Maria Höyssä, Hanna-Kaisa Aalto, Sofi Kurki, Matti Minkkinen, Katriina Siivonen, Sari Söderlund, Petri Tapio, Markku Wilenius & Anne Arvonen (eds)

COOLEST STUDENT PAPERS AT FINLAND FUTURES RESEARCH CENTRE 2015–2016

Tulevaisuuden tutkimuskeskuksen valittuja opiskelijatöitä 2015–2016

FINLAND FUTURES RESEARCH CENTRE
FFRC eBOOK 6/2016

Turun yliopisto
University of Turku

FINLAND FUTURES
RESEARCH CENTRE

ISBN 978-952-249-423-8
ISSN 1797-1322

Finland Futures Research Centre
Turku School of Economics
FI-20014 University of Turku

Rehtorinpellonkatu 3, 20500 Turku
Korkeavuorenkatu 25 A 2, FI-00130 Helsinki
Åkerlundinkatu 2, FI-33100 Tampere
Tel. +358 2 333 9530

utu.fi/ffrc
tutu-info@utu.fi, firstname.lastname@utu.fi

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EDITORIAL

Dear Reader,

Welcome to read inspired and inspirational picks from Finland Futures Research Centre's students papers from the study year 2015–16. With this publication, we at the FFRC want to create a channel for making visible the hard work, academic talent and creativity featured in our courses.

The idea of publishing these papers originated in a joint coffee table discussion between the teachers and administrative people of FFRC. The teachers brought up how joyful it is to see students coming up with excellent pieces of writing, which can give new perspectives to futures studies for all of us. Someone noted that it would be nice if these papers could be published somewhere, another mentioned that work of high quality could appear in our own eBook series – and the next thing we know, our Project Planning Officer Anne Arvonen took initiative and we found ourselves in planning meetings for creating a new kind of Special Issue, one devoted to coolest student papers of the year.

We listed the courses where students write individual or joint essays or papers and agreed that the responsible teachers should select one or two interesting, personal and well written examples from each course for publication. The authors were allowed to correct spelling mistakes and to do light editing, but basically the content of the papers is the same as in the returned coursework.

This Special Issue covers six courses from the international Master's Degree Programme in Futures Studies (FUTU), two courses organised by Finland Futures Academy (FFA) (taught in Finnish), and the interdisciplinary teamwork course of Sustainability Studies (KEKO) (includes both English and Finnish speaking teams). FUTU, FFA and KEKO studies are all coordinated by the FFRC. In this Special Issue each course forms its own section with an introduction by the teacher(s), followed by the papers.

The Coolest Student Papers of FFRC 2015–16 has the following aims. First, having their work published hopefully serves as a small extra reward for the hard work of those students whose papers got selected. May this boost their and others ambition further! Second, we hope that the possibility of publication will motivate the students of the next study year to do their best in thinking, writing and also in the final step of polishing, which is essential to get a paper to a condition where its publication is considered. Third, even if one does not wish to have a published essay, the examples give an idea about highly esteemed approaches in FFRC course assignments. Fourth, publishing the papers necessitated a clear copyright practice from us. For this publication, formal agreements have been made with all authors. This makes it easy to show and use these papers as an inspiration for future students. Fifth and finally, the papers of this issue should help you as a reader to understand the many-faceted nature of Futures Studies and Sustainability Studies. Maybe you know someone who'd be interested to study them?

So, dear reader, please take a comfortable position and move on. We would like to share with you our joy to read the Coolest Student Papers of FFRC 2015–16.

Turku, 13 September 2016

Maria Höyssä, Hanna-Kaisa Aalto, Sofi Kurki, Matti Minkkinen, Katriina Siivonen, Sari Söderlund, Petri Tapio and Markku Wilenius

FUTUS1 ETHICS OF FUTURES STUDIES

Ethics of Futures Studies (5 cr) is one of the compulsory core courses in the Master's Degree Programme in Futures Studies. The aim of the course is to identify ethical issues related to work as a futures practitioner, both within and outside academia. The course has two main focus areas: understanding the ethical responsibilities of a futurist and evaluating ethical dimensions related to possible future developments. Having a compulsory ethics course is especially important in futures studies because the field is usually considered value-rational by nature. Alternative futures cannot be studied without involving – and examining – one's own values and ethical judgments.

The course emphasises ethical discussions on relevant topics, both on general ethical considerations in futures work and on substance areas such as specific technologies. The course begins from the value basis laid out for futures studies by Ossip Flechtheim in the 1940s and continues to contemporary issues and debates. Students take part in interactive seminar discussions and complete a group work assignment in addition to taking the exam and writing a short essay. The primary learning outcomes are awareness about the breadth and depth of ethical issues in futures studies and resources and tools to help deal with them.

FUTUS1 essays of Henna Heinäjärvi and Eeva Karppinen were evaluated by the course teachers Matti Minkkinen and Katriina Siivonen and the essay of Amos Taylor was evaluated by the course teachers of the years 2014–2015, Matti Minkkinen and Anita Rubin.

Henna Heinäjärvi's essay skilfully considers ethical issues related to an emerging technology, ectogenesis. Heinäjärvi analyses ethical implications of ectogenesis at three levels, from the general technology level to the application level. The essay is interesting because it highlights connections between technology and an intimate area of life, reproduction, thus bridging boundaries between so-called "soft" and "hard" topics.

Eeva Karppinen's essay considers two different scenarios of corporate social responsibility, a possible future and a preferable future. Karppinen clearly differentiates between a future that could take place and a more desirable future that we should strive for based on ethical considerations, while also acknowledging the existence of value conflicts and the difficulty of making final ethical judgments. These issues are at the heart of ethical considerations in futures studies.

Amos Taylor's essay considers the use of technology in education from an ethical perspective, highlighting issues of power and societal reproduction versus innovation and transformation. Like Heinäjärvi, Taylor also examines the intersection of technology and a sphere of everyday life, in this case a more public sphere: the classroom. Taylor's essay originates from the year 2014, and it has been edited for publication as an academic article. The essay is therefore not directly comparable with the other student essays since it has been edited further.

From Liberator of Women to Moral Atrocity – Ethical Evaluation of Ectogenesis

Henna Heinäjärvi
University of Turku, Turku School of Economics, Futures Studies

1. Introduction

Unto the woman he said, I will greatly multiply thy sorrow and thy conception;
in sorrow thou shalt bring forth children; and thy desire shall be to thy husband, and he shall rule over thee.
(Gen 3:16, AV)

When banishing Adam and Eve from Paradise, so the story goes, as a punishment for Eve's sins God curses women to reproduce through a long and difficult pregnancy ending with excruciatingly painful and dangerous birth. It is a religious explanation of the human reproduction but despite what one's beliefs are and whether they prefer a scientific explanation to a legend, the fact remains that since the dawn of humanity human reproduction has been a strenuous burden women have had to carry – until ectogenesis. Ectogenesis refers to the technology that enables gestation outside the human body in an artificial environment (Cannold 2006, 47; Gelfand 2006, 1). In other words, it can be thought of as a machine similar to an incubator where male and female gametes would be placed and in which the entire gestation from fertilisation to birth would occur.

While the idea of ectogenesis may seem like it comes straight from the pages of a science fiction novel, the development of an artificial womb for human use is closer than one might think (ibid.). At the moment it is possible for prematurely born babies as young as five and half months to survive which would have been unthinkable decades earlier. Should the medical advancements continue as in the past, it is soon possible to save even younger prematurely born babies. It is no longer necessary for the human foetus to grow nine months in the womb (Singer – Wells 2006, 9) and ectogenesis begs the question whether it is necessary at all and, more importantly, should it be.

As I am writing this, ectogenesis is still an emerging technology. It questions the very nature of human reproduction and therefore the decision whether to pursue the technology is an issue of morality. Evaluating the ethical perspective already in the development stage could help contain the negative consequences of the technology. Although emerging technologies provide a challenge for evaluation as it ought to forecast without being too speculative (Brey 2012, 309), it is absolutely necessary. After the successful cloning of the sheep Dolly in 1997 the United States government tried to temporarily ban government funding for cloning research to consider "the moral, legal and social implications" (Gelfand 2006, 2) that ought to have been discussed before the technology was a reality. Many articles have been published about the moral ramifications of ectogenesis and in this essay I will describe a few ethical issues that ought to be considered. I will do so with the aid of the anticipatory technology ethics framework (Brey 2012).

In the following sections I will briefly introduce the framework and then continue describing the ethical issues on three different levels: technological, artefact, and application. I will finish the paper by presenting the conclusions.

2. Introducing Anticipatory Technology Ethics (ATE)

Brey (2012) introduces a framework for evaluating emerging technologies called Anticipatory Technology Ethics (ATE) where the ethical aspects are considered on three different levels: technology, artefact, and application. On the technological level the issues related to the integral nature of the technology are considered. These are issues that are likely to emerge due to the very nature of the technology from the point of view of the most central stakeholders. (ibid., 309-310) This is the level which we are discussing when we are talking about ectogenesis as a potential. Next, there is the artefact level where the physical products needed to make the technology reality are at the centre of attention, as are the probable ethical issues relating to the use of these products. On the application level, the concrete usage of the artefact is considered as well as the morality of potential applications. (ibid., 311) Brey also offers a checklist to ease evaluation (including harms and risks, rights, justice and common good) but like all checklists, it is ultimately incomplete (ibid., 313) and should not be considered as a complete guideline for evaluation. Because the goal of this essay is to be a brief description of the most prominent ethical issues I will not discuss the checklist further here.

3. Ectogenesis: Technological Level

It is a mistake to think of ectogenesis as a single technology; rather, it is a collection of techniques necessary to produce gestation in an artificial surrounding, such as artificial womb, embryo maintenance, egg maturation, fertilisation and waste removal (Gelfand 2006, 2; Murphy 2006, 29). It is a highly complex biotechnological process. As a reproductive technology the main rights that have to be considered are the rights of women and foetuses, or the children born as a result. Ectogenesis is unavoidably a feminist issue as it is a question of a process inherently part of the female biology. The issue has divided feminists: on the one hand, ectogenesis is heralded as freeing women from the "tyranny of their reproductive biology" (Hanson 2004, 146), but on the other hand it greatly challenges female reproductive rights (Murphy 2006, 43).

