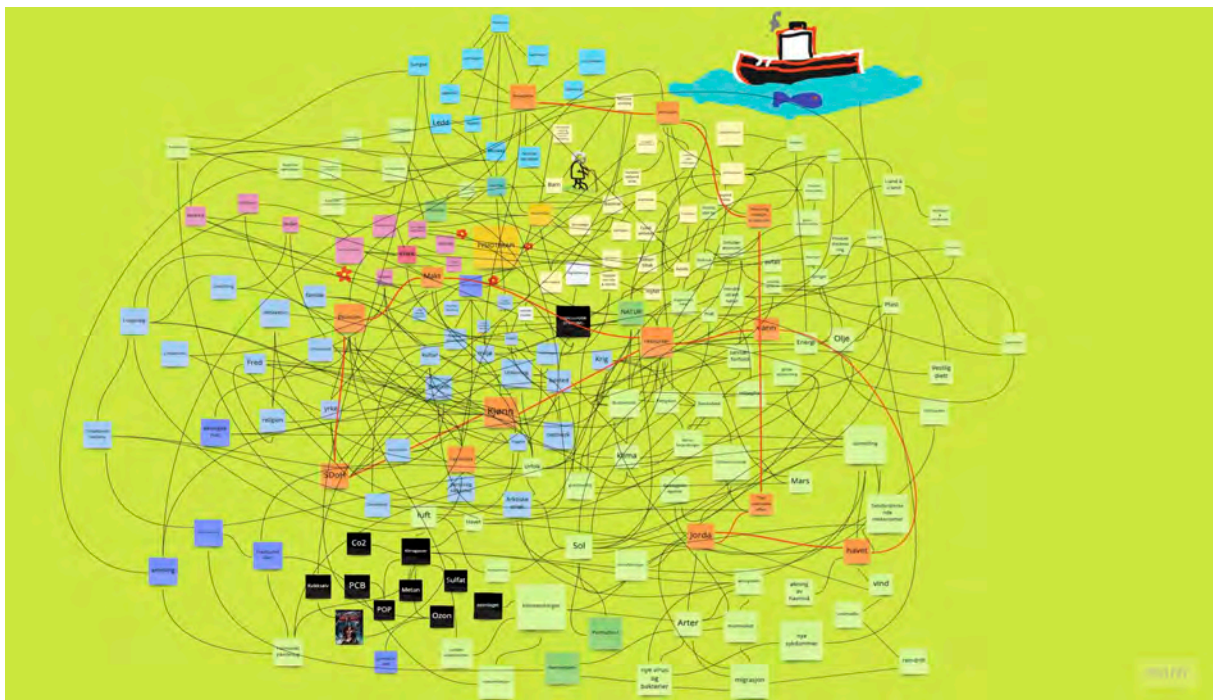
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PHYSIOPUNK: SPECULATIVE FICTION FOR FUTURE PHYSIOTHERAPIES

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In light of today's deeply connected social and environmental crises, environmental and sustainability education is increasingly being integrated into public health and healthcare professional education around the world (Barna, Maric, Simons, Kumar & Blankestijn, 2020). The Norwegian 'regulations on national guidelines for physiotherapist education' clearly support the integration of these topics by stating that 'in addition to individually oriented work, physiothera-

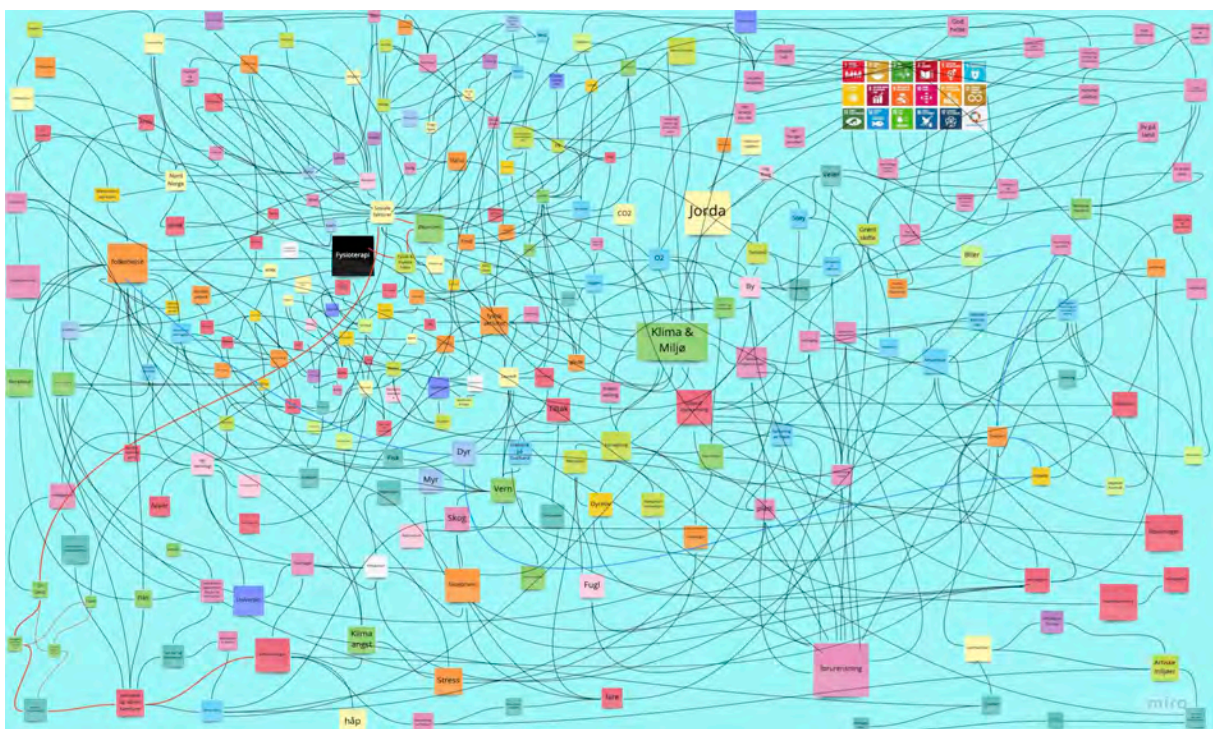
pists should contribute to improving public health and the sustainability of society on the group and system-levels...with competencies in interdisciplinary and goal-oriented collaborations within the health- and care-sector and other sectors...to meet societies existing and future needs' (Forskrift om nasjonal retningslinje for fysioterapeut-utdanning, 2019, our translation). In a new introductory public health module for our 1st year physiotherapy students at UiT Norges

arktiske universitet we therefore integrated education about the social and environmental problems of our time and how they interact with health at many levels to inspire students to imagine novel futures for physiotherapy and the role of healthcare professionals in the future.

The interconnected nature of today's social, environmental and health challenges requires systems- or complexity-thinking as a core competence (Guzmán et al, 2021). The foundation of the module therefore consisted of four days during which students gradually broadened their understanding of the complexities of health, health care and physiotherapy. The process of expanding students vision began with the creation of an online visual map representing everything they learned about physiotherapy during the 1st and 2nd semester so far, as well as their assumptions about physiotherapy prior

to entering the Bachelor program. This map was further expanded over the next three days as students learned about the social and ecological determinants of health, their global and local (northern Norwegian and arctic expressions and relevance), as well as the search for integrated solutions for them across recent developments like environmental physiotherapy, planetary health, sustainable healthcare and the UN Agenda 2030 Sustainable Development Goals.

The Sustainable Development Goals highlight the need for bold transformative change and contributions from all sectors of society if we are to achieve them (UN, 2015). To achieve this transformative change and implement solutions that do justice to the interconnected nature of today's social, environmental and health challenges, extensive innovation and transdisciplinary collaboration are required.



This, in turn, requires transformative visions, creative and compelling narratives that can inspire and drive change towards healthier, more just and sustainable futures. Work aimed at teasing out such narratives is driven by the assumption that ‘imagination can build the anticipatory capacity to get ahead of the curve, rather than react to crisis’ (Wyborn, et al., 2020). It has further been argued that particularly envisioning positive and desirable futures is a critical ‘first step in creating a shared understanding and commitment that enables radical transformations toward sustainability in a world defined by complexity, diversity, and uncertainty’ (Pereira, et al. 2018).

In the development of the written exam for this introductory module, we took inspiration from recent developments in fictional writing that are creatively seeking to respond to today’s crises and develop compelling narratives of desirable futures for healthcare and society in general (Fernando, et al., 2019; Malpas, 2021). Day five of the module consisted in a full-day creative writing workshop that included an introduction to genres like science fiction, speculative fiction, climate- and eco-fiction, solar and hopepunk (where the term ‘punk’ is used to represent a radically different, but hopeful future); and a variety of creative writing, reading and storytelling exercises as a means to help students find a way into their written home exam.

Considerably different from other written exams and even student ex-

pectations of these, the exam task for this module was for each student to write a fictional story of future physiotherapy that goes beyond physical activity and workplace interventions for public health. Specifically, we asked students to envision futures in which physiotherapists work to address social and environmental problems directly, while only factoring in their deliberate, but indirect benefits for human health and functioning. Apart from the creative writing workshop, the main tools and evidence-base to help students develop these visions and trace links between social, environmental and health issues were the complexity-maps developed over the first four days of the module. Because of the knowledge tied into these maps, students did not have to use any literature to support their stories. We also explicitly advised them to push aside concern about whether their visions are realistic or feasible at this point in time but engage and therewith develop their imagination and creativity as freely as possible.

Though students reported challenges with the task and our instructions require some improvement for the next iteration of the module, our students also reported a high degree of satisfaction with the visual approach to systems-thinking and felt empowered by the permission to be creative and engage their imagination toward diversified healthcare futures. The final submissions encompassed an incredibly creative and diverse array of visions for future physiotherapies that respond to the complex, social and environmental

realities of health and care. Students' stories included visions of transformative forms of urban life on and below land and water, indigenous health leadership, working for the availability of clean air and green infrastructure, civilization and physiotherapy on Mars, multispecies co-existence, AI, robotics, and many more.

In collaboration with our students, we are excited to share a selection of stories that most closely adhered to the guidelines we had provided, felt especially meaningful by themselves, and happened to tell an overarching story as a coincidental series. This introduction was written to provide readers with clarity about the context in which these stories emerged. We highlight a few last considerations that should be kept in mind in the process of reading to avoid misunderstandings and, most importantly, any negative consequences for the students that have offered their stories for publication.

First off, it should be clear that neither all health, nor all social, ecological and technological detail are necessarily 100% accurate. The goal of this module was not to develop perfect solutions to social and environmental issues in the sense of new technologies, new clinical approaches, new policies, or similar. An advanced 3rd year module that we are currently developing will provide students with an opportunity to deepen their understanding and develop ideas towards 'more realistic' future public health interventions. The stories in the selection published here represent something different.

In a general sense, they represent first steps in finding one's way through the complex realities of healthcare as they tussle with previously unconsidered connections between health, society and environment. They stretch between an individual health orientation and a broader, societal and public health orientation as they push and pull on their emerging thoughts about either. Yet, precisely as Pereira et al. noted, it should also be clear that 'although these futures are highly innovative and exploratory, they still link back to current real-world initiatives and contexts' in different ways (Pereira et al., 2018). They link gradually deepening knowledge about anatomy, physiology, movement, health and more, to previously unconsidered social and environmental problems that can no longer be separated from the former. In doing so, they also question the global and professional values and practices that have gotten us into today's social, environmental and health crises, including paradoxes and problems that haunt physiotherapy's past and present.

Our profession has always been changing and discussing the importance of ongoing change but, at the same time, change has also been notoriously slow and sometimes met with fevered resistance. In today's world, heavily influenced by and sometimes even lived through social media, new and different ideas, people and values can also be met with considerable hostility. Writing and reading fictional stories is undoubtedly still very new and 'different' in the

context of physiotherapy and will seem strange, if not wrong to some.

Our students are showing a high degree of courage in sharing their stories with us and the broader public. In their search for novel futures, they express their fears, values and hopes, for the future, for themselves, for their future work as physiotherapists, and for the physiotherapy profession in general. In some stories, it feels as though a strong motivation and a new and bigger sense of agency grows in the students. In this sense, all of these stories are also deeply personal and intimate and so we ask and hope that readers will treat them with respect and appreciation, however they might feel about the stories or the context in which they arose. In all instances, we believe that while praise should be directed at our students, all criticism should be directed at us, as the educators responsible for the platform on which these stories could emerge. We have developed this module on the basis of some of the most up-to-date research and discourses in healthcare and tertiary education alike, and we always welcome constructive discussion of our efforts that can help us facilitate the best possible learning for our future colleagues.

Each story will be prefaced with a short paragraph providing further information on its specific context of social, environmental and health thoughts and questions, and some reflections on how it can inspire our thinking today. In stretching beyond the momentarily realistic, the implicit and maybe most

important goal of this exercise was to inspire people who dare to think and dare to dream, who dare to be creative, and so develop the imagination, cognitive flexibility and playfulness needed for 'radical transformations toward sustainability in a world defined by complexity, diversity, and uncertainty' (Pereira, et al. 2018). This adds competencies that, we believe, will considerably extend the growing professional knowledge and skills of our students.

As a series, these eight stories help us question what physiotherapy has been, what it is now and, most importantly, what it might be in the future. The point of fictional stories is to let us free of the confines of established conventions in thought and practice and spark our imagination towards the new. We hope that the eight incredible stories collected in this series will inspire and contribute to the open discussion about the future of physiotherapy and healthcare, filled with creativity and genuine care for the health of everyone we share this planet with.

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Physio
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A DIARY FROM THE FUTURE

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'A diary from the future' thinks through the positive social, environmental health effects of a large-scale transition to plant-based diets. These include changes for food production, consumption and food security, and with that, social justice, equity, education, poverty and the co-existence with other species. Even just the way the story thinks through and recognizes these complex relationships and effects is an achievement and a novelty for physiotherapists in itself. Reaching well beyond this, however, this is also a story about how fear and darkness can turn into hope, optimism and curiosity for the future as a result of learning and thinking about these complex relationships. Finally, 'A diary from the future' is also a reflection on the possibilities of broadening our understanding of physiotherapy, of the need for change, resistance to it, and the creative potential that is released when these resistances are overcome.



16.3.2071

Dear diary,

Today we have had students on clinical placement here at work. They entered the lab one by one, a little insecure at first, but they quickly became less nervous. It was so nice to see their young faces full of creativity and passion light up every single room they went into. As one of the oldest physiotherapists in our workplace, several of them were very interested in talking to me about what physiotherapy was like before and what I had learned

in my physiotherapy training when I was young. It was so refreshing to see that everything we have fought for was meaningful, and it made me reflect on how much has actually changed.

It is hard to conceive that the world has changed so much in such a short time. When I started my studies, physiotherapy was mostly about working curatively and health-promoting, but the term "health" was narrow and

was mostly concerned with individuals. Now this is just one of the branches in physiotherapy. The physiotherapy revolution started slowly and increased gradually. One of the first major concepts that the first activists fought for was diet and the promotion of plant-based lifestyles. At first, they were met with ridicule and criticism. How in the world would a plant-based diet solve our problems and help us out of the climate crisis we were facing? The first activists were called fanatics and even liars. How could they claim that the best way to save the fish was to let them live in peace and not eat them? Who in the world had imagined that not eating animal products would give us a better basis for reducing injustice in the world?

“

THE PHYSIOTHERAPY REVOLUTION STARTED SLOWLY AND INCREASED GRADUALLY... AT FIRST, THEY WERE MET WITH RIDICULE AND CRITICISM... AS PEOPLE FELT LESS THREATENED BY NEW IDEAS AND THOUGHTS OF CHANGE, MORE AND MORE PEOPLE DECIDED THAT THEY WANTED TO PARTICIPATE IN THE FUTURE.

Many were skeptical that it should be physiotherapists, and not nutritionists

or climate scientists and doctors, who should call for a change of eating habits for the climate.

Obviously health was about more than just fixing problems and injuries after they had occurred. The early activists had a goal of preventing as many health problems as they could, before people were in danger of getting them at all. According to the physiotherapists, changes in the environment would have positive consequences for everyone living in it, not just those people who were more affected by climate change than others. One of the biggest things they fought for was the recognition that health was complex and interconnected, and could be directly affected by things we had control over, such as eating habits, and the environment around us. This seemed impossible to a world bound by ancient traditions. Nevertheless, the message eventually spread, and open-minded individuals began taking part in what we now refer to as "the green transition". As people felt less threatened by new ideas and thoughts of change, more and more people decided that they wanted to participate in the future.

The activists promoted the message that plant-based diets would lead to a healthier and greener planet. In the past, large quantities of soy had been grown to feed animals on farms, which would then be eaten in the following. Soybeans are full of protein, yet for many years we thought we could get more protein out of eating animals. Now we have cut out the "middleman"

and use both the soy, and all the other beans and vegetables we grow, to provide food for all people around the world. Because we no longer use space to keep animals for food production, or grow food for animals, we need less space to grow more food overall. And this type of food production does not require as much water as animal husbandry either! In many ways, we have seen that the plant-based diets have enabled much more responsible consumption and production. Now, even gas emissions in connection with animal husbandry are a thing of the past.

Never before had we seen a change that brought as much positives with it as the physiotherapy revolution and the green transition. The changes that the activists had anticipated were clear, and many people, especially those with food-related ailments, could enjoy a better everyday life due to better health. What the activists had not imagined the extensive ripple effects a changed diet could have! As we needed less space to grow more food, it turned out that we could ensure greater food production and feed larger portions of the population. When animal husbandry and the meat industry were no longer critical for food production, they also did not require as much economic subsidies. As a result, the cost of fruit, vegetables, beans and legumes began reflecting the actual cost of production. Food simply became cheaper and more accessible to more people. This was a big step in the right direction to eradicate hunger. As if this wasn't enough, the increased need for growing fruit and vegetables

led to more jobs opening up. This may sound like there were simply more farmers in the world, but it wasn't only that. As more people could benefit from a diet that led to better health, and more people could access food and find work, more people and their children could also set aside time and money for better education. This created economic growth, even beyond the fact that the meat industry was no longer subsidised, and food production became much cheaper through direct plant consumption. Who would have thought that? Along with economic growth and good education also came gender equality, and less inequality more generally speaking. We do not yet know whether these changes were direct effects of the green transition, but clear parallels have been drawn between them. When we learned to live with other species without exploiting them in uneconomical and destructive ways, equality became a natural part of the conversation. Why in the world would one treat someone (or something) differently, or perform actions that affect others directly without their consent? It became evident to us as humans, that if we were ever to live in peace with one another, we must also live in peace with other species. It was only then that the idea that different people, or animals, deserved different treatment disappear.

As larger parts of the world population had better economic standing, more access to food, the opportunity for good education and more equality, innovation and sustainable planning became a more natural part of everyday life. Large cities used more sustainable

energy, which led to less greenhouse gas emissions. Both the quality of water and air improved dramatically because of this. Cleaner water provided a better basis for life under water, but also life on land. Wildlife flourished, and this made nature around us greener. In addition, cleaner water and cleaner air meant that the weakest and poorest were no longer at risk of dying from infections due to poor sanitation. People with lung diseases could breathe easier and live better, because the air was not as polluted.

Slowly but surely, reduced pollution also led us to see changes in extreme weather. Simply put, there is now less of it, and this provides better living conditions for us and animals alike. Maybe we can even avoid more loss of biodiversity? In addition, we have seen positive changes in the arctic. Less pollution has led to a slowing down the exponential warming of the arctic. As a result, the people who live there, urban infrastructures and arctic animal species are no longer in immediate crisis. The ice does not melt at the same rate as before and where it does, this can be linked to normal seasonal changes again.

For many, the green transition has been a symbol of hope and it has led to more people having better mental health as well, especially young people. For several years before the physiotherapy revolution, younger people were anxious about the future, because it seemed so dark and uncertain. With these improvements came a sense of future positivity and curiosity. It was a

light in the dark for many that allowed for creativity and innovation, because there was a need to break outdated patterns. Some, who previously had difficulty finding their place, or feeling at home in society, found their place and contributions in the new society. Some started environmental groups with the goal of planting trees and flowers, while others put together legal movements to correct misleading advertising and literature that pretended to be for the good of the environment and health, but at the same time encouraged the destructive consumption of nature.

“ **BEFORE, WE THOUGHT THAT PHYSIOTHERAPY MAINLY CONSISTED OF HELPING SOMEONE WHO HAS SUSTAINED AN INJURY, AND ALTHOUGH THIS IS STILL INCLUDED IN TODAY'S PHYSIOTHERAPY, IT NOW CONSISTS OF SO MUCH MORE.**

PHYSIOTHERAPY IS ALMOST EVERYTHING THAT CAN MANIPULATE AND AFFECT HEALTH.

Physiotherapy became a broad concept, because our view of health became more complex. Before, we

thought that physiotherapy mainly consisted of helping someone who has sustained an injury, and although this is still included in today's physiotherapy, it now consists of so much more. Physiotherapy is almost everything that can manipulate and affect health. It can be cooking classes, cleaning up rubbish in nature, planning infrastructure and roads that facilitate physical activity, legal action against harmful propaganda and a whole lot more. We are still doing clinical work, but this kind of work is not as dominant in our profession as it once was, simply because physical injuries are no longer as common in people's lives.

I do not think the first physiotherapists who started the movement fully understood the extent of what they were doing. We have seen many positive changes already, but it is far from over. Researchers and physiotherapists are constantly working to find alternatives to plastic, the use-and-discard society, and transportation methods. Few are still critical of further changes, but fortunately it seems that people are more open to innovation on the whole. We have realised that it is now or never.

PLANCTATION

Nora Amalie Karlsen, Bachelor program in physiotherapy, Institute for Health and Care Sciences, UiT The Arctic University of Norway.

'PLANCTation' - The story about Aurelia Oline Ebeltoft is a story about the power and ingenuity of female leadership and large-scale collaboration help find solutions to the health and existential problems created by severe environmental change. With a focus on solving air-pollution and its consequences for people's health and lung function, Aurelia's invention of PLANCTation – an algae farm for oxygen generation – has given people and planet a new lease on life. Algae farming is, in fact, being increasingly explored for a variety of health and environmental benefits, so this story is incredibly close to some very real developments. Woven into, however, is also a sense of getting fed up with resistance to change and a call to take responsibility, as people and healthcare professionals. To recognize and open ourselves to the many different possibilities to contribute to people's health and wellbeing and take action.



The sun is shining. The birds are tweeting. You can hear the fish jumping in the river a hundred meters away from the crowd, and the sound of the river flowing. The sound of fresh water hitting the rocks. The bees are buzzing around the flowers in the grass, and the weathervane at the top of the community center is standing completely still with no signs of being affected by wind. The crowd around the stage is starting to grow. They are happy, hugging and greeting each other as they are pulling together towards the

stage. There is not a single cloud in the sky, nor does there seem to be a single cloud in the minds of the people here.

A man on the lower side of the stage is standing next to two other people. He has a charismatic and proud smile. There are smile wrinkles running from his nose down into half arches all around his mouth. There are no wrinkles on his forehead, at least none that are tightening on it right now. No sign of worry. He has light brown hair, and almost even lighter eyebrows and

eyelashes. He is wearing a white shirt with a small pin attached to it. The sun is hitting the pin equally as strong as the man with the charismatic and proud smile. He pats one of the women he is talking to on the shoulder, smiles at another man, and goes up the stairs to the stage. On the way up, he quickly looks for his notes, which come up

“AURELIA WAS DETERMINED TO CREATE CHANGE. SHE HAD HAD ENOUGH OF BADLY SICK PATIENTS, ENOUGH OF THE CLIMATE DEBATE AND ENOUGH OF POLITICIANS GIVING EMPTY PROMISES. SHE READ UP ON CLIMATE CHANGE, AND DISCOVERED THAT WHILE THE ICE WAS MELTING, PHYTOPLANKTON IN THE OCEAN HAD POORER LIVING CONDITIONS. SOMETHING HAD TO BE DONE.

from on a transparent screen from the podium. He almost trips up the stairs. Now the crowd is fully gathered around the stage, and everyone is looking up at the man in excited anticipation.

Everyone knows who he is and why he is standing there. It almost looks like he is meeting the eyes of every person and all the cameras around the stage. He smiles again, big and proud, while the microphone and the transparent screen with text are automatically adjusted toward him.

“My dear friends! This is a festivity. It is a celebration. “PLANCTation” has turned 30 years old. It is 30 years since 8 July 2045. 30 years since the first plantation for phytoplankton was founded. 30 years since the beginning of a new era. A time that gave hope, change and a new vision for the future!

Occasions like this give us a chance to look back at history. It is important and necessary to ensure that such a story is not repeated. Let me tell you about Aurelia Oline Ebeltoft, who saw a need for change. A need for change that most people also saw, but for which no solution had been found.

Let me take you on a journey. Aurelia Oline Ebeltoft was a 47-year-old physiotherapist who, among other things, worked with many patients with complicated lung disorders. She was in the profession for a long time, and over the years saw a sad development in public health. More and more of the patients she worked with were lung patients who had become ill from air pollution, one of the biggest environmental health risks. Millions died prematurely each year because of air pollution. As early as 2012, the World Health Organisation had in fact reported that air pollution was the environmental

problem that most contributed to lung diseases, and even then, around 400,000 people in Europe died prematurely as a result of severe air pollution. At that time, measurements showed that a human being emitted an average of 4.9 tonnes of CO₂ every year.

Climate change was set in motion. Temperature on earth increased, there was more rain, more extreme weather, and permafrost and glaciers had begun to melt. Many people feared that they would have to flee their homes and become climate refugees, as there were already many of them. People who had to flee their homes because sea levels began to rise, floods drowned cities that already had vulnerable infrastructure, because of desertification in Africa, extreme weather destroying fertile soils, glaciers melting and leading to cuts in drinking water in the Himalayas, warmer seas with greater storms, and permafrost melting leading to the emission of greenhouse gases from the ground. If the sea level were to rise by another meter, 145 million people would have to find a new place to live." The man now spoke with grief in his face. The audience had the same. One could see grief in the faces of most people as he talked about all this. Blank eyes even. Most people were affected by it, just as he was. He took a break and a deep breath before continuing on.

"Aurelia could see the health damage that air pollution had caused to the greatest extent. In 2042, she saw a disconcerting development in global health, both for the planet and for the

people on it. She saw a need to prevent pollution in the lungs! Air pollution was due to, among other things, industry, heating, fires and transport. As mentioned, the ice in the Arctic had also begun to melt. Aurelia was determined to create change. She had had enough of badly sick patients, enough of the climate debate and enough of politicians giving empty promises. She read up on climate change, and discovered that while the ice was melting, phytoplankton in the ocean had poorer living conditions. Something had to be done. After all, phytoplankton accounted for half of all the oxygen produced on earth! Less nutrients for the algae would lead to less oxygen production, and less food for the rest of the ecosystem. This would mean that the CO₂ levels would increase even further, and more people would get sick." The man looked from one side of the crowd across to the other. The grief in his face disappeared more and more, and a smile appeared on his mouth. In the few seconds of silence, everyone could hear the birds chirping.