Main concerns are related to the safety of the procedure and consent. If ectogenesis is to be seen as a tool for liberation of women, it needs to include safeguards against bodily violation and unsafe obtaining of the egg cells (ibid., 35). Ectogenesis offers an opportunity for women to whom pregnancy would be dangerous, lethal or otherwise unwanted so ensuring the safety of the procedure is of utmost importance. Informed consent needs to be an integral part of the procedure to prevent exploitative action (ibid., 35-36).

The foetus and foetal rights are to be considered next. Here we face questions familiar from abortion debates: do foetuses have rights? Do foetuses have a right to life, even over the consent of the mother? In traditional, biological pregnancy foetal rights and maternal rights may be in contradiction to one another. If the woman does not want the pregnancy or it would be dangerous to her and decides to abort, they are exercising their right for bodily autonomy but at the same time, it is in direct violation of the foetuses' right to life if there is one. The traditional abortion discussion has so far focused on whose right should be put first (feminists versus foetalists) but once ectogenesis is established, the concern

for bodily autonomy and foetal harm need not be in contradiction (Murpy 2006, 31). In a situation where the foetus was healthy, it could be moved from the uterus to an ectogenetic machine where its gestation would take place. However, this raises other questions. Who is responsible for the children produced in such a way? Do the women get to decide whether they would prefer abortion over ectogenesis? Should they?

4. Ectogenesis: Artefact Level

In the previous section we touched upon the topic of ectogenetic children. Although the foetus and child it develops into are obviously connected, it is more important to focus on whether artificial pregnancy apparatus would produce children that are better- or worse-off than in traditional pregnancy. In the following paragraph I am going to refer children who are the result of artificial gestation as ectogenetic children and children born after a traditional pregnancy as biological children. The question whether we should pursue ectogenesis depends not only on if it is successful but also if it is better: if ectogenetic children are sicklier and have poorer quality of life than biological children, it is not worth it and its development should be halted.

There are arguments for and against ectogenesis being the better option. On the one hand, artificial gestation could produce better adjusted children and protect the foetus from drug and alcohol abuse (Singer – Wells 2006, 14-15). Foetuses in artificial gestation would be more closely monitored and would offer a safer option to surrogacy pregnancy in particular. On the other hand, there is no guarantee that ectogenetic foetuses would develop normally. It is not certain that maldevelopments would be noticed during the gestation, making the first ectogenetic children living human experiments. (ibid., 15-16). Are we prepared to go through mistakes that might cause significant human suffering if it leads to ultimately having healthier babies and less suffering? Does the end justify the means? This is the question that needs to be answered before first attempts at ectogenesis.

5. Ectogenesis: Application Level

If used as designed, ectogenesis is a viable alternative to pregnancy in a situation where pregnancy is not considered to be the best option. Such situations include when the pregnancy would be dangerous to the woman or the foetus, the foetus is unwanted, or possibly in a situation where the child is wanted but pregnancy is not because of career reasons. However, there may be some unexpected applications to ectogenesis technology. It could be used as a method to grow embryos for spare parts: embryos would be kept alive to provide tissues and tailor-made organs for already existing humans. Although this would be considered only partial ectogenesis since the survival of the embryo is not the goal (ibid.), it is a possible result from unregulated application of ectogenesis. It depends from the viewpoint of the evaluator whether it would be considered a moral atrocity or the most ground-breaking invention in medicine since penicillin.

Embryo culturing is closely related to the stem cell technology controversy and intertwined with ethics. Questions about when life begins, whether it deserves protection in all situations and whether it is acceptable to use human-based technology to benefit mankind are at the core of the discussion (Banchoff 2011, 2). The opponents of stem cell research highlight the unique genetic identity of human or-

ganism whereas the supporters of the technology remind that individual embryos survive only approximately two weeks outside the uterus (ibid., 5). At its most sinister application, partial ectogenesis could be used to mass produce organs to those most capable of paying for it.

6. Conclusions

In this paper I have described several ethical implications ectogenesis will bring with it through the anticipatory technology ethics framework. On the technological level, ectogenesis affects the safety of women and foetuses. On the artefact level, the impact the machinery will have on ectogenetic children is the most important issue. On the application level the morally questionable application of organ harvesting was raised. Although this short paper only scratches the surface, it appears that the primary concerns are related to the safety and morality of the technology.

Ectogenesis offers a viable alternative to traditional pregnancy to those whose life would be at risk during a traditional pregnancy, but to avoid images of Brand New World-style hatcheries legislation is needed. Clear guidelines and restrictions are desperately needed as they would be able to diminish most concerns. Ectogenesis is not a technology that ought to be widely distributed but at the hands of the state or a selected intra-national official. With strict regulations of the necessary prerequisites for ectogenesis, the informed consent and safety of the procedure could be guaranteed and using the technology to immoral gains avoided.

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Future Ethics in Corporate Social Responsibility

Eeva Karppinen
University of Turku, Turku School of Economics, Futures Studies

Introduction

Future studies and moreover, future planning is widely used in modern day business. An example of future studies methodology that is commonly known is scenario planning, which has also gained importance in business. Scenarios are often a part of analysing possible futures as they are helpful tools for shaping future vison for today's strategy. It is noticeable that Corporate Social Responsibility, also known as CSR, is often part of a company's strategic work. CSR as a concept has often been contested, since it is usually impossible to categorize companies' behaviour as responsible and irresponsible. The definitions of the CSR are often multitudinous as well. CSR often deals with all aspects of social responsibility. In other words, it means that a company acts responsible towards society and all stakeholders. However, the term, for example, can be narrowed down to environmental aspect that means the attempt to lower environmental impact.

In terms of ethics in corporate responsibility, a company has different motivations to act responsibly and the acts to behave responsibly ought to reach all stakeholders involved. Because ethics play a major role in the process of CSR, it is insightful to discuss the role of ethics and how they will evolve and possibly be reshaped in the future. With that, this essay attempts to discuss ethical points of CSR by using Future Studies scenarios as a tool to analyse the issue. In other words, two unlike scenarios will be built for the future. These scenarios could be called as possible and preferable future scenarios. Ethical problems within the notion of CSR are being discussed by representing these scenarios. Ethics of the CSR consists of issues such as transparency, credibility and moral motivation. Given this, this essay discusses the CSR's moral motivations and ethics behind corporate responsibility. Secondly, CSR will be discussed as a complex issue that could be better understood from Future Studies standpoint.

Background information

The adaption of CSR is usually claimed of being essentially a matter of business strategy. At the same time, CSR has gained an essential role in modern company. In other words, it has experienced fast growth, which have resulted often studies attempting to demonstrate a business case for CSR and to provide practical solutions (Gjølberg 2009b). The business case idea includes that CSR can benefit a company, financially and non-financially, and should therefore be adopted for instrumental reasons even where a moral motivation is missing. At the same time, many consumers have demonstrated an increasing interest in responsible business and an example of this would be, for instance, environmentally conscious products. These have all reflected to people's expectations for business. Freeman (1984) has argued that the modern day corporations cannot focus merely on maximizing shareholder wealth as it depends on the quality of stakeholder relationships. These relationships mean the connections to the firm's employees, customers, suppliers and shareholders but also nature and society at large

(Keinert, 2008). Therefore, the arguments that doing responsible business is also economically rational keep influencing the way organizations do business.

Building Scenarios for CSR

When reflecting on the current state of the CSR and its ethical motivations, Future Studies scenario planning could be conducted on the basis of possibilities and present state ethics for CSR. Scenarios are often created after comprehensive work, which includes identifying focal issue, driving force, predetermined elements and uncertainties. Schwartz stated that "scenarios are the most powerful vehicles I know for challenging our "mental models" about the world, and lifting the blinders that limits our creativity and resourcefulness" (1991). Furthermore, scenarios are said to be "images of the possible that critique the present" (Inayatullah 2007:16). Scenarios can be used as a tool for strategic planning and they can provide a new way of thinking about the future. Building these scenarios does not necessarily mean that one can predict where the ethics of CSR is headed. However, scenarios can create informative pictures of alternative futures for CSR and its course of ethics.

Possible Future Scenario

A possible future scenario means that the scenario may happen in the future, however it is not a prediction. Given this increasing interest in CSR, a possible scenario for the future is even increasing knowledge of environmental consciousness, which will lead to businesses becoming more committed in applying CSR within industry in the future. This will lead to organizations deepening their mission to act, for instance, environmentally. Furthermore, businesses will have comprehensive CSR policies that cover all areas of operations. Because of many actors are conscious consumers, reporting and information on CSR becomes a key for a business to succeed in CSR. If a company wants to fully benefit from having a comprehensive CSR, they must show legitimacy and governance. Because a company's aim is to generate revenue, it wants to implement CSR to support that. CSR may also protect the company from reputational losses. For instance, Brammer and Pavelin state that the implementation of a CSR practice could be "a means to demonstrate legitimacy" (2005: 41). This means that it becomes even more important that the company's "reputational capital" is protected, while the only motive may be to appear favourable.

In this possible scenario, the notion of being favourable and having good reputation could overtake the actual meaning of CSR that is to promote responsible business. Furthermore, the scenario builds on 'looking good' rather than 'doing good', which will result that transparency and the governance is not up to the standards. In other words, in this scenario company lacks having strong common values, transparency and credibility. While on the other hand the companies could promote themselves as socially and environmentally responsible, the implementation of CSR is still weaker than it is demonstrated. The fact is that CSR meets the legislative standards yet ethical business is only to appear favourable. Given this, the companies do not fully understand the values of CSR that is to respect the environment and the community while making a positive effect. As demonstrated, it is possible that future ethics of the CSR are compromised in this image of future.