"Thanks to Aurelia, a plantation was built to produce more phytoplankton. PLANKTasjen was built in a sustainable way, and of course without additional emissions. Within 3 years an idea had become a reality and the production of algae was underway. Since then, we have seen a positive increase in the quality and content of gases in the air. Even though the earth became warmer, the ice had melted significantly, and the earth is not the same, it is still on its way back to being what it once was. The

number of people dying from air pollution has decreased and there is much less CO₂ in our air. The air we all breathe. The air that we feel and at

“PUBLIC HEALTH HAS CHANGED, NATURE HAS CHANGED. TOGETHER, THE HEALTH OF PEOPLE AROUND THE WORLD HAS CHANGED. IT IS NOW OUR JOB, AS A SOCIETY, AS PEOPLE WHO ARE ALLOWED TO LIVE ON THIS PLANET, AS CLIMATE FIGHTERS AND AS HEALTH WORKERS, TO ENSURE THAT IT CONTINUES LIKE THIS.

the same time don't feel around our skin. The same air. The same air that is in the desert in Africa, and over the ice in the Himalayas. The concentration of air pollutants is reduced and the air quality we have today has never been better! All this as a result of the PLANCTation, and of course, all other measures that have been taken. The emissions are as low as they can be, people transport themselves to places using their bodies, and the globe has become a healthier and better place to live.

Because air quality had improved so much in a short time, new species have

also evolved. The plant "Algillis" was discovered in the Arctic 10 years ago. We know it to release a special gas that is attracted to the minerals in the ice, before it itself is turned into ice. And so, the ice in the Arctic, which had begun to melt, is now covering almost the same area as it was 150 years ago! This is historic. It's revolutionary. It's deeply touching." And he really meant it. Some in the audience gave a cheer, others smiled hopefully with shining eyes. "I'm glad Aurelia got to see what she did, and what she did for our planet, before she left us. What she did for our health. For everyone.

I want to reflect on where we are today and where we are going. Today, the ethnic groups and cultures around the Arctic are no longer facing a threatening future, where they feared having to flee their homes, find new jobs and new living conditions. The ecosystem is no longer in danger. The temperature of the earth has reached a plateau, and there is no longer any sign that it will continue to rise - there is in fact a hope that the temperature can fall back. Public health has changed, nature has changed. Together, the health of people around the world has changed. It is now our job, as a society, as people who are allowed to live on this planet, as climate fighters and as health workers, to ensure that it continues like this. We have seen what direction things can go, what can happen to our earth, and what can happen to us. We will not go that way again, and we will not let that way become a possibility again.

Dear friends! Tonight, we celebrate. Tonight, we have a festival. Thanks to everyone who has helped us celebrate 30 years, and to all who continue to contribute. PLANCTation has given jobs to many unemployed people, but what you have given us is much bigger. YOU have made this possible. Together. I thank you and hope you will continue this journey with us. Tonight, we are going to toast! We will toast to 30 years and everything we have achieved. We

will toast to Aurelia, and above all - to friendship, knowledge and our global health! Thank you."

It was quiet for just a second before the audience broke out in cheers and applause. And the man gave applause to the audience. The podium, microphone and transparent screen went down toward floor of the stage, and the man stepped down the stairs towards the audience.

URBAN HEALTH THEN AND NOW, A REFLECTION (PHYSIOTHERAPIST, 15.03.2150)

Silje Kristin Nygård, Bachelor program in physiotherapy, Institute for Health and Care Sciences, UiT The Arctic University of Norway.

'Urban health then and now, a reflection (Physiotherapist, 15.03.2150)' its starting point in the development of human settlements and population throughout history. On this basis, it envisions a future in which a shift to greener urban cities has led to various improvements in people's health and social conditions, both globally and locally. As more and more people are living in cities and the greening of cities is underway, this vision and its exploration all but a fantasy. With added collaboration from health professionals, urban planning and design could support the creation of even more green spaces and greener buildings, leading to cleaner air, more physical activity, natural insulation of homes, carbon sequestration, local food production, increased biodiversity and ultimately, a time with more social cohesion and healthier and happier people. By never losing focus of people's health, function and physical activity, it reminds us that it might not be wholesale change that is at stake, but that a broadening of our professional identity, roles and responsibilities could contribute more broadly than we have thought so far.



From an explosion to the stabilisation of population numbers

It is easy to look back on history from where I sit in the year 2150. It is also necessary to do so, because history explains many of the great challenges we have been through the last centuries. Humans began to cultivate land around 10,000 BC. The change in society was great, and we were then about 2 million people on our planet. At

the same time, we still lived close to nature. The first cities began to emerge about 4,000 years later. From the year 1700, population growth increased exponentially. Industrialisation led to further increase in urbanisation, and from the year 1700, when we were just under 600 million people, population growth increased by 7 times until the

1990s so that we were 7 billion people in 2011. In the year 2100, we passed 11 billion people on earth. After this, the population has remained relatively stable, and today we count just under 11.1 billion.

We still have some migration, but these are low and predictable numbers of people. Virtually all migration is voluntary, because poverty and social and political unrest have been virtually eradicated. The birth rate worldwide has also stabilised, and in the last 20 years has fluctuated between 1.9 and 2.1 children per woman. For many decades, there was a concern regarding

“**THE FACT THAT WE INCLUDED PEOPLE WITH DEGREES AND CLEAR VOICES IN SCIENCE AND HEALTH INTO URBAN PLANNING HAS HAD AN IMPACT ON WHY OUR CITIES LOOK AS THEY DO TODAY. NOW IT IS NOT ONLY REQUIRED BY LAW, BUT IT HAS BECOME NATURAL TO THINK ABOUT NATURE AND CLIMATE IN URBAN PLANNING. THIS HAS GIVEN GOOD RESULTS, BOTH LOCALLY AND GLOBALLY.**

an ageing population. Targeted work has now ensured good physical and mental health, and technological advances contribute to us living longer and healthier lives. For the oldest in the population, the breakthrough in dementia and Alzheimer's research in the year 2045 was essential. This breakthrough, together with generally better medical treatment and technology, has facilitated and prolonged self-management for the elderly. The improvement of the elderly's physical environment has been an additional contributing factor to good health. In 2020, life expectancy for men and women was 79 years and 83 years, respectively. In 2100, life expectancy was increased to 92 years for men and 93 years for women, while today life expectancy is 96 years for both women and men. The retirement age is also constantly increasing, and as of today the retirement age is 78 years, but many remain employed even longer than this. Just imagine how incredible it is that the current retirement age is close to life expectancy for men in 2020.

Our green and blue cities

Stable population numbers have been essential to building and developing structurally good cities where the needs of inhabitants are covered for. In 2050, 70 percent of the global population lived in urban areas, today, 100 years later, 88 percent of the population are living in cities. The opinions of the health and environmental sectors were increasingly emphasised in the Planning and Building Act in 2034. The fact that

we have included people with degrees and clear voices in science and health into urban planning has had an impact on why our cities look as they do today. Now it is not only required by law, but it has become natural to think about nature and climate in urban planning. This has given good results, both locally and globally.

Within the energy sector, all fossil fuels have been phased out, and new energy comes exclusively from renewable resources. Smart buildings use little energy and are also responsible for energy production. For example, all windows and roof panels now function as solar panels. Our buildings are now self-sufficient in electricity, before the surplus energy is included in a common energy warehouse that supplies the city's infrastructure and common areas with clean and renewable energy. Cars, boats and public transport are fully electric, and within the urban zones a separate network for underground transport has been developed to reduce air and noise pollution and increase safety. This has given us opportunities to move more freely in the urban environment itself. Where there used to be roads, these have been reduced to narrow dedicated cycle paths, and the rest of the area has been taken over by green corridors and parks. Old river paths that were redirected into pipes and down into the ground have now been opened up and brought to light again. The sound of small rivers and streams is heard in urban environments again.

It is not only the networks between the buildings that have become green, but

the city's buildings have also become physically green. Although concrete, steel and wood are still used in the construction itself, the production of these materials is free of pollution and wear and tear on the climate and environment. In addition, the buildings' cladding is organic. Here, local native vegetation is used as positive sensory stimuli, and they simultaneously

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function as the city's green lungs. The vegetation on our cladding forms the basis for extensive biodiversity. It also stores carbon, reduces noise-levels, and has a cooling effect and offers shade on the hottest summer days and natural insulation on the coldest winter nights.

It is really a positive effect that biodiversity has increased so significantly. 150 years ago, it was critical for the population of pollinators worldwide. In the cities, small trials and projects were started where beekeepers placed beehives on roofs, in parks and on roundabouts. Today, they have become a common sight in the urban environment. The decline in pollution and the increase in green areas led to both the domesticated and wild pollinators

gaining a foothold again, and today we have healthy populations of insects that help to keep the city and the surrounding areas green and lush. Larger municipal gardens have been given space in the various districts. Here, communities gather for growing vegetables and plants, socialising and fellowship. Municipal gardens, parks, safe play areas and activity opportunities have created social areas for people of all ages.

The green transition and the stabilisation of population growth gave us the opportunity and time for positive change in society. The high pace, the constant race and pressure that were previously characteristic of life in the cities have changed to what can better be described as collaboration at a safe and steady steady pace. Nature, which is definitely a part of our surroundings, now also in the cities, invites us out but also in, as a natural part of biodiversity. This has contributed significantly to the improvements we have seen in urban health.

Previously major stressors in cities such as air pollution and noise have been reduced. The green areas, corridors and facilities have given us healthier movement patterns. Very few own or use private transport, there is an increase in the use of public transport, many report the use of bicycles as a means of transport and even more just walk. We are seeing a significant increase in the proportion of people who use the specifically adapted green areas and the social arenas for interaction for both children and the elderly, which has resulted in a

decrease in loneliness and depression, among other things. With nature as a backdrop, increased physical activity, improvement of social factors, play and social cohesion, and the opportunity for relaxation and recovery, have contributed to both mental and physical health in urban areas today being good and constantly improving. From shifting nature to make room for us, we have now chosen to wrap ourselves in it like a blanket on cold winter days. By doing this we have really found the place we need.

Development of the physiotherapy profession

The physiotherapy profession has always had body and movement in its focus for good health. Previously, this was only the physical body, but gradually the mental part, social factors and the human external environment have also become important to physiotherapists. The whole person should be seen as a holistic unit in interaction with their surroundings, a holistic approach to good health. The profession has developed. Physiotherapy is a flexible profession that is constantly adapting to human needs, and humanity is constantly facing new challenges, which, in turn, create societal changes. Examples of such societal factors have been war and the aftermath of this in the 1940s, the consequences of viral diseases such as polio until the 1950s and covid-19 in the 2020s. We have been through a 21st century with an increase in lung disease, cancer, obesity, cardiovascular disease and an aging population until the 2060s, through constant medical

revolutions and finally the green transition in more modern times.

Treatment approaches within the health professions were previously targeted at specific patient groups and individually oriented measures. Although this is still important today, the focus gradually shifted to preventative measures at the end of the 20th century, and the education for 'society and nature' from 2020 onwards. Previous health prevention projects are now an integral part of the teaching offered throughout all years of education, even in upper secondary school where public health and general life skills are an integral part of all subjects in school. Here, too, physiotherapists have been part of interdisciplinary groups to adapt the didactic content of public health and life skills. Although climate and the environment were also on the agenda as early as the 20th century, it was not until the 2000s that they became a recognised factor for health. Climate and environment become standard subjects in health education in the 2020s, but it was only recognised in 2030 that the declining worldwide public health was only a symptom of nature's health, and that it was only by focusing on this disease that the symptoms could disappear. This was the beginning of what we know today as the truly holistic approach to good health.

The increases in knowledge and preventative health work have worked well. This is especially visible in patient groups with what we previously called lifestyle diseases. Patients with obesity

problems, type 2 diabetes, heart and lung problems are only a very small group today, compared to the peak we had in the year 2069. Nevertheless, we must not forget the identity of physiotherapy, because even though society has changed, the population has stabilised, and we have a society that takes care of more and more people in better health, physiotherapy is still concerned with the body and movement to ensure good function in the musculoskeletal system. Health clinics still work with individual treatment and with different patient groups, but today the largest patient group are those who need training after various types of physical and mental trauma and acute injuries. In conjunction with that, we also have a large field in neurology and prosthetic technology.

Population numbers have stabilised, we have found balance in age distribution, we are producing ever cleaner and better food, and changes in climate are now pointing in the right direction. Our cities are designed for good mental health and physical activity, we can walk out the door at home to immediately experience nature outside. We can hug a tree, smell grass, taste berries from common gardens, and listen to pollinators and bird life all around. We physiotherapists use this actively in our preventative work - both individually oriented, and as formal participants in urban planning - for closeness to nature and movement makes people lighter at heart and getting out the door is so much more enjoyable than it was in the last century. Individuals have become

better at seeing and utilizing their own resources and the socio-economic benefit of good health and good prevention has been enormous. We have more free time, and thus also more time for our own health, and we physiotherapists can finally work more preventatively, which is in the best interests of both society and individuals.

The short but very important thought about the path toward 2200

When we know what the situation has been like, which mechanisms have been the problem, and how our world looks today, it should be easier to set a course for the future. History has taught us that working to promote the positive link between people and planet as a natural entity is essential for good health at the local and global levels for all biodiversity, humans included. With this in

mind, we as physiotherapists must continue to develop both our profession and the environment and help stake out the course for health-promotion for the next 50 years. We are now looking toward the year 2200, let's keep moving.

THE LUNGS OF THE WORLD

Theresa Sophia Becker, Bachelor program in physiotherapy, Institute for Health and Care Sciences, UiT The Arctic University of Norway.

‘The Lungs of the World’ begins by questioning the values and actions that led to a world in which deforestation, carbon emissions, greed, the misuse of and the pursuit of profit that have worsened air pollution even more than Leaving these behind, the story describes a global shift in values towards collaboration and genuine care for human, plant and animal life alike. ‘The Lungs of the World’ reminds us that environmental problems will affect the health and wellbeing of healthcare professionals and patients alike, and so require us to work together beyond these boundaries. In this story, understanding and celebrating the intertwined relationships between all people, anatomy, physiology, today’s social and environmental problems, seems to release a new energy, creativity and novel opportunities. It feels as though thinking and acting at much larger scales than the individual body enables dealing with well-known problems in entirely new ways and doing so with a strong sense of purpose and meaning.



I'm tired. It's early in the morning. I walk out of my room and down to the breakfast table where my colleagues are sitting and eating. As usual, fruit and vegetables are on the menu. There are so many different, good fruits. Sweet, sour, bitter, all of them refreshing and I really look forward to eating my fruits. I sit down with the others and the morning meeting is underway. Our boss goes through today's plan. We are 10,000 people divided into two groups of about 5,000

people each today and which, in turn, are divided into smaller groups. The two main groups are animals and plants, and I am placed in the plant group. Our job is to plant and protect the diverse plant life in the Amazon rainforest.

This project began in the year 2090. Now that the year is 2120, the project has its 30th anniversary. During these 30 years, a lot has happened in the rainforest. It all started with the whole

world gathering and having to take action. The world was a gloomy place, where there was no clean and fresh air left to breathe.

Let me take you back to the year 2085. The year the rainforest was gone, the year in which the last square kilometers of untouched forest had been destroyed or completely deforested. Thanks to world politics and greedy people fighting to have the most power and wealth. But what does power and money really mean when the earth we all live on is dying? Right, absolutely nothing. Fortunately, there was a group of people who realised this and took action. They built secret plantations where animals and plant life from the rainforest could live protected, and thus not be killed or illegally sold by humans. Many of the people who

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started the project were researchers who studied how to preserve different plant species and animals, so that they could hopefully one day help to rebuild the rainforest's diverse and lush plant and animal life. You could almost say that the scientists were the Noah's ark of that time. But instead of building a huge ship, they built an enormous plantation.

When the end of the world was not far away, these scientists managed to gather the people of the world to a huge voluntary service, to save the planet. The plan that was made and is still followed to this day is to replant and rebuild the forest. This of course takes its time, and the plan is to replant one area at a time. In the selected area, the plants and animals must be left alone for at least 10 years before you see the first results of a lush landscape. From area number 1, you then take plant seeds and animals that will build up area number 2. This area will then be left in peace for 10 years. This has given good results, and now this project has already been going on for 30 years, and you can really see the results and changes in our global condition now.

On the way into the rainforest, I hear the birds chirping in the three foreclosed areas that are now growing. Last week we collected seeds and plants from the three areas that we will now plant in area no. 4. After an hour's walk into the rainforest, I hear the first sounds of water. The further we walk, the louder the sound, and the more humid the air. Today, the task is to plant

seeds and plants that belong around the riverbank. I'm looking forward to it and am ready to start planting.

Phew, now I'm tired, tired and hungry. Seven hours of planting went by quickly. We are on our way back to camp to eat and relax for the rest of the evening. Despite the long working day, I feel really good. The thought that I have done something useful for the whole world today, even though it was nothing big, feels good. I love that my job as a physiotherapist is to help change the health of many people. Many years ago, it was most common for physiotherapists to look at an individual's problems. This is still common in today but is called "traditional physiotherapy". I, and many of my colleagues, have chosen another direction in physiotherapy, namely "public health". Public health is concerned with larger, societal health problems. One of the health problems is, among other things, that many people struggle with breathing due to polluted air and we have seen an increase in various lung diseases.

As we breathe dirty air into our lungs, it leads to health problems that affect people all over the world, and even the animals. My job as a physiotherapist is to try to make the air cleaner again. This in turn leads to fewer people struggling with their lungs and living a healthier life, where they can be both active and out in nature. If we really think about it, we actually use our lungs for everything. As soon as we come into the world, it is critical that our lungs function properly. The lungs allow us to

breathe in oxygen, which we need for many processes in the body, at the same time as they remove waste products such as carbon dioxide from the body. When we are back at the camp, we sit down at the dinner table. Everyone is hungry after the long working day. The rest of the day I spend relaxing, talking to friends and calling home to family before finally falling asleep as soon as my head touches my pillow.

The alarm goes off, the birds are chirping, and I am ready for a new and meaningful day. Many of my bosses are researchers and think it is important to research new methods and technologies that can improve the world in a sustainable way. Today we will have a workshop to find new ideas on how we can rebuild the rainforest faster and more efficiently. We discuss in groups, draw and write. No idea is considered stupid, and this makes us all feel confident about being creative. If you think about it, it is precisely creativity that got us humans from so-called cave dwellers to where we are today. Creativity has created a lot of negative things in the world, such as pollution, but it has also created hope that we can find a way out of pollution and littering that creates new ideas and new jobs.

The fact that the physiotherapy profession and many others are evolving creates new jobs, such that new people can have a place to be creative and perhaps change the world a little. My workplace is new. Not many physiotherapists have worked in nature to improve human health. A couple of

generations before me, physiotherapists only sat and talked to individuals about how important it was to be out in nature, at the same time as therapists themselves were inside for seven hours and stared at the same four white walls. The physiotherapist should be a role model and an inspiration for the fact that being out in nature and taking care of it, may make you feel a little better, so my job means a lot to me. I hope that by being outside and caring about the climate, I can pass this on to other people and other generations who will take care of our wonderful planet.

My workplace has even more advantages, as, in addition to being outdoors, active, and doing something meaningful, it is also social. It is good to be able to be with such positive and hopeful people every day, even if the sun does not shine every day, the people around me always shine. They give me energy, and I would even say its some kind of therapy for me, even though I am the physiotherapist who really should provide the therapy. Being out, doing something that feels right for me, being able to be social with those around me, and in addition, calling this my job, helps me a lot mentally.

When the world leaders finally realised that we had to do something about the rainforest, there were lots of different ideas from different groups and organizations on how we could save it. It was recognized that it was necessary to work in close partnership with indigenous people who had the rainforest as their home, since they

know most about the plants and animals that live in the rainforest and have taken care of them for a long time. Now they have worked closely with researchers from many different countries for many years to restore and build up the rainforest in a fast and sustainable way, so that the next generations can live in peace in the rainforest again.

“**MY GOAL AS A PHYSIOTHERAPIST, AND THE GOAL ALL OTHER PHYSIOTHERAPISTS BEFORE ME HAVE HAD WILL ALWAYS BE THE SAME. TO IMPROVE AND PROMOTE THE HEALTH OF PEOPLE. TO DO THIS, ONE HAS TO THINK BIG...**

The physiotherapy profession has developed enormously for several generations now. From just seeing an individual's ailments to focusing on public health. The whole world has helped to collaborate and create new jobs that improve our environment and creative thinking. A collaboration like this clearly shows that everything in the world is connected, and when you affect something like the rainforest, we affect a hundred different things such as animals, plants, indigenous people and, not least, health.

My goal as a physiotherapist, and the goal all other physiotherapists before me have had will always be the same. To improve and promote the health of people. To do this one has to think big, and that's why I and many others started with the lungs of the world.

LIFE UNDER DOMES

Oda Molden, Bachelor program in physiotherapy, Institute for Health and Care Sciences, UiT The Arctic University of Norway.

'Life under domes' is set in a futuristic world after considerable further destruction has led to inhospitable, unstable weather conditions. While this pushed human, animal and plant life into new urban settings inside domes are safe for living, there seems to be a positive and hopefully energy contained within these domes. Technology is highly advanced and humans, robots, and artificial intelligence seem to live and work peacefully side-by-side, ensuring healthy ecosystems, fostering biodiversity, and good mental and physical health alike. Building domes and a variety of ecosystems within them becomes a healthcare intervention in itself, as it provides shelter and rehabilitative spaces for humans, plants and animals. In its exploration of new tasks for both well-established and new reasons, 'Life under domes' transports a sense that future societies cannot repeat what has happened 'out there' before. To have good health, the environmental must be protected wherever we are.



It's an entirely normal day. The year is 2139. The sun shines in the window and fills the room with a warm and lovely colour. Cathrine wakes up and stretches in bed. She gets up slowly as she tries to rub the sleep out of her eyes. She sticks her feet into the furry, pink slippers that stand below the bed and reaches for the grey dressing gown that wraps around you like a big blanket. Then she wanders out of the room and into the kitchen. As she enters the kitchen, she mumbles, "a cup of black coffee," walks to the kitchen counter and leans against it. With tired eyes she sees that the machine puts out a cup

and starts brewing. The black coffee begins to fill the cup and an artificial smell spreads in the room.

After only a few seconds, she hears a cheerful little melody that signals that her coffee is ready. She grimaces a little smile as she puts her lips to the cup - she just can't get completely used to the artificial taste. Coffee is now a commodity that is almost impossible to obtain. This is because global warming over the last hundred years has caused the climate to change drastically. It has become warmer and wetter, and the coffee bushes are unable to live in too

hot a climate, which has led to coffee now being in short supply. Cathrine got to taste coffee when she was younger, while she now only ever gets artificial coffee. Only the very richest in society now have the money and resources to get real coffee.

Cathrine takes the steaming hot cup with her and sits down in the armchair in the living room. Here she has large panoramic windows that open up to a completely unique view. Just now, the sun is shining, and it is almost completely cloudless, but she knows that this can change quickly. Due to climate change in the last hundred years, the weather has now become extremely changeable, such that it can go from relatively high temperatures to low temperatures very quickly. Cathrine takes another sip of coffee before calling out into the room: "Aurora, get the weather forecast and temperature for today." "Right away", you hear a soft female voice answer. "The weather for today starts with sun and 17 degrees, but in the afternoon, it will be cloudy, rain, strong wind and as low as 4 degrees. At night, the temperature will drop to -7 and it will freeze", says the female voice into the room.

Cathrine sighs quietly to herself as she replies, "Thank you. Turn on the water purifier, please, and prepare a shower". Not everyone has access to clean water anymore, but machines have been invented that can purify and reuse the water that comes down in the frequent, large storms. She puts her coffee cup on the kitchen counter and then wanders into the bathroom. The digital

clock that hangs on the wall shows the numbers 07:45 as she wanders past. She realises that she has spent a little longer than usual and is starting to to run a little later. "Aurora, put out a new uniform, socks and underwear for me, please," says Cathrine as she enters the bathroom to undress. "Right away," a voice replies from within the house. Cathrine smiles to herself and goes into the shower.

Exactly 15 minutes later, Cathrine is ready to dress and comb out the tangles in her wet hair. When she's done, she quickly brushes her teeth and grins at herself in the mirror before picking up a bag and going out the door. On the way out the door she shouts: "Aurora, please lock up for me, I'm going to work!". The door closes and you hear it lock. Cathrine presses the bracelet around her wrist and a digital screen appears that lights up at 08:05. "Damn!" She hisses. "Too late for work - again!", she says to herself as she jumps on her jet board parked downstairs and whizzes down the road.

Cathrine jumps off the board and runs the last few meters into the dome. There she scans her fingerprints and iris before a green light comes up around the door and it opens. Cathrine hurries into the office. "Hectic morning?", asks one of her colleagues called Finn. She replies breathlessly, "Sorry, I promise I'll work overtime today!" as she throws her bag on the table. "You know we have a lot to do today, new trees are to be planted down on the east side and we are almost done with the new domes at the center," says Finn, as he

looks at her over his big glasses. “Yes, I know, I’ll get there right away,” says Catherine as she puts her hair up in a ponytail.

Cathrine works as a physiotherapist and has worked as one for 10 years now. Her day is varied, and she does a lot of different things, but she mostly works with the domes, where most of her days are spent. Due to the varying weather and temperatures, there are no longer any places that have a stable temperature or climate that is not too hot or too cold and more and more people are struggling with arthritis. Therefore, physiotherapists (along with other professions) have now built domes where they plant trees and create their own small ecosystems with a good, stable temperature. There are also animals in these domes for the ecosystems to be complete. The domes function both as a place of residence and a place of treatment. There are more and more people who can’t handle the big weather differences, so there are hundreds of domes in many different sizes and with different purposes.

In the largest domes where people live most of the time, Cathrine and the others work to keep the temperature stable, plant trees and take care of grass, plants, flowers, and create a kind of artificial sun so that both people and plants can live well in there. In other domes, more focus has been placed on wildlife, and they work to create forests so that there are different ecosystems that can become so large that they may eventually lead to a larger animal and plant life outside the domain as well.

“**THERE HAS BEEN A BIG PROBLEM WITH MORE AND MORE PEOPLE BEING INACTIVE DUE TO NEW TECHNOLOGIES AND FEW PHYSICALLY ACTIVE JOBS. THOSE WHO ARE ACTIVE USUALLY TRAIN INDOORS AND DO NOT OFTEN VENTURE OUT DUE TO THE CHANGING WEATHER. THE PLAN IS THEREFORE TO MAKE A DOME WITH A LOT OF TREES AND OTHER PLANTS SO THAT IT BECOMES A KIND OF “OUTDOOR” EXERCISE PARK – YET WITHOUT BEING COMPLETELY OUTDOORS!**”

Here, the breeding of different animal species and close monitoring of the animal population are taking place to ensure the best possible conditions for their lives and the creation of a rich diversity of animals. The new domes down by the center are where Cathrine will spend her day today.