Preferable Future Scenario

Another view of looking at the future ethics of CSR is to imagine a future of what we would prefer to happen in the future. A preferable future, another alternative scenario for CSR ethics could be a positive image of how companies would handle responsibility in the future. Given that, it could be in fact that the ethics of the CSR will develop into more righteous direction, which would be built on the values that

CSR embodies. This would entail companies respecting their values and staying true to company's own values. In addition to this, companies would see the potential of changing environmental issues for better with their business. These companies would also see that social and environmental issues are complex and often intertwined. Furthermore, companies would have a deep understanding of long-term sustainable business, which would mean that exceeding the limits of earth makes any business unsustainable in the long-run. In addition, the consumers would be informed and reporting on CSR would be up to date, as the companies seek to be transparent and have credibility among all stakeholders and consumers. This would also mean that reporting supports the targets and it is informative. In this case, business would go far beyond the legislative standards. In essence, this preferable scenario is about understanding that CSR is making a positive effect on the community and environment, and at the same time companies would stay true to these values. It is certain that better outcomes will follow if companies are transparent and engaged in CSR in a deeper level.

Discussion on Ethics and Complexity

As it could be seen, doing responsible business could be incorporated in strategy. However, it is evident that ethics in CSR are complicated to analyse. However, ethics could be a major contributor into the success of a company. Because of this very fact, a company could take advantage of using CSR as purely for economic grounds as it was demonstrated in the first possible scenario. When discussing ethics, one must always remember that ethics are a set of values and everyone's own set of values can influence analysis of this subject. On the contrary, Futurist Olli Hietanen has stated that future researchers should not have their own value-based ideology (Lecture slides, 2015). This also relates well to the ethics of CSR, as often an individual or in the case of a company, the management, has his or her own set of values. Often these values may relate to decision-making, because " ...this code of ethic can exert a major on his/her behaviour in organization " (Sharma et al, 204, 2004). Because of this very statement, it is certain that an individual's view on the practices of responsible business can differ from an individual to another. After all, it is certain that CSR and its underlying motives could be described as a complex problem, where there is no right or wrong answer. In addition, it is certain that there is no single solution to develop common ethics for CSR and not sure if that is even desired. Moreover, the attempts to understand future ethics of CSR are complex and images of the future could be a one way to tackle this subject. These kinds of problems could be referred as wicked problems. In other words, it is a "complex issue that defies complete definition, for which there can be no final solution, since any resolution generates further issues, and where solutions are not true or false or good or bad, but the best that can be done at the time" (Brown et al. 2010:4). Often in the case of Future Studies it can be seen that issues are in fact manifold and they often raise more questions than answers. The same idea is in line with ethics in CSR, since it is often hard to categorize responsible and irresponsible business. In addition, it is even harder to find solutions to all ethical issues that arise from corporate ethics. Because of this very statement, CSR must look into all aspects of being responsible, which makes it somewhat tricky. This could potentially lead to that "all conceivable solutions are unsatisfying in some respect" (Lecture Slides, 2015). Furthermore, it is evitable that value-conflicts can exists within CSR, which further demonstrates how this field is complicated and has many dimensions in it. After having said this, it is evident that there is no single conclusion on how a company should implement the practices to do responsible business and act ethically at the same time. From a futurist standpoint there is always an aim to have an improved future.

Conclusion

After analysing and discussing the ethical points of CSR, it can be said that it is no wonder that CSR is claimed to be cynical. Furthermore, it might even seem that the whole system of CSR is only driven by the aspiration to retain a positive image without thinking about the moral imperative to practice responsible business. On the contrary, scenarios of alternative futures could provide more insight and perhaps companies could benefit from scenario planning, which hopefully would contribute to ethical righteousness within CSR.

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Technology in the Classroom – The Ethical Futures of a Transforming Education

Amos Taylor
University of Turku, Turku School of Economics, Futures Studies

1. Introduction

In a recent Futures Ethics seminar discussion at the university of Turku, the future of education was posed as a problematic question by Anita Rubin, and my immediate response was to suggest the situation of the computer's arrival in the classroom, that MIT professor Seymour Papert had introduced amongst great debate, as people were surprised that children were to use computers in their learning. What was more surprising was the revolutionary way in which he conducted his classes, in open exploration of learning and knowledge that epitomised the people's computer movement of the 1960s. (Papert 1996, 1993) This scene summed up the importance of the transformation of education and a shift in thinking about education that fits so well for a futures approach. By exploring these concepts put forward by Papert and other concepts that reiterate the same need and perspective, I suggest the ethical issues become clear when considering the future of education fused with technology.

The ethical and value considerations of social, cultural and economic 'transformation', is the underlying issue that I am discussing here when approaching the merging of education and technology. Each of these terms themselves is heavily value orientated, and together they form perhaps the most interesting and affecting subject area that futures studies should engage. The works of numerous futures studies, sustainable development and education research have been examined to create this small study that would potentially be a fruitful larger study for the future. A further study could be to explore connecting these concepts in a global and third-world theory perspective, exploring deeper the digital divide and the different ethical roles and perspectives surrounding a sustainable transformation of education. Here however the essential ethical issues are presented surrounding Seymour Papert's pursuit for a transformation in education through computers in the classroom.

The Futures of Education

Italian Futurist Alfonso Montuori asks and answers a central question "Are we educating to envision new and better futures? Not if we follow a reproductive model of education. This is why more than ever we need an education that accounts for complexity and creativity. And why creativity is central for humanity's future." (Gianluca Bocchi et al. 2014, 364) The future then can be seen as entangled within the potential and restrictions of education.

Exploring the ethically sound aims of UNESCO's *Educating for a Sustainable Future* (1997), or the Millennium Project's '15 Global Challenges' education and learning (2014) reveal the fundamental basic human right to education and the meaning of education as a comprehensive development tool for social economic transformation, that is reiterated firmly. Education in this respect is one of the pressing issues when addressing change and the future. And yet it is current education that is problematic in the face of the future. Considering these terms Transition, change, crisis, rapid change. "... it is clear that our

educational systems do not prepare us for the emerging pluralistic, interconnected, complex world. They certainly do not prepare us for seemingly perpetual change, instability, and above all, uncertainty"(Montuori 2012, 64) Educators and education structures then need to address this problem of dealing with perpetual change and its complexities, new foundations for education then must be sought that are different from these unsatisfactory ones. Hicks and Gidley point the finger: "If educators do not help young people to feel empowered in relation to their future and future change then, it can be argued, they will have failed in their duty to the present generation of learners." (Hicks & Gidley 2012, 1-2) These are heated words that place the future generations at the will of education and its strategic policy, as the experience of education will form them, not only in their professional ability but also in their very identity, as for example the Finnish education ministry indicate that education essentially builds identity. The ethical and moral duty based on future lives and identities then could not be as important or as value driven.

Ethics in Futures Studies

Ethics in futures studies takes different perspectives from other disciplines, or perhaps a multidimensional perspective to ethics and values that pertain toward the future or that can emerge in the future. As Futures studies aim is broad and transdisciplinary – engaging many sciences to approach the future, where we can engage this subject broadly as this definition suggests: 'Futurists aim to discover or invent, examine and evaluate, and propose possible, probable, and preferable futures.'(Bell 2009, 43)

From its inception Futures studies has been built on and exploring the values and ethics of the past, present and future as can be seen in the Club of Rome's Problematique, or the French la prospective. Wendell Bell suggests in his value based thinking that futures studies engages the classic Good vs. Evil scenarios of the future, or perhaps rather light and dark to bring good back into value judgements.(Bell 2009, 44) But futures studies never simply explores just two sides, a positive or negative, favourable or unfavourable, but rather to engage headlong complexities. But Bell is of course is confronting what is good?, and how to decode it. Bell explains that taking a value based examination... *"moral discourse can become a part of the critical discourse of social science and, in turn, social science can become a foundation not only for the objective exploration of images of possible and probable futures, but also for the objective evaluation of images of preferable futures."*(ibid.) This can be interpreted - that in focusing on value and ethics related positions of future images (visions of the future) can be better understood and interpreted as to what they really represent.

The ethical issues surrounding technology is of particular interest as an ethical futures method in which to consider the consequences, potential problems and solutions associated with technology at different stages of its development, implementation and establishment. Phillip Brey systematically explores these, suggesting that there also needs to be an early level of ethical analysis and consideration even at the research and development stage.(Brey 2012) This can be added to Moor's 3 other stages of *implementation, saturation* and *power* levels. At each stage the problems and complexities increase. He explains: "Moor's Law: as technological revolutions increase their social impact, ethical problems increase. [-] Moor argues that ethical problems multiply as technology moves from the introduction to power stage."(Brey 2012) It is important to analyse these ethical dimensions at from different perspectives – *the study at the technology level, the artefact level, and application level,* -and where in this essay we will be discussing the application level of ethics of education related to technology, however the relationships between all these levels is important to consider.(ibid.)

At the application level Brey illustrates that "computer games may exacerbate social isolation for those individuals who already have weak social ties".(Brey, 2012, 311) This illustrates within the application of technology what problematic ethical effects there can be found within society, down to the individual. When discussing education in this manner it seems natural to consider ethical issues around the application, or the value debates and especially considering the ethical issues of this transformation of education. We can also consider current application that would have effects on the future (for example children learn to program computers at an early age) and also further future applications (children interact with artificial intelligence to explore knowledge development). The technology and artefact level, are based around the actual features of the technology and direct impacts because of the technology for example being 'environmentally harmful', or mobile phones unknown potential to contribute to brain cancer. These inherent characteristics are always important considerations when viewing technology, but it is in the application that we can find symbiosis with the application of education. These produce moral ethical issues for the future. Brey offers as a useful tool the *Anticipatory Technology Ethics Checklist* that I present here in order to outline what methods can be used to fully explore the ethical landscape and to point out how the topic of education and technology is intertwined in each of these issues.(Brey 2012, 313) The checklist includes; *harms & risks, rights -freedom, autonomy, human dignity, privacy, property, basic human rights (inc. to receive an education), Justice, social inclusion, wellbeing and common good*, to mention just a few of the main headings with several sub categories.(Brey 2012, 313) In each of these issues in dealing with the future of education, technology is in some way or another a potential ethical factor to consider, which can be applied to all Brey's three categories *application, technology, and artefact*. (ibid.)