Cathrine has already jumped on her jet board again and rushed down to the center. She drives to the parking lot and jumps off the board while grabbing one side of it and lifting it up under her arm.

Row after row there are parking spaces for different jet boards. They are similar to old bicycle parking spaces but designed so that you can place your board vertically. Cathrine puts down the board in one of the vacant slots, and it is locked with her fingerprint. She glances at the gigantic structure in front of her. "OMG, this is going to be good," she says to herself, feeling a big grin on her face as she approaches the entrance.

This dome is extra special to Cathrine. Not only because she is one of those who have the main responsibility for organising, building, planting and monitoring, but because it is built for a purpose that is close to her heart. The purpose of the dome is to strengthen both the physical and mental health of the population in the city. There has been a big problem with more and more people being inactive due to new technologies and few physically active jobs. Those who are active usually train indoors and do not often venture out due to the changing weather. The plan is therefore to make a dome with a lot of trees and other plants so that it becomes a kind of "outdoor" exercise park – yet without being completely outdoors! In addition, it will provide more habitat for animals and insects that help to create a good climate. This will then help to improve general physical, but also mental health of the population. Being able to have access to nature, being able to be physically active and interact with animals and humans will help to improve mental health very much.

Cathrine enters the dome, and it is already full of both humans and robots building, planting, carrying and seeding. She sees that there is not much left on the construction of the dome itself and that a lot of plants and trees have already arrived. Fortunately, they have created a wonder mix for trees and plants to grow super-fast so

“**HEY, CATHRINE! FINALLY, YOU ARE HERE! WE NEED HELP TO PLANT THE LAST TREES ON THE OTHER SIDE OF THE DOME!**”, A COLLEAGUE SHOUTS A FEW METERS AWAY. **“I’M COMING!”**, CATHERINE SHOUTS BACK AS SHE TAKES ONE LAST LOOK AROUND HER BEFORE TURNING AROUND AND JOGGING FURTHER INTO THE DOME. IN JUST A FEW SECONDS, SHE DISAPPEARS INTO THE JUMBLE OF VOICES, HUMANS, ROBOTS AND NATURE.

that it does not take long to get the environment inside the dome finished. Once inside the dome, it feels like Cathrine is on a giant construction site. There is one large hum resulting from all

the voices that speak at the same time and the building, hammering, cutting and transportation being done around everyone. Cathrine rests her hands and takes some time to just look around and take in all these impressions. She is so looking forward to this whole room being filled with birdsong.

"Hey, Cathrine! Finally, you are here! We need help to plant the last trees on the other side of the dome!", a colleague shouts a few meters away. "I'm

coming!", Catherine shouts back as she takes one last look around her before turning around and jogging further into the dome. In just a few seconds, she disappears into the jumble of voices, humans, robots and nature.

CIRCLES

Sigrid Johanne Anmarkrud, Bachelor program in physiotherapy, Institute for Health and Care Sciences, UiT The Arctic University of Norway.

‘Circles’ takes us on a phantasy tour de force and into deep connection with earth under our feet while, at the same time, being a prime example of creativity and imagination. In this story, future physiotherapists in the high collect reindeer manure to support the growth of plants that can help reduce mercury pollution – a very real and longstanding problem in the Arctic. Once again, this is a story about how collaboration and curiosity can turn bad conditions to the better and open us up to new opportunities and entirely new tasks. And in the exploration of these new tasks, the digging of manure and joy of touching the earth with our hands, ‘Circles’ also reminds us that every little action has an effect on everything else and can be a meaningful contribution to healthier and more sustainable futures, no matter how distant, small or strange it might seem.



It is cold. The snow has been falling all night and now lies over the landscape like a blanket of soft, fine wool. Just the way it should be. She turns away from the window, takes the coffee cup with her on the way out to the hallway, where she puts on her suit, thick hat and winter shoes. She takes one last sip of coffee, and puts the cup down on the dresser, before she opens the door and steps into the white. It smells of clear, cold air and winter landscape. She is always a little overwhelmed when it hits her like this in the morning and feels when her lungs can finally take in the freshness again. The snow crackles under her shoes as she crosses the farm

on her way to the yard. You can virtually hear the sound of several degrees below zero. There will probably be some long working days ahead. Previously, she would have been exhausted just at the thought, but here, long working days mean shared frustrations, sparkling enthusiasm, bad jokes, exhausted yet content bodies, increasing solidarity, and this feeling of being an indispensable piece in the Greater Whole.

She meets the others in the equipment room, where someone has already started to prepare the sleds. They spread across into the different areas. The ice

layer from last week is probably still in the heart of the valley, so they will have to bring a little extra feed for the reindeer even today. Climate change and the restoration of balance in nature are not done in a jiffy - although winter certainly came back quickly when they finally managed to affect the ocean currents.

“**THERE HAS BEEN A BIG PROBLEM WITH MORE AND MORE PEOPLE BEING INACTIVE DUE TO NEW TECHNOLOGIES AND FEW PHYSICALLY ACTIVE JOBS. THOSE WHO ARE ACTIVE USUALLY TRAIN INDOORS AND DO NOT OFTEN VENTURE OUT DUE TO THE CHANGING WEATHER. THE PLAN IS THEREFORE TO MAKE A DOME WITH A LOT OF TREES AND OTHER PLANTS SO THAT IT BECOMES A KIND OF "OUTDOOR" EXERCISE PARK - YET WITHOUT BEING COMPLETELY OUTDOORS!**

She can still remember the first time she came ashore here after the Plantation was set up. It was admittedly only a vague childhood memory and grandmother's

stories she had as a basis for comparison; but that only a few years earlier palms and banana trees had grown here seemed completely unthinkable - she came to a stand and stared.

The reindeer have taken shelter for a rest. Exhausted after an unsuccessful hunt for food down under the ice layer. They spread the feed out a little further away, and the animals push up on their legs as they lurch towards the breakfast table. The fresh snow means that they have to spend a little extra time digging out all the dirt. But it's nice to work together like that and with the whole body as a tool. This is a rather gratifying hunt. She smiles a little; the reindeer seem to thrive. It has gradually become a nice, small herd of strong animals. But it has taken time to build it up. Patience. Patience, hope for the future and purposeful work. The words of the century if you had to ask her. Or cooperation and interdependence. These small circles of life, which together create the great circle. Sometimes she has to remind herself of this; that their small circle here at the end of the world is in fact an important piece in the Greater Whole.

They bring the manure into the hall; not very large quantities today, but it helps. After a short break out in the sun, she and a couple of the others go to the plants. It seems that the plant has done its job; only a millimeter of white covers the earth. And that is just right for them. A purple tinge in the petals; it seems that the snow has brought something with it from the south. Good. It is the mercury that gives them this distinctive colour, before it

eventually disappears again as the plants absorb it, transforming the toxin into this unique combination of molecules. It is hard to imagine that such a dangerous substance can create such a beautiful colour.

She still has to think of Grandpa every time she walks here among the plants and their purple shine. His choppy movements, and the violent spasms in his neck. When she was little, she had thought he was scary. He could not speak either; only grandmother understood what the strange bursts of sound meant. It took a while before she realised that Grandpa had not always been like that; that something had entered him that had destroyed something. Then she cried. Crying for the grandfather she would never get to know. It was also when she had decided that she wanted to help others like her grandfather; help them struggle less with movements, reduce the violent spasms in their neck, talk without such bursts. And here she was. The soil in the test tube shimmers faintly purple as a ray of sunlight hits it. So it's what she thought: a fairly large field must have passed in the night. Well. Ash over in the lab will be delighted. Maybe they can start a new round today.

It had all been a coincidence. When a plant had been discovered a few decades earlier in the areas where the cold had just begun to return - a plant that changed colour with the amount of mercury in the precipitation - a handful of dedicated researchers insisted that this had to be investigated further. On their own, they had set up a plantation and a research center here at the end of

the world. Their assumptions had proven true; the plant converted the toxic metal into harmless molecules that were easily absorbed into the soil and contributed to increased moisture. However, the growth conditions in this area had not been ideal. The plant thrived best in the cold - yes, but the soil in the cold regions was still no good.

It was around this time that the first reindeer appeared. A lean and staggering herd of a total of five animals. Until then, this animal had been considered extinct - something it almost was, but the researchers quickly decided to intervene, and soon it looked much brighter for the small population. Without thinking about it, they used the reindeer manure as fertiliser for the plants. And it was here that the happy coincidence had first materialised.

She finds the others in the kitchen after delivering the sample to Ash. The sun lights up the room, while everything is sprouting in the food garden. She pulls up a carrot, grabs a cup of coffee and settles down in the corner. This is definitely the best seat around the table. From here she has a view both to the mountains in the north and down toward the plantation. To the left of the windows there is also a picture of the first time it happened.

It had become apparent that, with at a particularly high concentration of mercury, the soil around the plants reacted with the manure from the reindeer, and tiny spheres fell out. To take these

spheres to the lab and put them under a microscope, had admittedly seemed almost banal, like researching something a child might have found in a sandbox. Fortunately, researchers are often of the curious kind, and these were no exception. Curious and patient.

“HEY, CATHRINE! FINALLY, YOU ARE HERE! WE NEED HELP TO PLANT THE LAST TREES ON THE OTHER SIDE OF THE DOME!”, A COLLEAGUE SHOUTS A FEW METERS AWAY. “I’M COMING!”, CATHERINE SHOUTS BACK AS SHE TAKES ONE LAST LOOK AROUND HER BEFORE TURNING AROUND AND JOGGING FURTHER INTO THE DOME. IN JUST A FEW SECONDS, SHE DISAPPEARS INTO THE JUMBLE OF VOICES, HUMANS, ROBOTS AND NATURE.

Ash strolls into the kitchen with a huge grin on his face. He says that the concentration is far above high enough, and that they can start as soon as they have finished eating. It is important that they do not wait too long, to prevent

the concentration from falling again. They also have enough manure in stock to produce a sizeable amount. It is certainly a painstaking job. Several of her friends in the south started laughing when she first told what her job up here would be; that she should stand and dig in the soil and manure. Why couldn't the automatic machines take care of this too, as they did with everything else? Of course, they could have done it, and they had done it at some point. It was just that the quality of the spheres had dropped when they did; the material had changed properties. It seemed that contact with human skin was of crucial importance for the fusion process and the product. Besides, it had to happen up here. The whole small circle had to happen in the same place. A suggestion for fragmentation of the process had once been made, but it didn't work out in the end. The soil from the plants had to be fresh.

The cold soil pressing against the fingers. They collect it in buckets which they then put on the sledges, while taking care to replenish with new soil, so that the plants can continue where they left off. The sledges are then driven into the hall, where the manure is released from the warehouse and mixed with the soil. Twenty minutes, and then they can pick out the spheres. The spheres are then placed in trays, which are further transported to the fridge. Here they will once again rest for twenty minutes, before they are finally merged into blocks that are ready for further transport.

She picks up one of the finished blocks. It weighs barely a kilo, but soon it may

cover a large hospital's need for sterile "disposable items". The fabric has properties such as plastic: low weight and good durability. In addition, it has a self-cleansing effect, and perhaps best of all, it breaks down easily and quickly to safe soil after being used. She knows that what they are doing here is currently small-scale, but for being a side effect of the work to help those like her

grandfather, she thinks that they have already come a long way. In the near future, the cold will also move a little further south, and new plantations can be created. Patience, hope for the future and purposeful work. And then the circles. The circle. She smiles.

THE MELTING POLAR ICE

Erika Jorunnsdatter Ingilæ, Bachelor program in physiotherapy, Institute for Health and Care Sciences, UiT The Arctic University of Norway.

‘The melting polar ice’ throws the reader right in the middle of what feels like a great voyage and great adventure. Ongoing global environmental degradation has dramatically increased the melting of permafrost and polar ice caps with troublesome effects for life and health all around. There is a sense of anxiety that comes with recognising the responsibilities with becoming a healthcare professional today, but also a newfound courage in taking them on. In the midst of all these troubles, hope wells up as awareness leads to action and collaboration across any conceivable boundary. Innovative technologies, indigenous leadership and healthcare professionals come together to work towards fantastic solutions with benefits for people and planet alike. Quite powerfully, ‘The melting polar ice’ expresses the sense of purpose that comes with working toward long-term visions and care for the future, working not only for the present, but also the health of future generations that depend on a healthy environment. Enjoy the ride.



The silence has finally subsided, both over the ship and the sea. After the thunderous roars of the night's storm, it is as if someone has turned down the volume to the lowest level. The rumble of running legs down the hallways, the clinking of glass in cupboards, and the clicking of locked doors, it feels so far away. I marvel every morning at how great the contrasts are from the storms of the nights to the quiet, immovable world of the days. In the mornings it is just as if the corridors have never seen or heard a human being, and if a tired soul stumbles through the corridors of

their cabin, the steps are absorbed by the walls. And if that exhausted soul looked out of the window before collapsing on the bed, the mirror-bright sea would sparkle back a glorious morning greeting that would make anyone believe that misery did not exist on earth. But we all know that is not true. For it is precisely the fact that being able to see the blue sea wherever you turn, as far north as we are now, that is one of the reasons for the misery of today's many societies. The storms that appear every night are, among other things, a consequence of the

endless blue. I often think about how it was in the past. Before the polar ice melted, before the land ice melted, when polar bears and bowhead whales could be observed in real life, and not just in books. Being a polar explorer now cannot be compared to being a polar explorer before.

When Fridtjof Nansen started his voyage from Oslo in 1893 in the hope of reaching the North Pole, the strategy was to let the ship, Fram, freeze in the ice north of Siberia. Based on his calculations, they would be carried along by the ice that was constantly moving, towards Greenland, where they would hopefully pass the North Pole on the road. Nansen and lieutenant Hjalmar Johansen left the ship at some point to continue skiing and dog sledding. I would give a lot to be able to ski today. Give a lot to have the same physical and mental conditions to make such an expedition. But those conditions disappeared along with the ice. For air pollution not only meant that the ocean had to absorb more CO₂ to compensate for the concentration differences to the atmosphere, but also led to poorer air quality for us to breathe. Over time with poor air quality, overall population health got worse and worse. The statistics are clear. More environmental changes as a result of global warming have a negative effect on people's health.

There is much that is different about exploring the Arctic then and now, both in terms of what it looks like, the procedure, and the purpose of it. Today the ice is completely gone. Not even a

small piece for an iced coffee. If I am to look at it from the positive side (if there should be one), it gives us the opportunity to sail all over the Arctic without having to worry about when we will freeze in the ice.

“**WITH AWARENESS COMES NEW MOTIVATION AND ACTION. AND AWARENESS AND NEW MOTIVATION ARE THE REASON I DO WHAT I DO TODAY. NOT TO MENTION, IT FEELS SATISFYING TO WORK TO IMPROVE THE ENVIRONMENT AND KNOW THAT THIS WILL IMPROVE PUBLIC HEALTH, WHICH IN TURN AFFECTS INDIVIDUAL HEALTH POSITIVELY.**”

Not that it is all wonderful without the polar ice, on the contrary. Because being a polar explorer today is about saving the world. Literally. Without exaggeration. Talk about putting pressure on yourself when choosing a profession. Although the importance and seriousness of my profession scares me, the consequences of no one taking the job are even more frightening. In addition, the curiosity to work with an

alternative polar ice has been burning ever since I talked to my great-grandmother for hours as a child. She would tell me about how the physiotherapy profession has changed from working on individual's health, to improving individual health by improving public health on the whole. What seems a matter of course today, that the economy, the education you take, and not least climate change, affect public health, was an innovative idea in great-grandmother's childhood. It is a small positive, that the awareness of, among other things, social inequality in health, has grown at the same time as climate change has become worse and worse. With awareness comes new motivation and action. And awareness and new motivation are the reason I do what I do today. Not to mention, it feels satisfying to work to improve the environment and know that this will improve public health, which in turn affects individual health positively.

After a few hours of sleep, the ship begins to come to life again. We are a groggy bunch strolling towards the breakfast hall. A collective sense of exhaustion dominates the room. Still, it's amazing how motivation rises when it counts, even with little sleep. Maybe it is the hope that we will soon arrive that driving us, and maybe just the incredible raw breakfast we are served. Like much else on the ship, the food we eat is also produced in a sustainable way. It is produced locally, on the boat, with a focus on using plants that have previously been threatened with extinction due to climate change. The

idea is to replant them to the areas where they previously grew after the climate interventions have stabilised the environment on earth. This project has also helped to create much-needed jobs where there has previously been high unemployment around the world. And we all know how unemployment functions like poison to good health. The knowledge indigenous peoples have of how to be in tune with nature is precisely the knowledge that is essential in this and many other areas. People with indigenous backgrounds from all over the world therefore often lead such projects and work sessions. This has taught many to work more ecologically and in closer connection to the earth, and what a relaxing effect doing so has on body and mind. And I, with my physiotherapeutic perspective, cannot help but think about how we could bring such an atmosphere in any workplace.

Just after breakfast we finally get the message we have been waiting for: the platform around which the hope of the future centers can be seen on the horizon. The energy level is suddenly raised several notches, and excited conversations lead us back to each of our cabins where we start packing our belongings. It does not take long. Everything we need in terms of clothes and equipment will be given to us on the platform. No one would have believed this in great-grandmother's time, that a physiotherapist's job would be to produce an alternative, temporary polar ice in the future. Because that's what I do.

With the help of innovative technology, we have managed to solve several issues in one. After the measures taken to stop the melting of sea ice in the Arctic did not work, it was the creative dream of a child that led to where we are today. The child had dreamed of a machine that manages to catch all the microplastic that floated around in the sea and transforms this into snow so that the child could make a snowman in the garden in the middle of summer. This dream was then gradually followed up on. For the alternative ice we are producing is made precisely from all the microplastic that have moved around in

sunlight out back into space, while protecting the ocean from absorbing so much of the light and heat from the sun and insulating the sea from the air and the temperature differences between them. In addition, with the help of technology we can regulate the temperature in the "plastic" so that it can help cool down or heat the surroundings depending on what the need is. And when the environment has stabilised as a result of all the other environmental measures taken around the world, a new sea ice will be produced that will work in the same way as the original sea ice did.

“ TODAY WE KNOW THAT IT IS A COMPREHENSIVE TASK TO RESTORE THE NATURE, ECOSYSTEMS AND SYMBIOSIS THAT EXISTED BEFORE, AND WE KNOW IT WILL TAKE TIME. BUT IT IS THE THOUGHT, HOPE AND DREAM OF HOW IT WILL LOOK AND BE THAT INSPIRES AND MOTIVATES.

the ocean. On the platform, these microplastics are treated to make it less susceptible to weather, wind and natural forces. Today we have managed to produce only a few square kilometre, but soon it will cover large parts of the Arctic. There it will lie and reflect the

While it's sad to think that I probably won't live long enough to see this last part of the plan, I'm still grateful to be a part of the process we are in now. Technology and our way of thinking about the future have never been so groundbreaking. In the past, it was difficult to break through with a climate plan that would only show results after several decades. Today we know that it is a comprehensive task to restore the nature, ecosystems and symbiosis that existed before, and we know it will take time. But it is the thought, hope and dream of how it will look and be that inspires and motivates.

I often think and dream about the future when all this work will show the results we hope for: There is less extreme weather, which causes less damage to cities and countryside, which will also give us the opportunity to leave the house without 10 different jackets in our backpack. Biodiversity is back and teeming with more life than

it has in the past. The polar bears and bowhead whales, as well as many other extinct species are back in the Arctic, thanks to the preservation of their egg and sperm cells. With better air quality and the opportunity to use nature in a sustainable way, it is easier to be physically active, and there is a decrease in mild mental disorders as a result. The ground, which was previously characterised by instability, has stabilised, so that it is possible to reach the remote villages in the districts.

And together with many other factors, including more accessible education, we see that social inequalities are levelled out. With environmental justice comes social justice, and vice versa. All in all, the goal is to achieve a well and healthy planet, where a rich diversity of species, including us humans, live in harmony with each other. I hope this is something my grandchildren will experience.

A NEW EDUCATION PROGRAM FOR THE FUTURE

Camilla Kristiansen, Bachelor program in physiotherapy, Institute for Health and Care Sciences, UiT The Arctic University of Norway.

'A new education program for the future' is set in a time when, even though SDGs have not been achieved in the time allocated for them, working towards the goals and aspirations expressed in them remains as important ever. Insight into the interconnected nature of society, health and environment and the need for long-term, transdisciplinary thinking and action has led to the creation of a new health and sustainability Bachelor program. Transdisciplinary education and communication have become the new normal and one can feel an excitement growing from the exchange. The expanded understanding of healthcare that underpins this kind of education and practice amplifies critical question to physiotherapy as we move towards new healthcare futures: Will we hold on to physiotherapy as it always has been, or will we change it? Will we oppose or contribute to the creation of new approaches to healthcare practice and education? What will be our contributions to the complex social and environmental challenges of healthcare today and in the future? What futures are we willing to imagine, and which ones are we willing to help come to life?



Background

Elida is 22 years old from Stavanger. She is a member of A Bright Future, an organisation that works against climate change and social inequality. Since the UN Sustainable Development Goal of stopping climate change by 2030 was not met, the Green Party established A Bright Future in 2035. The organisation works to inform and engage Norway's

population to want to choose a greener everyday life and take greater part in combating climate change globally.

Through the organisation, the Green Party successfully introduced a new Bachelor called Health and Sustainability in 2045 - an education program that would help combat climate change locally and globally. The new Bachelor program was a great success and al-

ready in 2055, almost all EU countries had added the program to their educational institutions. Elida knows several who have taken this degree and have had a great interest in the program for a long time. Already in middle school, when she became a member of A Bright Future, she decided that this Bachelor was what she wanted to do. Today it is 30 years since the Bachelor was first introduced, and the changes have been great. Among other things, the sea ice has stopped melting, the use of fossil energy sources and deforestation has slowed down drastically, and population growth has stopped.

Elida has closely followed the results presented by the organisation and saw that, even though the changes are significant, much remains to be done. There has been no major climate change since the period between 2060-2075. But even though the climate

seems stable, we are still not living in a sustainable way, as there are still people who are starving, animals that are endangered and nature is still suffering. That is why she chose to move to Oslo in 2074 and start on the bachelor's in Health and Sustainability. The first year consisted of theory, where she learned about climate change, sustainability and the health effects of this.

Now she is in her second year of study and will start her 2-year practical period. During these years, students are sent around the world to work against climate change in different ways. There are 3 pathways to choose from: The Arctic, Africa and Technology. The first pathway called the Arctic works to restore and preserve nature in the Arctic. The Africa pathway goes to Senegal and other areas in Africa to work against desertification there. And the last pathway of technology goes to the headquarters for research on sustainable development, where they research new technologies that will completely replace fossil fuels.

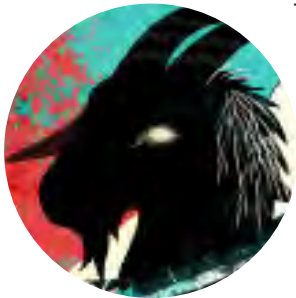
The program places great emphasis on collaboration and the students are therefore set up in teams across the three pathways. Elida, who chose the pathway Africa, is on a team with Aurora from the Arctic and Colin from technology pathway. Each month, they update each other on what they are doing, what challenges they have, and what plans there are for going forward. It is now the end of February, and Elida and the rest of the team have uploaded their messages to each other.

“**THAT IS WHY SHE CHOSE TO MOVE TO OSLO IN 2074 AND START ON THE ‘BACHELOR IN HEALTH AND SUSTAINABILITY’. THE FIRST YEAR CONSISTED OF THEORY, WHERE SHE LEARNED ABOUT CLIMATE CHANGE, SUSTAINABILITY AND THE HEALTH EFFECTS OF THIS.**”

Messages

Elida in Afrika

Hi Aurora and Colin! This month has been really exciting. Together with the locals here in Senegal, we have collaborated with other students from Australia, Denmark, England and Brazil. We have helped to collect cattle and goats into larger herds and helped with the crops. You may remember from the first year of study that desertification has been a major problem, and the only way to combat this is with grazing animals. Well, I have positive news: 50 years ago, 65% of the earth's land was exposed to desertification, but new figures



now show that the ex-areas have been to only 10%! Here is a from one of the locals with the grazing animals.

It also seems That the local economy has started to flourish because of this. This has led to a huge improvement in the quality of life here. It is really clear that the supply of water and raw materials has reduced the risk of disease, injury and mortality. Next month we are going to the other side of Africa, to Ethiopia, where we will be involved in reforestation. It's going to be a lot of fun, at least now that major changes have already taken place there. Mom showed me a picture from when she was in Ethiopia in 2010 and it will be exciting to see the difference! Can't wait to show you the picture. Hope you are well too and that the progress is great! Hugs, Elida.

Aurora in the arctic

Hi Elida and Collin. Hope all is well with you! In the Arctic, it is cold as always, thankfully. This month we have studied the wildlife here in the Arctic. While some animal species have increased in number and distribution, other species that need snow and cold changed their behaviour, and there are fewer of them as well. Our studies focus on the new behaviour of these animals, and the new combinations of wildlife in the Arctic.

In particular, we have looked at the previously endangered mountain fox, which has now gained a slight resurgence due to the breeding station here. Farmed mountain foxes are not comparable to wild mountain foxes in size, as they are much larger and almost twice as heavy. In addition, there has been a major change in the colour of their coat. The mountain fox is known for its fine white colour. But since winter has become the fox retains its summer colour longer.



Breeding has also led to a mutation where the fine white colour that the coat takes on in winter, now has a greyer shade. See how active and nice the mountain foxes at the breeding station are here. It's February and the summer coat is already on.

Flooding after the big ice melt is still a big problem here. Now it seems that the melting of the ice has stopped for a while and that there will be no major changes anymore. But it is clear that the plant and wildlife have been affected.

Next month we will look at the new plant life here! Due to the floods, several plants have disappeared, but new species have also emerged. Really exciting to see how the plant and wildlife here are so deeply connected. New food chains are taking shape, and the animals are able to adapt to the new food sources. Hugs, Aurora

Colin – Technology

Hi, Elida and Aurora. Hyperloop development continues. As I wrote to you last time, hyperloop technology has become very popular in several countries. This means of transport has now been in use for 30 years and we still see great potential for development, and clearly a greater prevalence in eastern countries. Earlier, as you have come to know the hyperloop, it was able to travel at 900km/h, which is extremely fast, but with new technology it seems that we can get it up to 1200km/h! Since the tracks are built underground, they will not destroy plant and animal life and we have almost no limits to how much we can expand! In several of the western countries, Hyperloop has already become one of the leading means of transport, and now the development in the eastern countries continues. I don't know if the Hyperloop is on its way to you in Africa also Elida? You shouldn't ignore that, in a short amount of time, you could travel across Africa in just 8

hours! Even though the Hyperloop will perhaps be the most important means of transport today, we will also see more people continuing to use cars for some time to come. In fact, Cesla is now developing a new electric car called the Cleaner, which will clean the air. Cesla's new technology is still quite new, but we may be allowed to go to their production site as early as next year, and perhaps take part in developing the technology even further.