2. Computers in the Classroom

The computer future – in a presentation on education and learning in 1990, Seymour Papert queried what experts, futurists and prophetsare asking - what will it be like? *What sort of a world will it be?* And he protests that this is the wrong kind of question to ask, as they are all wrong, he said "the question is not *'What will the computer do to us?'* The question is *'What will we make of the computer?'* The point is not to predict the computer future. The point is to make it."(Papert 1990) And in the essence of this, is the crucial position in which education should be seen as proactive and definitive, that outline two different worldview's of education one that is repetitive knowledge based, and the other that is experience knowledge based.(Montuori 2012) That the changes in our environment do not just *happen to us* and *effect us*, but we also have a hand in *affecting them*. This fits very well for a futures perspective and aids in navigating ethical issues dealing with technology and education. With this in mind we can understand better Papert's engagement with children as active learners and his empowering view of education that is exploratory in nature and future oriented. For Papert this difference in perspectives is an ethical question that encompasses what values are attached on children as learners.

The situation I want to underline here is the meeting of computers (technology) in the classroom that are representative of all future education technology debates and strategies, that Papert has pioneered. The arrival of the computer in the classroom stirred up strong ethical questions about the meaning of knowledge, teaching, and learning that to this day is a hot issue that brings up fundamental questions, for and against technology. It has been said people couldn't understand why Professor Papert would want to bring a computer into the classroom in the 1960s-70s, but he had a very pedagogic grounding in which to pursue this. Papert's view was long term and deeply routed in the cognitive way

in which we construct learning (Beycioglu 2001, 28). For Papert the arrival of the computer was to change everything: "The presence of the computer in this area will have a very deep impact, not only upon the nature of schools themselves, but upon the whole of human society. The way that the computer enters into learning will play a determining role in the way that both technology and the larger culture evolve in the coming generation." (Papert 1990)

The ethical problem Papert noticed was that the issue was focused centrally on technology in the classroom, he called this technocentrism, where people only focused on the computer in the classroom, but not what the students were actively doing with it.(Papert 1990) We can see this kind of perspective today in ethical discussions about children bringing personal technology – like mobile-smart-phones into the classroom. One proposed legislation for example reported in the news recently, suggested that they should confiscate smart-phones because they would be a distraction to learning, or that students were cheating in some manner. Which in specific ethical cases are real problems faced for traditional education learning settings. (YLE news "Authorities mull forceful seizure of students mobile phones" 2013) But through Papert's view, this as an opportunity for students and teachers to utilise technology in learning, and an example of a technocentric argument, focused centrally on the arrival of new technology rather than the student.(Papert 1990) Others also follow this same framework "embracing childhood and youth as empowered through digital media, and thus for educational provision which reflects such empowerment. It acknowledges the need for a 'quiet revolution' in education [...] that harnesses the considerable capacities of children and young people to engage in and co-construct possible futures, and to challenge some current assumptions about life on planet Earth." (Craft, 2012, 185)

On Seymour Papert's Constructionism

In the 1960s Seymour Papert MIT professor, developed a new approach to how children think and learn using new education approaches utilising technology in the classroom. Building on Piaget's theory of constructivism - building learning through action and interaction with their environment, rather than knowledge being transplanted from teacher directly to student. In this way the student actively constructed their own learning (Talah & Botterbusch 2013. 28). This was 'learning by making' and is the basis for what Papert saw through developing approaches to working with new technology within education where every person learns in their own unique way, where learning becomes more effective when students are actively creating meaningful artifacts.(Talah & Botterbusch 2013, 28) Constructionism deviates from normative education that works by repetition and reproduction of knowledge communicated from up to down, teacher to student. A clear hierarchical power relationship is dictated in normative education.

"I would like to emphasize the idea of *constructionism* as part of a theoretical approach [...] We need a social, historical theory to understand the way that technologies enter into society, how they are appropriated by society. We also need a theory about how they are appropriated by the individual."(Papert 1990)

Critical thinkers on technology Robins and Webster place special attention on Papert's process suggesting that it is in opposition to the normative way of teaching which would see the student as passive, doing drill and practice, in front of the computer, being programmed by the computer rather than actively participating in the programming construction.(Robins &Webster 1999, 189). "Papert envisages children as miniature programmers, arguing that 'in teaching the computer how to think, children embark on an exploration about how they themselves think'" - and thus teach them how to learn to

learn(Robins &Webster 1999, 188). *The authoritarian model is broken* – Papert has said, and the teacher is partner with the student in actively exploring and creating, changing the child's relationship to knowledge.(Robins &Webster 1999, 189.)

Can we consider constructionism a key in which to engage the pursuit of future education despite what new technology or innovation might have? By understanding *technocentrism as a fallacy* (Papert 1990) then we can indicate other ethical arguments based on what is actually done in the space of education, especially those that are in the pursuit of learning. Papert's constructionism can perhaps be interpreted as overly optimistic or *positivist* about the potential of the students ability to liberate themselves through computer literacy, where Papert sees the Computer as neutral, Robins and Webster consider the computer itself more complex and intertwined with problematic values.(Robins & Webster 1999, 189) Perhaps this is another ethical debate worth exploring, that futures research on the ethics of the information revolution have explored, examining claims made about the digital revolution in order to uncover the real inequity issues between rich and poor.(Burkett, 2000) However the beauty of Papert's approach is that the actual technology is in many ways secondary to the central issue of forming a new learning based education system away from the unprogressive model we have. In this way we can see different futures for education that can engage the important positivist value discourse that Bell has indicated.(Bell 2009, 46)

Ethical Transformations in Education and Technology

The diverse debate on the need for transformation in education is an ethical question in that the principles of education are flawed and serving old models. There are many debates about inequality, the digital divide, but here to set the scene for education transformation we should keep in mind Papert's position:

"It will be determined not by the nature of the technology, but by a host of decisions of individual human beings. In the end, it is a political matter, a matter of social philosophy and of social decision how we will remake and rethink our world in the presence of technology. When we talk about computers in education, we should not think about a machine having an effect. We should be talking about the opportunity offered us, by this computer presence, to rethink what learning is all about, to rethink education."(Papert 1990)

In 'rethinking education' we might understand better this dichotomy when approaching the power relationships to 'knowledge'. 'The problem of knowledge is arguably the oldest issue in western philosophy' describes Kelly on education and democracy, - "and epistemology the study of knowledge is its oldest branch. How can we have knowledge, or claim to have knowledge of the shifting and changing world in which we live?"(Kelly 1995, 55) – quoting Heraclitus' words "'You cannot step into the same river twice', everything we experience is impermanent, uncertain, unstable, unreliable, even deceptive. How can there be knowledge of such a world? And that is the central question of epistemology."(Kelly 1995, 55) Preference for certainty rather than uncertainty – secure in the view of knowledge as being fixed and permanent, especially in political unstable times is an assumption.(Kelly 1995, 56) This battle for knowledge is representative in the two views of education that we have discussed, where knowledge is in one case fixed and contained and protected – or reproductive education, and in the other view is experienced, shared and actively engaged through meaningful actions – constructionism. Montuori' defines this disconnect well, between the fundamentally different positions of education in which the other is the *Reproductive* education:

"Mainstream education across the globe, which I refer to as Reproductive Education, is still mired in the machine assumptions of the industrial age. Reproductive Education stresses conformity and homogeneity and suppresses creativity at a time when it is apparent that creativity needs to be mobilized to get beyond the decaying industrial views of modernity and envision new futures, new possibilities, new economic, environmental, social, and cultural and ethical systems. Reproductive Education may have been appropriate for the industrial assembly line and its orderly bureaucracy, but it is simply unable to confront the fluid, unexpected challenges of postnormal times "(Montuori 2012, 64)

Anna Craft, in a futures examination of *Childhood in a digital age*: *creative challenges for educational futures* - she elaborates on the futures perspective for education "Distinguishing between probable educational futures (where the emphasis is on prediction), preferable educational futures (where the emphasis is on narrowing choices) and possible educational futures (where many potential pathways are both emergent and available)" (Craft 2012,185) the project explores the latter in a way to deeply explore the values in digital tools that enable youth. Youth behaviour within education and the outside society are expressed. Through new technologies children's ethical issues are explored as childhood empowered, childhood part-empowered, or childhood at risk, and childhood at serious risk.(Craft 2012,184) "Educators need to be both creative and wise, to motivate and inspire children and young people, attending to the development of thoughtful, responsible and sustainable possible futures for themselves and others."(Craft 2012, 184) In the shift in values within education, where then are the humanities and the arts? Montuori expresses the need for creativity to be central but sees the attack on the future of creativity in education. "Creativity and imagination will be essential to envisioning and developing alternatives to the systems, structures, and processes that are presently failing us. But if the urgency and importance of creativity are clear, in education creativity is mostly conspicuous by its absence."(Montuori 2012, 64)

The Brain Drain

The issue of immigration is an interesting point to consider in connection to global education, called the 'brain drain'- where the specially educated move to other countries to find specialised employment, taking away the skills and knowledge from local regions. In America, where 50% of scientist and technology experts come from overseas, because the US has not produced people itself to fill these specialised positions. And thanks to a special immigration visa where the US has hoped to gain those extraordinary skills or knowledge, but that many countries including the US and Germany had tried to halt this action of immigration, until it became clear there would be no one to replace them within the US, and thus those new citizens were entitled to jobs.(Kaku 2011, 322). The movement of people can be explored as an education transforming ethical issue, where in this case knowledge is pooled from across the globe, and drained the talent and knowledge from those other regions.

In Singapore as a case posed by Michio Kaku, Asian students do better than other countries in science and technology, but they only reach a certain level because to find higher success you must have also an element of creativity, which the East does not nature in education. (Kaku 2011, 323) They lag behind in creating new products and strategies compared to the West. In Singapore they tried to tackle this issue, and Kaku says that this is perhaps one of the most interesting cases of social engineering in history, for transforming science and education. Realising that the innovative giants of Bill Gates or Steve Jobs would have been crushed by Singapore's suffocating system, the premier asked school teachers to iden-

tify 'future geniuses' who would revitalise the economy in a move to put Singapore in front of the information revolution. It was amongst a strict social order that they managed to do this.(Kaku 2011, 323) But the case is open to interpretation if this has really fundamentally changed anything, or has it manipulated its way into such a position, without changing the internal education radically at all to meet the future needs of coming changes. It has not benefited most of the students, just those new 'Gates or Jobs type' students (or whatever you might interpret that to actually be). It retooled its workforce perhaps, which is typical of many policy strategies within education, whereby noticing the lack in skills or quota of its future workforce they implement education that focuses on these subjects to stimulate a particular industry, but often at the expense of other disciplines. For example the UK's new education plan is to specialise on mathematics and science, pushing aside disciplines like media studies and other humanities. (Stratton 2011 The Guardian) These broad ethical choices made in the name of future generations adhere to the industrial needs of the nation, but in a similar manner to the Singapore strategy, it can be argued to be superficial and judgemental with a lack of understanding of the interdisciplinary and transdisciplinary shifts that are required for the transformation of education for the information revolution and knowledge economy. We can place this kind of thinking again to the used *future view of education* (Inayatullah 2008).

In a short-term-view these are ethically serving only the short term needs by matching skills and jobs and politically rewarding for those involved. However in a futures perspective this is ethically damaging for individuals free will, placing higher value on some lines of education and potentially eradicating others. There are value judgements made on the commercial merit and value of each subject as it is considered today, without considering what subjects and interdisciplinary connections could thrive in all possible futures. The ethical issues in defining strategies for education policy clearly then are important areas in which futures studies must undertake, that effect whole future generations. However, there is often a vast disconnect between policy and the schools or universities, teachers and pupils own strategies that should be taken into account. In the recent cuts for arts education, arts and creative industries organisations have reacted against the policy in the UK, outlining the economic growth potential that the creative economy is actually having and its importance for the future.(UAL News online 24.11.2014). This challenges the hierarchical nature of policy that seeks to recreate industrial products and systems from the past. We can see this as a means to an end model, that Bell has described as being useful to examine value issues.(Bell 2009, 50)

Others are also sceptical about the value charged language use of technology, computer literacy and digital revolution to actually address the real needs of developing nations. For example Grantham and Tsekouras remark "In order to address the dangers of exclusion from the benefits of the technology utilisation, [we] consider[] the concept of 'social exclusion' in a bid to challenge policy-makers' assertions that the information society—wireless or otherwise—can and will bridge the social divide." (Grantham & Tsekouras 2004, 359)

3. Conclusions

Seymour Papert presented an insightful anecdote at a OECD event discussing the need for a new direction in education, where he observed that children have a natural fascination for computers, and brave attempts need to be made in order to break the old model of education teaching and structures. He illustrates this central dynamic change:

"Back in the 50s the United States was somewhat embarrassed by the fact that the fastest transatlantic ocean liners belonged to European countries. France and Britain had faster ocean liners than they had [...] So American resources of technology and money were mobilized and led to triumph. They made the fastest boat in the world, the S.S. United States. In the very same year the first commercial jet plane flew and it became totally irrelevant which boat could travel faster across the Atlantic. I'd like you to hold that in your minds when thinking about school. Are we trying to perfect an obsolete system or are we trying to make *the educational jet plane*?" (Papert 2001, 112)

I see the work of Seymour Papert being akin to the spirit of Futurist Robert Jungk, who saw it important that people and especially youth being involved in the process to be actively building their own future.(Masini 1993, 26) Like Junk's participatory futures workshops, perhaps we can understand Papert's classroom as trying to construct values and capabilities for actively engaging the future, against the morally defunct authoritarian education model. I have presented many calls for the need for a change in education, in which the classroom I suggest is the battlefield for these values connected with change and also mark the transformation deep within our society. The value discourse I have uncovered around the transformation of education aided by technology, tells of the ethical division between the past, present and possible, - probable, - preferred futures. Where it is liberating to recognise the innovative perspective to focus on learning exploration than the technology artifact. Perhaps it is rather a simplified argument to place the whole of humanity's transformation in the setting of a school classroom. And yet there is perhaps no better investment for the future than in children and their education. Even simplified, evoking Papert's educational jet plane is liberating and compelling.

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FUTUS2 FUTURES RESEARCH METHODS

FUTUS2 Futures Research Methods (8 ECTS credits) course belongs to the Master's Degree Programme curriculum, and is typically studied during the first spring of the two-year programme. After this course the student is expected to understand the field of futures research methods, make an informed choice of a futures research method, compare the similarities and differences of futures research methods and apply several methods to specific questions.

One quarter of the course grade includes activity points scored in individual and group assignments during lectures. Three quarters of the grade are received from an essay, where the student compares two futures research methods with each other based on an individually performed literature search. The student is especially guided to read and review at least 10 articles published in three important futures studies journals: Futures, Long Range Planning and Technological Forecasting & Social Change. A default length of the essay is 3000–5000 words.

FUTUS2 essays were reviewed by the course teacher, Professor **Petri Tapio**.

In the year of 2016, two student essays stood out from many very good ones. **Jenna Puikkonen**'s paper compares online participatory methods with the Causal Layered Analysis (CLA) method. She sees the two methods as complementary and envisions how to use them both within the same study. The paper is written with excellent academic English, but what really strikes me is Jenna's way of moving fluently, even lightly, between theoretical concepts, methodological details and illustrative examples. There is a good balance of solid review on published sources and own creative thinking.

Liisa Haapanen's paper compares Cross Impact Analysis (CIA) with the Futures Table. The methods look similar at the first glance, which puzzles Liisa. If puzzled about something, then make a systematic account with cautious reading and analytical thinking, this is her recipe. The essay could be expanded to a review of scholarly calibre, as Liisa digs out the origins and discerns variants of the methods. This student is not fooled with the manifold names of rather similar techniques, such as the Field Anomaly Relaxation (FAR), Morphological Analysis and the Futures Table. She also relates the literature to pondering the choice of method in her own thesis.

Both papers have something in common. The students are able to problematize the topic, choose their own personal approach to review the methods, compare them systematically and – perhaps I should not say this – provide ideas that the professor has never thought of. Both Jenna and Liisa also show understanding and reflection of their own limitations. These papers gave me hope, that the old-school scientific endeavour with good, critical, thorough reading, thinking and writing still represent vivid virtues among the next generation futurists.

Two Matrices and Two Functions – Cross-Impact Analysis and Futures Table as Futures Research Methods

Liisa Haapanen
University of Turku, Turku School of Economics, Futures Studies

1. Introduction

In this essay I describe and compare two futures research methods: futures table and cross-impact analysis (CIA). The methods are visually similar but they have very different functions. CIA is used for examining interactions between future events and futures table is a tool for constructing images of future. If combined, the methods offer potential for enhancing the relevance and/or coherence of futures images and scenarios.

The essay is structured as follows: CIA is described in section 2 and futures table in section 3. These sections cover the history, use, main criticisms and contemporary application of these methods. In section 4, the methods are compared. Finally, possibilities of using these methods in my thesis is discussed in section 5.

2. Cross-Impact Analysis

2.1 Two Approaches to Cross-Impact Analysis

The first application of cross-impact analysis method was a game called Futures developed in 1966 by Olaf Helmer and Theodore Gordon (Gordon 2009a). A few years later, Gordon and Hayward programmed the method into a computer-assisted calculation method and published the first scientific article on CIA (Gordon & Hayward 1968). The motivation behind developing CIA was a need to take interactions between future events into account more systematically. The focus of Delphi and other futures research methods was – at least at the time – too much on examining single future events in isolation of each other. (Gordon & Hayward 1968.) The CIA was developed as a solution to this problem.

In this essay I separate between two different styles of CIA. The early variants of CIA focused on conditional probabilities and most likely scenarios (e.g. Dalkey 2002 [1975], Turoff 2002 [1975], Gordon 1969). This style is widely used even today (e.g. Medina et al. 2015, Bañuls & Turoff 2011, Choi et al. 2007, Blanning & Reinig 1999). In this essay, I call this style "the probabilistic approach". In recent years, an alternative approach to CIA has also become popular, aimed at identifying most influential elements of complex systems (see e.g. Alizadeh et al. 2016, Videira et al. 2014, von Wirth et al. 2014). Instead of probabilities, this approach operates on the number and strength of interactions and it is called here as "the activity approach".

It should be noted that the abovementioned classification is not exhaustive. The number of references in this essay is quite small and a more systematic and comprehensive literature review might result in a very different classification of CIA approaches. In addition, there are exceptions even among the references of this essay that do not represent either probabilistic or activity approach. Kane (2002

[1975]) introduces a graphical simulation tool that utilises CIA and is intended for non-expert users interested in (sometimes counterintuitive) dynamics of complex systems. Gordon's (2009b) interactive scenario tool based on CIA resembles Kane's idea. These two variants could perhaps be named as "the simulative approach". There are also borderline cases: Turoff's (2002) version lies somewhere between the probabilistic approach and Kane's variant (see also Bañuls & Turoff 2011). All in all, the classification used here serves the purposes of this essay only. It covers and highlights two common CIA approaches.

The structure of section 2 is as follows: First the probabilistic approach is described (section 2.2.). Then an overview of the early criticism of the probabilistic approach of CIA is provided (section 2.3.). After that, the activity approach is portrayed and compared to the probabilistic approach (section 2.4.). It is also examined which problems of the probabilistic approach are solved by the activity approach and which problems remain unsolved.

2.2 The Probabilistic Approach of CIA

CIA is a quantitative method for analysing data. In the case of probabilistic approach, the data is judgements of initial and conditional probabilities of future events. The judgements are usually obtained from experts, for example via a Delphi questionnaire. (Gordon 2009a, Dalkey 2002, Turoff 2002, Gordon 1969, Gordon & Hayward 1968.) It should be kept in mind that the expert's estimates are inherently subjective in nature. For example Varho and Tapio (2013) describe CIA as a heuristic method.

As the approach focuses on probabilities it emphasises probable futures – which futures are probable when interactions are taken into account? In addition, it directs attention to uncertainties and complexity. In CIA scenarios are interpreted as chains of occurring and non-occurring events. (Amer et. al 2013, Gordon 2009a, Turoff 2002, McLean 1976, Gordon 1969, Gordon & Hayward 1968.) A number of scenario calculation methods and accompanying software have been developed based on CIA (see e.g. Amer et al. 2013).