In any case, we see challenges in the development of the hyperloop eastern countries due to going wars. Hopefully, technology, together with the advances in Africa and the Arctic, will help to combat hunger and social inequalities in these countries as well, so that there can finally be peace. How amazing that would be!



Next month we will actually go to Sweden where they are researching new technology in hand prostheses. We will look at how prostheses can make complex finger movements through programming. In addition, they are researching how to make the prosthesis respond to nerve impulses from the brain, so that it can perform movements desired by their user. So cool! Hugs, Colin



**Physio
Punk**

**COMMENTARY
ON PHYSIOPUNK**

To respond to the diverse and complex social, ecological and health challenges we are facing everywhere today, we will need many different visions for new physiotherapies. These visions will have to be conjured, thought about and communicated collaboratively, in many different places and many different languages. Biodiversity, socio-cultural and even linguistic diversity will all be needed in these efforts, not least because different languages transport different knowledges about and different ways to relate to the world around us.

The teaching that preceded the production of the physiopunk stories presented in this volume was delivered in a combination of Norwegian and English. While all stories were originally written in Norwegian and translated into English later, our introductory article was written in English and then translated into Norwegian. To further open the circle of those envisioning the future with us and foster linguistic diversity and inclusion we invited four physiotherapy educators from around the world to contribute commentaries to this volume in any language of their choosing.

The four commentaries by Prof Adriane Vieira, Prof David Nicholls, Joost van Wijchen and Prof Tobba Therkildsen Sudmann are presented in the final section of this volume and add invaluable reflections on the use of speculative fiction in physiotherapy and our students physiopunk stories. We hope readers will appreciate the richness added by our commentators and are grateful for their contributions.

SEMEANDO IDEIAS PARA MUDAR O MUNDO

Adriane Vieira, PT, PhD, Professora na UFRGS, Universidade Federal do Rio Grande do Sul, Porto Alegre, Brasil.

Em muitos aspectos me encantou ler as diferentes histórias construídas e compartilhadas no projeto Physiopunk – Speculative fiction for future physiotherapies, desenvolvido junto aos alunos do curso de Fisioterapia da UiT Norges arktiske universitet. Além de incentivar os estudantes a pensar de forma mais ampla questões de saúde e sustentabilidade do planeta, o projeto é um incentivo à criatividade, à produção textual e à reflexão sobre o que esperamos do futuro e sobre qual é o nosso papel na promoção de um mundo melhor e mais saudável.

A escrita é uma forma potente de germinarmos utopias e compartilharmos histórias. Ela nos encoraja a revisitar os caminhos trilhados, a olhar onde estamos e a semear novas ideias. Tornase, portanto, um exercício significativo em tempos de incertezas, crises e perspectivas pouco promissoras. Airton Krenak (2020), líder indígena, ambientalista e escritor brasileiro diz que nunca devemos abrir mão dos nossos sonhos e que as histórias que contamos tem o poder de adiar o fim do mundo. Criar espaços que nos permitam sonhar com soluções otimistas para a crise que vivenciamos, além de renovar nossas esperanças, nos impulsiona a movermo-nos em direção a ações mais coletivas em prol de mundo melhor e mais equânime.

Uma das ideias que me captou durante a leitura da história *The Lungs of the*

World é a necessidade de estarmos mais atentos e abertos para apreendermos outras visões de mundo, resgatando os conhecimentos de povos indígenas e as riquezas nas suas formas de viver em meio às florestas. Como salienta Boaventura de Souza Santos (1995), é necessário cessar com o epistemicídio de conhecimentos, saberes e culturas que não foram assimilados pela cultura branca e ocidental, resgatando e resguardando saberes oriundos dos diversos povos que historicamente tem sido desvalorizados e excluídos da academia, assim como dos cenários políticos e dos espaços institucionais. Entendermos outras cosmologias e formas de compreender o mundo amplia nossa capacidade de produção e reprodução da vida e, mais especificamente no campo da saúde, pode contribuir para frear o processo de medicalização social e o conse- quente

apagamento das diferentes formas de cuidados em saúde (Tesser, 2006).

Em uma retrospectiva histórica, podemos dizer que a Fisioterapia pouco explorou temáticas relacionadas a questões ambientais e sociais na sua atuação e processo de formação profissional. Os fatores biológicos que embasam abordagens terapêuticas individualizadas direcionadas a disfunções orgânicas são ainda vistos como os elementos chaves na profissão (Condrade et al, 2010). Entretanto, assim como pontuado no texto introdutório em relação à Noruega, as Diretrizes Curriculares Nacionais do Curso de Graduação em Fisioterapia no Brasil também já sinalizam, desde 2002, a necessidade de integração de conteúdos direcionados a um olhar ampliado para a saúde da população:

“Cada profissional deve assegurar que sua prática seja realizada de forma integrada e contínua com as demais instâncias do sistema de saúde, sendo capaz de pensar criticamente, de analisar os problemas da sociedade e de procurar soluções para os mesmos. Os profissionais devem realizar seus serviços [...] tendo em conta que a responsabilidade da atenção à saúde não se encerra com o ato técnico, mas sim, com a resolução do problema de saúde, tanto em nível individual como coletivo.” (Brasil, 2002).

Algumas das imagens propostas no *Urban health then and now, a reflection*, em especial a dos corredores verdes e do barulho dos pequenos rios e riachos que voltam à superfície nas cidades me acompanharam por semanas enquanto eu caminhava pelas largas avenidas

acinzentadas e lotadas de carros, imaginando quão diferente seria se as mudanças propostas por Nygård se tornassem realidade. O texto também me lembrou as discussões e as ações do movimento “cidades saudáveis” pautadas no Brasil no final dos anos 1990 (Adriano; Werneck; Santos; Souza, 2000; Keinert, 1997). Não sem resistências e com muitas limitações, esse movimento gerou políticas que contribuíram, por exemplo, para que hoje possamos circular por ciclovias, ampliando o espaço de lazer e as possibilidades de deslocamento na minha cidade. Pensar em estratégias que reorganizem e reorientem o espaço urbano e que sejam considerados relevantes pelas comunidades para o desenvolvimento humano são imprescindíveis para a promoção da saúde e do bem viver (Alcantara; Sampaio, 2017). Um movimento em que fisioterapeutas podem colaborar em vários sentidos tanto na construção de políticas públicas quanto na implementação de ações que promovam uma vida mais saudável e acessível nos espaços urbanos.

Da mesma maneira, a leitura de *A diary from the future* nos provoca a pensar em uma formação que nos prepare para atuar de forma abrangente no campo da saúde e não apenas no núcleo de saberes específicos do que hoje nomeamos como Fisioterapia. O interesse e o maior comprometimento em relação aos desafios de uma sociedade cada vez mais complexa e desigual, com um novo perfil epidemiológico e em um meio ambiente com evidente processo de deterioração se faz cada vez mais presente em

publicações e discussões que vem questionando o papel da fisioterapia, a busca por novas perspectivas para a profissão e a integração de conhecimentos advindos de outras áreas do conhecimento. Essas discussões, em ressonância com algumas ideias apresentadas no diário de Eikrem, são um forte indicio de que as mudanças começam a ganhar forma e a ocupar um espaço na vida profissional e nos currículos acadêmicos. Vejo o projeto desenvolvido da UiT Norges arktiske universitet inserido dentro deste movimento promissor, em que novas estratégias pedagógicas e novas temáticas nos convidam e nos provo-cam a pensar e a agir diferentemente.

Para finalizar, gostaria de agradecer imensamente o convite para comentar

sobre este projeto. A leitura de cada uma das histórias me inspirou a me fazer pensar no que está por vir. Como educadora, me sinto estimulada a também mobilizar meus alunos a expressarem suas ideias, contarem suas histórias e se permitirem vislumbrar possibilidades para construção de um mundo melhor. O futuro e um caminho a ser trilhado e acredito que as palavras e as ações coletivas tem o poder de moldar o porvir. O caminho pode ser longo, com intempéries e perdas, demandando paciência, articulação e determinação. Contudo, entendo que é tempo de acreditarmos que nossas ideias adiam o fim do mundo.

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DEEPLY TOUCHING

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In many ways, this remarkable collection of eco-fiction essays, produced by students at UiT Norges Arktiske Universitet, commissioned and curated by Filip Maric, Liv Johanne Nikolaisen, and Åse Bårdsen, and illustrated by Heike Jane Zimmermann, reflect a lot of our present thoughts about the social and environmental crises that can already be ‘glimpsed in the distance along existing thought pathways’ (Morton 2016, p.1). ‘This is the future’, Tim Morton tells us, ‘that is simply the present, stretched out further’.

The sense that some things will remain and some things will change pervades this whole collection. The authors already have a feeling for what the near future holds for them. Physiotherapy, like the earth itself, will bend but not break. And many of the essays give an optimistic prognosis for human adaptation, if not flourishing. Technological innovation plays a big part in remediating the worst effect of climate change, and the Enlightenment fantasy of the scientists-saviour still lives strong: “You could almost say that the scientists were the Noah’s ark of that time” (Becker). But, as Becker suggests, the lessons of science are no longer used to build a “huge ship” – a wonderful metaphor for industrial-age hubris and colonisation – but to building “an enormous plantation”.

The terrible fantasy that many of a planet so altered that we need to build new artificial Arcadian worlds to rise above, or shield from, the world ‘out

there’ is present in many of the essays. Sigmund Freud believed that ‘The creation of the mental realm of phantasy finds a perfect parallel in the establishment of ‘reservations’ or ‘nature-reserves’ in places where the requirements of agriculture, communications and industry threaten to bring about changes in the original face of the earth’ that have made nature ‘unrecognisable’ (Freud, Strachey & Freud 1963, p.372). How we fit into this world is one of the fascinating challenges Filip Maric and colleagues set the students.

The authors can all see that mutual coexistence need to replace the kinds of unlimited growth, exploitation, competition, and white privilege that have blighted our efforts towards planetary justice thus far. But, interestingly, all of the authors in this collection imagine the role of physio-therapists as a partner and collaborator in the New World Order, rather than agitator and strong advocate.

This is perhaps not surprising. One of the hardest things physiotherapists have to do today is imagine how the profession can become more expansive and holistic, whilst remaining coherent and recognisably physiotherapeutic. Will we be trampling on others' territory by becoming an ally to the environment, or expanding on to virgin soil? Will it still be simply physiotherapy if we become algae farmers (Karlsen), reindeer manure collectors (Anmarkrud), or dome builders (Molden)? How the students grapple with these questions is a telling insight into how the physiotherapy profession might evolve in the near future.

Asking physiotherapy students to think in speculative and creative ways can be hard. Most education programmes put their emphasis on the retention of facts, evidence-based objectivity, rules, and proper conduct. Rarely do they encourage the skills of imagination, creative speculation and innovation. So it is not surprising perhaps then that the stories all assume physiotherapy will adapt and adjust. As Nygård suggests, 'Physiotherapy is a flexible profession that is constantly adapting to human needs, and humanity is constantly facing new challenges, which, in turn, create societal changes'.

Work too remains a constant motif in the essays. The work of the therapist, but also everyday work. And the division between what humans do, and what robots and AI do is interesting. In most cases, technology is mobilised for human enhancement. Servant-bots to put out our clothes, hyperloop trains and 'Cesla' cars (Anmarkrud,

Kristiansen) are commodity fantasies designed to make our movements smoother.

And it is still humans that decide what work they do and what the machines control. And paradoxically, perhaps, in many of the stories it is the mundane and quotidian tasks, like therapeutic digging, that people retain, and world (re)building becomes one of the main drivers of future physiotherapy. This may be how young physiotherapists are already reminiscing about a past when we could all touch the soil, ice was made from water, and the air did not need filtering. Whatever prompted it, it is a stark reminder that it doesn't matter if the students are enrolled in geology, architecture, commerce or physiotherapy, climate change is an existential threat like no other, and one they are all having to grapple with.

Fiction has always spoken the truth in ways that our logical, reasoned minds do not allow, and this collection is no exception. And it is in the speculative nature of these essays that the real hope and vitality lies. One might dispute the science, the confidence in the enduring importance of professions like physiotherapy, or the challenges of imagining post-human ecosystems, but the message of caution that these stories convey cannot be ignored.

More than any generation before, physiotherapy students born in this millennium are acutely aware that the next 50 years of their professional lives could see greater disruption than at any time in the profession's history. More evidence-based studies of the efficacy

of physiotherapy for supraspinatus tendinopathy will not help them here. In fact, these essays suggest very little of what is currently taught in physiotherapy curricula will endure.

Nygård suggests that the “mental part, social factors and the human external environment have also become important to physiotherapists”, but these essays also show that the sheer scale of possible thinking in the profession needs to expand (Eikrem). Exponentially.

Creativity creates hope; “hope that we can find a way out of pollution and littering that creates new ideas and new jobs”(Becker). Whether this means rebuilding a kind of Arcadian world or reviving indigenous wisdom, writing like this shows not only that our students sense the danger ahead of them, but that with the right kind of help, can play an important role in shaping the future.

Maric, Nikolaisen and Bårdsen call this project Physiopunk. This is a great way to frame this collection. It reminded me

of a poem by the great punk poet Roger McGough:

**EVERYDAY
I THINK ABOUT DYING.
ABOUT DISEASE,
STARVATION,
VIOLENCE, TERRORISM,
WAR.
THE END OF THE WORLD.
IT HELPS
KEEP MY MIND OFF
THINGS.**

What we absolutely need in the profession today are some more people prepared to spit in the face of authority and snub their nose at the voices of reason. A little more anarchism, incredulity, and creative dreaming would not go amiss either. These essays do all of that, and more.