There are different variations of probabilistic approach, for example some refer to Bayes theorem (Dalkey 2002) or utilise models of quantum mechanics (Turoff 2002). The equations used vary accordingly. Here, I will examine only the general procedure of CIA based on the common features of applications by Gordon (2009a), Dalkey (2002), Turoff (2002), Gordon (1969), and Gordon and Hayward (1968), and the mathematical details are omitted.

Table 1. *A cross-impact matrix with initial and conditional probabilities. Source: Gordon (2009a).*

		The Probability of this Event Becomes:			
If This Event Occurs	**Initial Probability**	**1**	**2**	**3**	**4**
Event 1	0.25		0.50	0.85	0.40
Event 2	0.40	0.60		0.60	0.55
Event 3	0.75	0.15	0.50		0.60
Event 4	0.50	0.25	0.70	0.55	

The CIA process begins with selecting a number of future events or factors for closer examination. This can be done on the basis of literature review, Delphi or workshops. In the probability CIA, distinguishable, unique events are preferred (Turoff 2002 [1975]). After that, the initial probabilities are estimated ("what is the probability that event n occurs?"). Then, the conditional probabilities are estimated ("If event n occurs, what is the probability of event m?"). The estimates are presented in the from a cross-impact matrix (Table 1). Before the next step, a coherence test can be conducted if it is found necessary.

Next, the cross-impact matrix is calibrated by "playing" the matrix through several times. Usually two arguments are provided to justify the need for calibration: the network of interactions between the events is so complex that even experts are unable regard them fully and systematically and/or subjective probability estimates may contradict probability theories. An event and a number between 0 and 100 (or 0 and 1) is selected at random. If the number is smaller than the probability of the event, the event is thought to occur (for example, if P(n)=63 % and the number is 43, then event n occurs). According to the occurrence or non-occurrence of the event, the probabilities of the remaining events are adjusted. This is repeated until all events are "played". This represents one round. Several rounds are played (usually the process is computer-assisted and the number of rounds is high, e.g. 1000) and the resulting new probabilities replace the original probability estimates. Turoff (2002 [1975]) introduces an alternative calibration procedure where the matrix is played somewhat differently to provide a most likely scenario and the respondent is asked to review his probability estimates if the scenario does not resemble his idea of what the resulting scenario should be.

After calibration the matrix can be used for sensitivity tests or policy analysis. In both cases, the probability of one event is increased or decreased. In policy analysis this manipulation represents the effect of the policy. Then, the matrix is rerun to see how the probabilities of other events change (see Table 2). According to Gordon (1969) and Kane (2002) human brain is often unable to fully comprehend the complex network of interlinkages between events, and therefore, this kind of a policy analysis can reveal unintended or counterintuitive consequences of policies.

Table 2. An example of a policy analysis test where the probability of event 3 is changed to 100% i.e. the event occurs. The last two columns show the test results. Source: Gordon (2009a).

TEST OF OCCURRENCE OF EVENT 3

Event	Initial Probability	Test Probability	Final Probability	Change
1	.15	.15	.14	-.01
2	.20	.20	.20	.00
3	.25	1.00	1.00	.00
4	.10	.10	.12	.02
5	.20	.20	.13	-.07

An important extension of CIA is the incorporation of time dimension i.e. taking into account time lags of causal relationships (Asan & Asan 2006). Another example of a recent study that draws on the probabilistic approach is Medina's et al. (2015) research on investment barriers of concentrated solar power in Morocco. Their approach is quantitative and they operate on probabilities. An important as-

pect of their study is an effort to develop CIA further by increasing the number of events under examination. One weakness of the CIA method is that the number of estimates required increases exponentially when the number of events grows (Gordon 2009a, Medina et al. 2015). Therefore, the number of events has to be usually kept quite low. Medina et al. (2015) try to overcome this weakness by grouping the events (or barriers of investment in their case) with factor analysis. In effect, the level of abstraction is raised. What is more, Medina et al. asked experts to estimate the overall importance of each event instead of pairwise conditional probabilities, and this data is then analysed with regression analysis in order to derive conditional probabilities. This procedure reduces the number of initial estimates that the experts need to provide even further. Medina's et al. ideas are interesting but, in my opinion, the notion of importance should have been more clearly defined in order to ensure that the experts understand the question similarly.

2.3 Some Criticisms of the Probabilistic Approach

The CIA method faced substantial criticism in the 1970's. A number of things were criticised. Here, I will present only some of the main critiques.

One obvious shortcoming of the CIA is it that takes into account only pairwise interactions while higher-order interactions i.e. different types of joint occurrence or non-occurrence of three or more events remain out of its scope (Gordon 2009a, Dalkey 2002 [1975], Turoff 2002 [1975]). This is due to the fact that scrutinizing joint (non)occurrence is a very challenging task cognitively and mathematically (Dalkey 2002). However, these higher-order linkages can be significant. Regarding futures research, a crucial question is whether scenarios are plausible if higher-order interactions are omitted. In my opinion, this limitation does not render CIA (or scenario construction in general) futile. These limitations should, of course, be kept in mind but incorporating at least first order interactions to the analysis is far better than leaving all interactions out.

Dalkey (2002 [1975]) and McLean (1976) raised a fundamental question about the purpose and usefulness of CIA: are the final, calibrated probabilities more accurate than the initial judgements made by the experts? The assumption is that the input of experts can be internally inconsistent since they are unable to systematically take into account all interactions even when they try be as comprehensive as they can (see e.g. McLean 1976, Gordon 2009a, Gordon & Hayward 1968). This assumption might very well be true, but the question is whether consistency tests and calibrations suggested by the developers of the method result in more accurate estimates. To be honest, the mathematical equations proposed by the early CIA developers were quite complex and I feel that I'm not in a position to evaluate them.

In his critique, McLean (1976) cites an acronym "GIGO" used by computer programmers which stands for "garbage in, garbage out". He also writes that "no amount of mathematical manipulation can turn a bad forecast into a good one". I think McLean's argument is quite strong and it provides a good rule of thumb for any scientific endeavour: if the initial data is biased or flawed, the results can hardly be any better.

However, data is never perfect and one always needs to consider what remains out of scope. This is partly an epistemological question. In this regard, Kelly's (1976) and McLean's (1976) critique provide important insights. They criticised CIA as an inappropriate tool for scrutinising social systems since CIA captures simple pairwise interactions of a small set events by isolating the events from their societal context. What is more, they remarked that accurate probabilities cannot be calculated for societal events since social systems do not follow the same logic that physical systems (Kelly 1976, McLean

1976). I agree that we have (as of yet) no way of knowing what the "true" conditional probabilities of complex social developments are. In fact, these problems were considered already by Gordon and Hayward in 1968 as they wrote:

> *"If the fields with which we were dealing had been exact sciences, precise answers could have been produced. However, there is no theory of causality in the fields investigated. In these inexact areas there is currently no substitute for judgment. Our answers were therefore of the sort: 'From experience and intuition it appears that D_n may be enhanced (or inhibited) if D_m were to occur.' Certainly some of these judgments were in error; however, the orderliness of the matrix forces the investigator to be explicit about the relationships he believes to be functioning in his field." (Gordon & Hayward 1968.)*

All in all, one can doubt the epistemological soundness of searching accurate probability estimates for complex social developments. Kelly (1976) perhaps emphasised this perspective when he advised that CIA should be abandoned altogether. However, CIA can be used to other purposes. McLean (1976) understood this and suggested that CIA should be used as a heuristic tool that provides some insights on interlinkages within complex systems. It seems that the activity approach, which is examined next, follows this line of thought.

2.3 The Activity Approach of CIA

In this section I present the activity approach as described in Alizadeh's et al. (2016) study on futures of Iranian energy industry, Videira's et al. (2014) study on degrowth proposals and von Wirth's et al. (2014) study on urban transformation dynamics in Limmattal region of Switzerland. None of these articles are methodological articles but they have a strikingly similar approach to using CIA.

In the activity approach the purpose of CIA is to identify those events, elements and trends that are most active and influential in the examined system. Instead of probability estimates, data consists of estimates concerning the number and strength of interactions between the examined factors. Compared to the probabilistic approach, this is a very different starting point for analysis and the question on the accuracy of initial and "corrected" probability estimates is no more relevant. However, the higher-order interactions remain outside the scope of activity approach too. An important difference between the approaches is that the probabilistic approach is tied to more distinct events for which probabilities can be estimated but the activity approach allows inclusion of larger and more indefinite elements to the analysis[1]. The activity approach is also mathematically much simpler – to the extent that the activity approach could be described as semi-quantitative.

The process of conducting the activity type of CIA is following: The first step is similar to probabilistic approach. Based on literature review, Delphi or workshops, the events, factors or other compo-

[1] For example Videira et al. (2014) utilise the activity approach of CIA when they study general degrowth proposals such as "house sharing". In the probabilistic approach, the general notion of house sharing would have to be replaced with a more specific event such as passing a certain law on house sharing incentives or reaching a certain percentage of population who share their home with non-relatives (see Turoff 2002).

nents of the examined system are identified and defined. Then experts or other stakeholders participating in workshops or Delphi are asked to evaluate interactions between components. Simplest application is to ask whether there is a cross-impact or not. A somewhat more refined style is to ask the strength of the interaction, for example on scale 1-3 (low-intermediate-high). The most refined version is to incorporate also the direction of the impact (negative/positive), i.e. on scale

-3...0...3. The data is displayed in a cross-impact matrix and for each factor both an active and passive sum is calculated (see Table 3). Active sum is simply the sum of all interactions that one variable has on others. Respectively, passive sum is the sum of all interactions that the other variables have on the variable in question. If the data covers also the direction of the impact active and passive sums are calculated using absolute values (so that the negative and positive numbers do not cancel each other).

Table 3. A cross-impact matrix that represents the activity approach. Value 1 = interaction between variables. Value 0 = no interaction. AS = active sum where values in rows are summed. AS percentage is calculated by dividing each sum of a row by the largest AS. PS = passive sum where values in columns are summed. Source: Videira et al. (2014).