¡Viva la Revolución!

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TOEKOMSTEN MET FYSIOTHERAPIE

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Opeens bevind ik mij in een andere werkelijkheid, in andere werkelijkheden. Overvallen door een mengeling van bewondering en bevreemding. Bewondering voor de creativiteit van deze (aankomende) collegae. Bewondering voor de inkijk in mogelijkheden, wensen en behoeften. Maar tegelijkertijd ook bevreemding door de confrontatie met andere realiteiten met daarin een mix van bekende en onbekende elementen, in een variatie van contexten. Een geheel van indrukken, welke gedachten en emoties oproepen. De 8 verhalen en het inleidend schrijven van "Physiopunk initiatief", laten een rijkheid zien aan mogelijkheden.

Mogelijkheden niet zo zeer ten aanzien van wat ze nu zijn, maar juist naar wat kan gaan zijn, wat kan worden. Door het lezen van de verhalen merk ik dat ik mijzelf beweeg tussen verschillende plateaus. Deze plateaus hebben voor mij wel een relatie, maar geen directe hiërarchie. Ik zal hieronder de verschillende plateaus toelichten

Toekomst

Waar we in het heden zijn, kennis hebben van en vanuit het verleden, kunnen we een toekomst alleen maar bedenken. Kenmerkend aan de toekomst is dat deze er nog niet is. Tegelijkertijd zijn we bezig met de toekomst. Kijk naar het maken van plannen, doelgericht werken, stellen van targets. Hiervoor maken we gebruik van impliciete en expliciete prognoses. Alleen weten we ook dat de relatie

tussen prognoses en werkelijkheid weerbarstig is. De toekomst overkomt ons misschien meer dan dat we (willen) beseffen. Het initiatief om nu juist de toekomst te gebruiken als leeromgeving opent direct mogelijkheden. Leren van en met de toekomst is een zinvolle toevoeging in het palet van onderwijs. Iets wat breed in de wereld uitgevoerd wordt, maar nog zelden zichtbaar is binnen fysiotherapie onderwijs. Van de toekomst kan gezegd worden dat deze nog niet is, en alleen maar verbeeld kan worden. Als mensen hebben wij de mogelijkheid om te kunnen verbeelden. Daarmee kunnen alle mensen leren om zich ook de toekomst te verbeelden. Dit in een variatie van intenties en redenen en daarmee toekomst geletterd (Futures Literate) te worden (Miller et al., 2018). Toekomst geletterd worden door de

toekomst te gebruiken om bewust te worden over onze aannames naar de toekomst en daarmee ook anders kunnen kijken naar het heden. “Physiopunk initiatief” is een mooie start om toekomst geletterd te worden. De verhalen geven een rijkheid aan mogelijkheden om op zoek te gaan naar een ieders anticipatieve mogelijkheden.

Variatie

De rijkheid van de verhalen worden voor een groot deel gekenmerkt door de variatie. Variatie in de verschillende toekomst. Dat maakt dan ook direct duidelijk dat toekomst niet een enkelvoudig iets is. Maar juist dat toekomst meervoudig is, toekomst. Deze meervoudigheid creëert een openheid. Een openheid naar mogelijkheden, naar kansen voor de toekomst. Maar variatie creëert ook kansen voor leren in het nu. Variatie wordt gezien als de moeder van het leren (Marton and Trigwell, 2000; Åkerlind, 2015). Door variatie in onze ervaringen kunnen wij de verschillen zien, juist deze verschillen geven nuance aan ervaringen die op elkaar lijken. Voor een professie als fysiotherapie is het belangrijk om de kernconcepten van en voor de professie, te ontdekken. Het ervaren van variatie binnen een groep helpt om deze concepten naar voren te laten komen. Nu creëert het “Physiopunk initiatief” de mogelijkheid, om naast de concepten van het heden, ook een aanzet naar toekomstige concepten te ontdekken. Mogelijke transities in het denken en handelen van fysiotherapie komen naar voren. Daarmee ruimte gevend voor keuzes aan allen.

Inclusie

Toekomstvoorspellingen, prognoses, worden vaak ervaren als abstracte processen welke voorbehouden zijn aan experts. Maar zoals al eerder beschreven, de toekomst is nog niet en kan alleen verbeeld worden. Verbeelden dat kan iedereen. Met de uitdagingen waar we momenteel inzitten, in fysieke, mentale en sociale zin, lijkt het zinvol om anders te kijken (Venkatapuram, 2013, 2021; Myers, 2017). Immers wanneer we doen wat we deden, krijgen we wat we kregen. Door het verbeelden van de toekomst open te laten aan eenieder komt er ruimte voor nieuwe inzichten en praktijken. Hierbij elkaar ruimte geven om niet alleen binnen de waarschijnlijke paden te blijven, maar juist ook naar de grenzen te zoeken, tot aan het absurde toe. Hierbij op zoek te gaan naar gewenste toekomst en het toelaten van een ieders behoeften. Dit niet alleen om grote uitdagingen en crises te kunnen hanteren, maar juist om voorbij te gaan aan de illusie van zekerheid. De mogelijkheid, de vaardigheid om de toekomst te gebruiken op verschillende manieren voor verschillende doelen is en moet ook, toegankelijk zijn voor iedereen (Damhof et al., 2020). Het is een vergaande vorm van democratisering, van inclusiviteit. Een start is gemaakt in “Physiopunk initiatief”, door aankomend fysiotherapeuten gelijkwaardige ruimte te geven om te verbeelden en te ontdekken. Hiermee een weg geopend om futures literacy in te bedden in het denken en handelen van fysiotherapeuten.

Conflict

Alle variatie in verhalen, maar ook in tijd, laten ambiguïteit zien. Ambiguïteit tussen het heden en de toekomst, tussen manieren van handelen en denken, tussen en in mensen, maar zeker ook tussen de huidige norm en radicale toekomst. De scheidslijn tussen goed en fout wordt een spectrum met een verscheidenheid aan perspectieven. De zekerheden waarop onze werelden gebaseerd zijn veranderen in aannames over onze wereld. Een situatie die conflicten op kan roepen. Conflicten worden vaak ervaren als ongemakkelijk, iets om te vermijden. Zeker wanneer het conflicten behelzen over manieren van handelen en denken, over concepten, over de waarheid tegenover waarheden. Vaak speelt hierin een machtsverschil een rol, in de vorm van ervaren hiërarchische verschillen (Pouwels, 2019). Een fenomeen welke naar mijn mening ook niet onbekend is in fysiotherapie en onderwijs. Machtsverschil tussen docent en student, machtsverschil tussen fysiotherapeut en cliënt, machtsverschil tussen mens en natuur. Door het conflict, de contradictie, de ambiguïteit bewust te maken kunnen we recht doen aan de verschillen, aan onzekerheid en ook aan inclusief zijn met elkaar. Door radicale beelden niet te voorkomen, maar juist als compost te zien, worden transitie en sociale innovatie verder mogelijk, buiten de gebaande paden.

Hoop

Toekomst is meervoudig, een oneindige hoeveelheid aan mogelijkheden. De begrenzing ligt in de mogelijkheid tot verbeelding. Ver-

beelding gesteund door de concepten en woorden die we nu hebben. Hierin beseffen dat we een toekomst verbeelden met de woorden van nu. Vergelijkbaar om het nu te beschrijven in het vocabulaire van de 19^e eeuw. We gebruiken onze concepten, onze taal als houvast naar de zekerheid. Vandaaruit bewegen we mogelijk weer snel naar optimisme of pessimisme. Beide toestanden geven een excuus om actie buiten onszelf te leggen en afwachtend te blijven. De "Physiopunk initiatief" verhalen geven de mogelijkheid om vanuit de toekomst een ieders onderliggende behoeften, angsten, mogelijkheden en waarden te ontdekken. Door het navigeren, ontdekken en creëren van en tussen verschillende plateaus kunnen onzekerheden worden omarmt waarin we ruimte vinden om te handelen (Solnit, 2005).

"Hope locates itself in the premises that we don't know what will happen and that in the spaciousness of uncertainty is room to act. When you recognise uncertainty, you recognise that you may be able to influence the outcomes – you alone or you in concert with a few dozen or several million others." (Solnit, 2005)

Dank aan de schrijvers van het "Physiopunk initiatief" voor de rijke verhalen en het initiatief welke navolging verdient. Daarnaast ook dank aan mijn aankomende collega Hanneke van de Haar voor het meelesen en de feedback.

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PHYSIOTHERAPY 2.0: NECESSITY IS THE MOTHER OF INNOVATION

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The first part of the title paraphrases Web 2.0, which refers to websites that emphasize user-generated content, ease of use, participatory culture, and interoperability for end users. The eight physio sci-fi stories can be appreciated as fragments of Physiotherapy 2.0, where users are understood to be physiotherapists, co-workers, patients, citizens, or other stakeholders, who take initiative and responsibility for launching physiotherapy 2.0.

A commentary always entails a reception of the texts. My reception appropriates a reading in line with modern day reception theories, where texts are produced, distributed, read, interpreted, para-phrased, rephrased and re-distributed in a multitude of ways on a multitude of platforms (Jensen, 2019). Furthermore, texts are always read, negotiated, and contested within a specific context, including the differences in knowledge, experience and interests the readers bring along. The eight stories prompted my curiosity and respect, and gratitude is due for the bravery exhibited by academic staff and students for making this possible. I refrain from commenting on each of the stories, but rather invite readers of my text to create their own reception of the eight stories, the accompanying paper from the staff (Maric et al.), and the four commentaries.

The second part of the title is an idiom which captures the common denominator across the stories; there are pressing issues, needs and wants related to health in the future which call for innovative responses from physiotherapists of today and of tomorrow. Physiotherapists' toolboxes are equipped to motivate and support our patients in building and using their change contingency. The tools most used are movement and interaction, to create bodily changes to be able to meet an unknown future. Through movement and interaction physiotherapists can affect the body from cell to society, i.e., facilitate micro plasticity, flexibility and changeability for movement and social participation – from cell to society.

The sci-fi stories unanimously show that physiotherapy theory and practice most

often stand as an individual approach to individual problems, which the student-authors find distressing. Their imagined future health needs re-route physiotherapy towards contextual and global issues, and an understanding of health as much more than a personal biological asset. Health problems are often produced at a societal and political level, e.g., the global unequal distribution of burdens (e.g., basics like clean water, enough food, and safe shelters), unequal access to health services. The sci-fi stories are more than real in their acknowledgement and anticipation of a need for a broader knowledgebase in physiotherapy, and a need for new approaches to health encounters and health measures at an individual, group and societal level.

From my point of view, a privileged vantage point in the Northern hemisphere, an answer to the student-authors calls, is to encourage physiotherapy practitioners, educators, and researchers to learn from inter alia occupational therapists, social workers, political scientists, and philosophers, who have engaged themselves in issues related to health justice and environmental activism. Occupational therapists, social workers, and human and veterinary doctors, increasingly engage themselves in collective action to better the lives of all things living, including the health of our planet. Social workers call for environmental justice (Dominelli, 2014), and occupational therapists call for occupational justice (Bailliard et al., 2020). Social injustice and inequality in health are two sides of the same coin, as is environmental awareness and

human rights. Health justice increasingly engages a broad scholarship, not at least when it comes to acknowledge and act upon the understanding of how all things living are interdependent (Mackenbach, 2021; Venkatapuram, 2013). Tarazona et al. (2020) sums up the argument as “One health, one welfare, one biology”.

The physiotherapy profession has self-administered a restraint on societal engagement, and cherished “neutrality” as a euphemism for political ignorance. The students are champs at the bit – demonstrating their impatience for a physiotherapy 2.0 with a social conscience.

Physiotherapy 2.0 will need a refurbished tool-box, and the Johari window might fit as a generic tool (Oliver & Duncan, 2019). The model is a simple matrix of familiar and unfamiliar knowledge; what is known to someone can be shared and translated by asking and listening, whereas the unknown can be explored together.

	Known to us	Not known to us
Known to others	<p>Common knowledge What we and others know about our world</p>	<p>Others' knowledge What others know about our world that we don't</p>
Not known to others	<p>Our own knowledge What we know about our world that others don't</p>	<p>The unknown What none of us know about our world</p>

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The collected stories are written by the students as individuals. I would love to see the ideas of future thinking, creativity and bravery unfold further, and would suggest that the University encouraged the students to work collectively, material, and practical with their future projects. Design thinking (Carlsen et al., 2012) and applied drama (Nicholson, 2005) might serve as inspiration, as do different well known approaches to Utopia (Nielsen & Nielsen, 2016) and future workshops (Jungk & Müllert, 1987). The Johari window can be used as part or parcel of future workshops (Alminde & Warming, 2020), were ideas, performances, and unbridled creativity and ingenuity can unfold. Playing with fiction is playing with the future, and in my view some activity and doing is mandatory for future physiotherapist. Doing something is what we do.

Tomorrows experts are probably not known to us to day, which necessitates an open attitude towards identification of available roles for physiotherapists (Pau & Hall, 2021) . Either way, future health challenges are in emergent need of social innovation and collective action for change (Moulaert, 2013). A first foot forward could be to turn our gazes and interventions from an

anthropocentric towards an eco-centric approach to health and social challenges, as shown in Ramsay & Boddy's model below (Ramsay & Boddy, 2017).



Environmental social work practice (Ramsay and Boddy, 2017:80.) Reprinted with permission from the rightsholders.

My last two cents are: "Think global, act local – Go Glocal!" (Sudmann & Breivik, 2018). Everyone can do something that make a small difference in someone else's life or living conditions, not least present-day and future physiotherapists.

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