Proposal effect: from ↓ on →		A	B	C	AS	%
Variable A	A		1	0	1	50
Variable B	B	0		1	1	50
Variable C	C	1	1		2	100
	PS	1	2	1		
	%	50	100	50		

On the basis of active and passive sums, an activity-passivity grid can be formed (see Fig. 1). In the grid, variables are grouped into four categories. The terms used in an activity-passivity grids vary. Figure 1 shows the terms used by Videira et al. (2014): 'reactive', 'critical', 'buffering' and 'active'. For example, von Wirth et al. (2014) use the term 'ambivalent' instead of 'critical', and Alizadeh et al. (2016) have named their matrix as 'influence-dependence' matrix. Regardless of the terms, the idea of the grid remains the same. Interestingly, also some of the recent applications of probabilistic CIA (e.g. Medina et al. 2015, Choi et al. 2007, Asan & Asan 2006) visualise their results with a similar 2x2 grid. In the probabilistic approach the results are of course obtained with a different procedure, but the popularity of influence-dependence grid demonstrates that there are also similarities between the approaches.

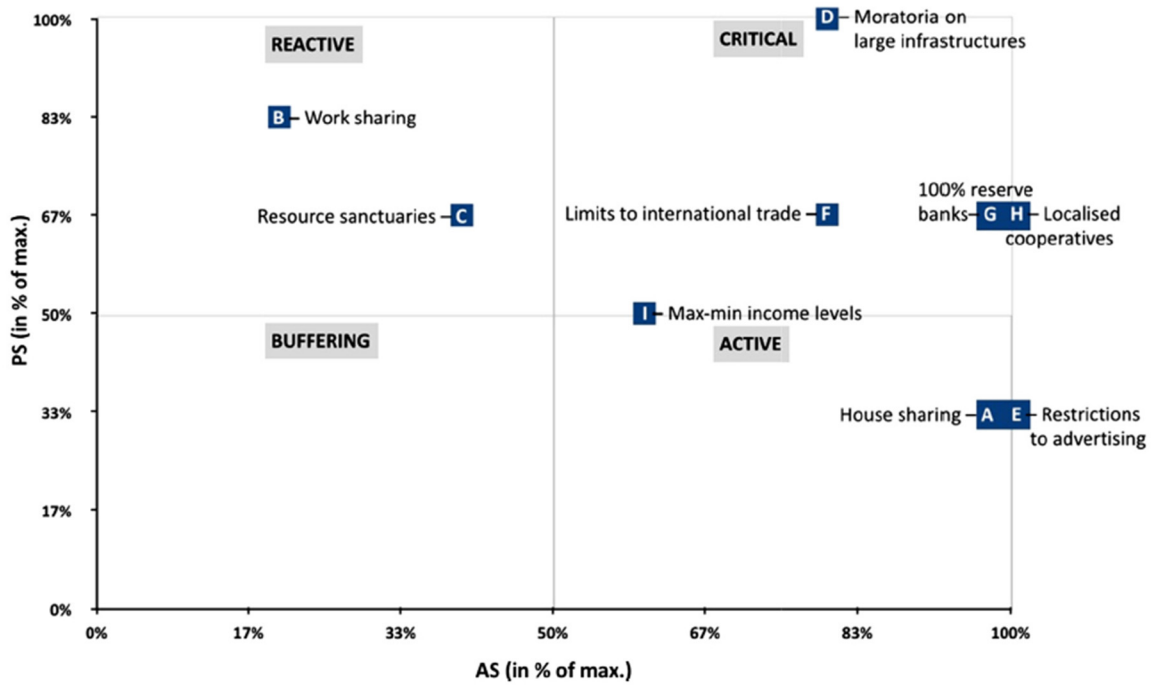

Figure 1. *A 2x2 grid showing the activity and passivity of elements under examination. AS = active sum, PS= passive sum. Source: Videira et al. 2014.*

3. Futures Table

3.1 Origin of the Futures Table Method: A Finnish Tool for Constructing Future Images and Scenarios

The futures table method was developed by Yrjö Seppälä in 1980's (Seppälä 2013 [1993]). Seppälä mentions two methods as predecessors of futures table: morphological analysis (see e.g. Godet et al. 2009) and Field Anomaly Relaxation (FAR, see e.g. Coyle 2009).

I was able to find only journal articles referring to futures table method that were written by researchers that either are Finnish or at least have worked at Finnish Futures Research Centre. In addition, futures table was not mentioned in any of the FUTUS2 course literature (for example The Millennium Project CD-ROM on futures research methods or Amer's et al. 2013 article on scenario construction). Thus, futures table seems to be a prominently Finnish tool.[2]

[2] It is noteworthy, that methodological articles concentrating solely on futures table have not been published in any of the scientific journals in the field of futures research. A description of "Q2 scenario technique" by Varho and Tapio (2013) comes closest, but futures table is only one of the methods utilised in the Q2 technique. Perhaps we could do better in marketing this Finnish invention? The upcoming English translation of the book Miten tutkimme tulevaisuuksia with Seppälä's original article on futures table is a good start but a methodological journal article on the current state and applications of futures table might be in order.

3.2 Description and Use of Futures Table

Futures table is used for organising data and presenting results. The method concentrates on possible futures and emphasis is on finding different kinds of views of future. Both qualitative and quantitative information can be inserted to the table (Seppälä 2013, Varho & Tapio 2013). The description of the method provided here is based on articles by Kuhmonen and Kuhmonen (2015), Seppälä (2013), Varho and Tapio (2013), and Vinnari and Tapio (2009). Each of these applications has some original features but the basic procedure is similar. First, different elements relevant to the subject of inquiry are selected. The choice can be based on literature review, Delphi or workshops. Varho and Tapio (2013) use the term 'theme' when referring to qualitative elements and 'variable' when referring to quantitative elements. These elements form the rows of the futures table. Different future states of each element are then inserted to the table cells, and the "raw", initial version of the future table is ready. The elements and their futures states can be derived from literature, interviews, workshops, Delphi or a combination of these.

Seppälä (2013) provides two guidelines for composing a futures table: picking pearls and piecing the puzzle together. The former refers to selecting the most fruitful ideas and the latter refers to covering the topic at hand comprehensively. I interpret that Seppälä emphasises the importance of finding a balance between being creative and being systematic. In addition, Seppälä suggests discarding ideas that do not fit under any theme. This is perhaps necessary for the sake of consistency but I wonder whether this results in omitting weak signals and black swans from the process?

The raw version of futures table resembles very much the tables composed in FAR and morphological analysis. The subsequent steps, however, are quite different. In FAR and morphological analysis, inconsistent combinations of future states are eliminated systematically, and scenarios are constructed based on the remaining combinations (Coyle 2009; Godet et al. 2009). Inconsistent combinations are also avoided in the futures table method but the process is somewhat less systematic and more intuitive as it continues by combining one cell from each row into a coherent and interesting configuration. These configurations are usually static futures images but sometimes they include features of scenario pathways (see below for further discussion). The aim is to create multiple views of future that are relevant and insightful. Seppälä (2013) emphasises differentiation between the views and suggests calculating a difference index. After deciding on the combinations, the cells are reorganised so that a column represents a future image/scenario. This way, the final futures table is produced.

According to Varho and Tapio (2013) "FAR method can excessively reflect the users' prejudices on the subject" if the definition of inconsistent combinations is based on a too narrow understanding of what is possible. This is a good point. However, I think that the same holds true for futures table method since internal coherence of futures states is a selection criteria also in this method.

Seppälä (2013) describes different styles for creating combinations of futures states. One can start with inventing a name for the future view and then pick future states that suit the name. An opposite style is to first select the future states and then come up with a matching name. A midway style is to have a dominant theme that guides the selection of other future states and name. Varho and Tapio (2013) have developed a different kind of solution (see section 3.3.).

As mentioned above, the combination of futures states usually forms a static image of future (see e.g. Kuhmonen & Kuhmonen 2015, Vinnari & Tapio 2009, Seppälä 2013). That is, only the future end-state is presented in the futures table, not the full scenario pathway leading from present to the future

end-state. Varho's and Tapio's (2013) research on the future of Finnish transportation sector is an exception. They have incorporated some future time series (e.g. share of biofuels in 2020, 2030 and 2050) into their futures table. Thus, Varho's and Tapio's version includes some details of the scenario pathway. Nevertheless, the futures table is always a kind of skeleton – the final stage of the process is fleshing out the details by writing a more elaborate description of the future images and/or scenarios.

3.3 Some Recent Modifications of the Futures Table Method

In this section I briefly describe two recently published modifications of the futures table method. Varho and Tapio (2013) have developed a Q2 scenario technique where they utilise futures table in summarising and combining qualitative and quantitative data. In this version, I found particularly interesting the role of cluster analysis in selecting the combinations of future states and composing scenarios. Varho and Tapio processed quantitative data with cluster analysis and the resulting clusters formed the core of scenarios. Seppälä (2013) described three different styles for creating combinations of futures states, for example taking either a name or a dominant theme as a guiding principle. Varho and Tapio introduce a new, alternative style which is based on clusters.

Kuhmonen and Kuhmonen (2015) have developed an interesting modification of the futures table method. They study future images of rural areas in Finland. Instead of individual themes, Kuhmonen and Kuhmonen identify 11 thematic dimensions which are, in effect, continua. For example, the theme "settlement structure" is described as a continuum between decentralisation and centralisation. Different points on the continuum represent different future states. The future images are constructed by selecting a point on each of the 11 continua (see Fig 2.). As Kuhmonen and Kuhmonen mention, the level of abstraction is high in this approach. This allows an effective and comprehensive overall view of the subject at hand.

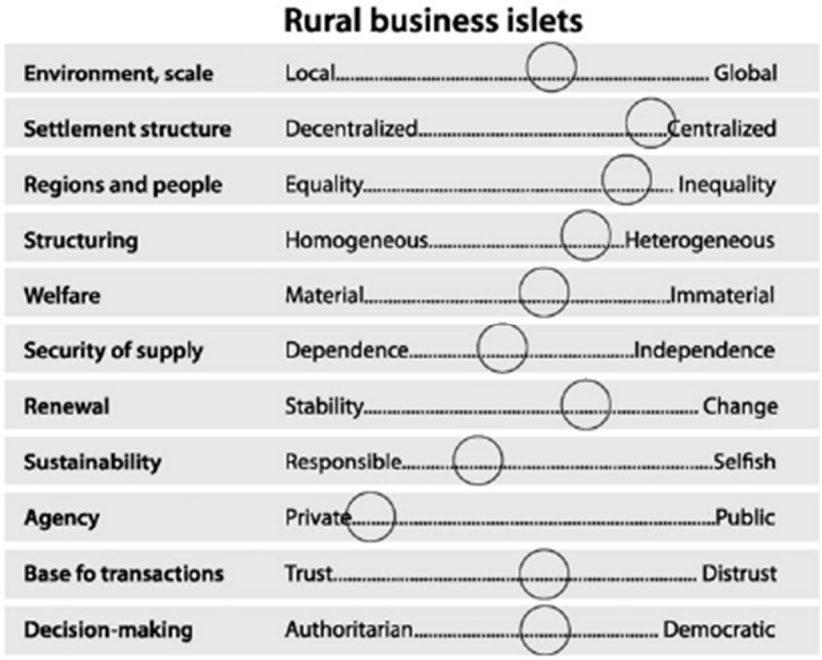

Figure 2. *A future image called "rural business islets" presented as points on 11 different continua. Source: Kuhmonen and Kuhmonen (2015).*

4. Comparison of the Methods

I partly selected CIA and futures table as topics of this essay since they were visually similar, i.e. the table form is utilised in both methods. These methods are very different in almost all other aspects. They serve different functions. CIA is a method for analysing data whereas futures table is a tool for organising data and representing results. CIA is a quantitative (or at least semi-quantitative in the case of activity approach) but the futures table method as such does not include performing any calculations. The methods have a very different diffusion, as CIA is used internationally but futures table is a prominently Finnish method.

Besides table form, the methods have one thing in common. The topic of inquiry is divided into smaller elements and some of the elements are chosen for closer examination. In both methods, this is a crucial stage. If something relevant is left out, the whole study can become defective. On the other hand, only a limited number of elements can be included since the number of possible combinations rises quickly above our cognitive capacity. The aim is to find a suitable number of key elements.

CIA and futures table can complement each other. For example, the most influential components identified with CIA can form a part of a futures table. This could add to the relevancy of the futures table and, therefore, also to the quality of futures images and scenarios that are based on the table. Events examined in CIA could be future states i.e. cell entries in futures table, and larger elements examined in CIA could be rows. Or, one can first compose a futures table, and then use CIA to explore the interactions between some rows or cell entries. CIA could also be used as one means to test the consistency of scenarios derived from a futures table process. For example, CIA can reveal that that the scenario contains events that have a strong negative impact on each other.

5. Applicability the Methods in My Thesis

In my thesis I use Delphi and scenario workshops for gathering data, futures table for organising data and scenarios as a tool for representing the results. Of these methods, I'm least acquainted with futures table, so I saw this essay assignment as an opportunity to correct the situation. Looking at the methodological palette of my thesis, one shortcoming is obvious: I have not made a decision of data analysis methods. This is partly because I'm not sure yet whether I will gather only qualitative or also quantitative data. Nevertheless, I should explore the possibilities. I chose CIA for closer examination because, as a tool for mapping interactions between elements of complex systems, it might be suited for the topic of my thesis.

Now that I have acquainted myself with CIA, I think that the probabilistic approach of CIA is not suitable for my thesis. There are two reasons for this. First, the focus of this approach is on probable futures whereas the focus of my thesis is on preferred futures. Second, I examine large societal and the level of abstraction is quite high but the probability approach is best suited for scrutinising single events for which probabilities can be estimated. The activity approach could, at least in theory, be useful as a complementary method when examining dynamics and uncertainties related to realisation of sustainable society without growth.

Learning more about the futures table has strengthened my decision decided to use this method in my thesis. In the thesis, I will construct multiple scenarios of a society without growth. I'm going to conduct a literature review and form theoretical scenarios based on it. Here, futures table has two functions. On one hand, it is a tool for summarising the themes found in the literature. On the other hand, it

is also a method for constructing scenarios. Before writing this essay I had planned that I would use to futures table for constructing and presenting future images while the full scenario pathways would be sketched with written storylines. Yet, variants of futures table introduced by Varho and Tapio (2013) and Seppälä (2013) have inspired me to utilise futures table as a tool for sketching the pathways too. Seppälä described not only future end-states but also the present situation in his futures table. Varho and Tapio incorporated future time series (e.g. share of biofuels in 2020, 2030 and 2050) into their futures table. I intend to combine these ideas. I could first describe the present and future end-states in one future table. Then I could delineate the intermittent stages between present and each end-state systematically, as illustrated in table 1. With this approach, written scenario narratives are still needed for elaboration but the intermittent stages included in the futures table would guide and back up the process of writing narratives.

Table 4. An example of how scenario pathways can be sketched in a futures table.

	Present	Scenario 1		
		Intermittent stage, year 2025	Intermittent stage, year 2040	Future end-state 1, year 2050
Theme A				
Theme B				
Theme C				
etc.				

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Revealing the Emotional Experiences of the Public – Causal Layered Analysis (CLA) and Online Participatory Methods in Futures Studies

Jenna Puikkonen
University of Turku, Turku School of Economics, Futures Studies

1. Introduction

One of the main objectives of futures research and using futures research methods is to better understand the present in order to see what might happen in the future. Even though one cannot predict the future, by using futures research methods one can create, examine, and test different futures in a systematic way. (Glenn 2009a, 2.) By examining possible consequences of different decisions, policies and events in the present, one can be better prepared to future opportunities and threats.

Futures research methods can be used for researching not only possible and probable but also preferable futures. Furthermore, some of the futures methods include "social design and engineering", with the goal of making society better place to live. (Bell 2009, 239.) Research can be done in a smaller or larger scale, in complex or more linear issues and in any field of interest concerning questions from society to organizations and companies and even to one's own personal life and future development in it.

In futures studies, considerable diversity of different methods, both quantitative and qualitative, can be identified. Some of the methods can be used in a very straight-forward way taking just a little time, where as others are more complex and using them takes a longer period of time. The choice of futures studies method depends on the objective of the research. Choosing the most appropriate method is important but even more important is to use the chosen method right. (Bell 2009, 240.) Also, in many cases, to get the most accurate results, it's advisable to use different methods within a research, rather than using just one (Glenn 2009a, 4).

Futures research methods can be divided into at least four categories depending on what part of the research they are the most suitable for. Some of the methods are suitable for collecting data, where as others can be seen more as a method or tool for analyzing and organizing data, or representing research findings. Borders between these categories are not strict and many of the methods can belong to more than one of the categories. (Tapio 2016.)

Futurists use methods from different fields of science. Most of the futures studies research methods are similar to the methods being in use for example in social sciences and only a few methods are developed initially by futures researchers. What then distinguishes futures research methods from the methods used in other disciplines is the future oriented purpose, rather than just the characteristics of the method. (Bell 2009, 242.)

In this essay I will examine two futures studies methods that might might be useful and appropriate for example when solving complex issues regarding future society and its structure. As an example, I will briefly reflect the methods to current issue of future of work and livelihood. Firstly, I'll examine participatory methods. Importance of input from the public and insight for example on people's needs, habits and threats, has been recognized more in the recent years. By gaining insights on public by letting

people to participate on development and decision-making, might enable better decision-making and commitment of the public to these decisions and their outcomes. In addition, ever-growing technological possibilities have made it easy to participate over the Internet. Therefore, I'll concentrate on examining possibilities of online participatory methods and especially on online focus groups and crowdsourcing.

Secondly, I will examine use of Causal Layered Analysis (CLA) method developed by Sohail Inayatullah. Goal of the CLA is to create new spaces of thinking by analyzing and interpreting data through different levels of an issue, from surface of the phenomena to the deeper, emotional experiences on the issue (Inayatullah, 1998, 1). For decision-makers, understanding not only the surface levels of the issue but also deeper thoughts and habits behind it, might give better chances to be prepared to future threats and possibilities.

To finish, I will discuss and reflect my thoughts on the methods. I'll give my thoughts on how the methods could be combined, developed further and how I could use them in my future futures research projects and especially in my master's thesis.

2. Online Participatory Methods

Participatory methods in general

Throughout the history of humankind, people have taken part into public debate and decision making regarding policy processes. From the more recent examples, for example voting can be seen as "an early form of public participation in the political process". Polling started in 1824 in USA and use of marketing research, involving public opinions, in late 1880s. (Glenn 2009a, 1.)

Importance of involving the public for example in development and decision making has been recognized as more and more significant in the recent years. For example, European commission has acknowledged that it is important to put more emphasis and value on public input and one major part of its political agenda has been declared to be "from science in society to science for society, with society" (Heidingsfelder et. al 2014, 291). If one is to research for example future of work and livelihood, voice of different people representing different worldviews and life-stages should be included.

Participatory methods are especially of use in researching preferable futures, future images and desires of the participants. Hearing people's thoughts can be useful for example when designing new societal patterns and policies that aim at betterment in society. (Bell 2009, 23.) Involving and incorporating people whose lives will be effected by the policy or other decision, increases their commitment to the future outcomes of the issue in question (Bell 2009, 299). Nevertheless, the role and responsibility of the researcher shouldn't be underestimated. To avoid unrealistic expectations and to create relevant strategies, it's advisable to create visions and images of future in collaboration with those who do the more analytic research. (Glenn 2009b, 3.)

Traditional participatory methods in futures studies include for example focus-groups and opinion-polling, future workshops, public Delphi and gaming and simulation.

Participatory can mean meeting in one location, face-to-face or it can be arranged so that participants are in disperse locations and don't necessarily even participate simultaneously, meaning that participatory is executed for example over the Internet. (Glenn 2009b, 3-4).

From face-to-face meetings to online co-creation platforms

Stewart & Williams (2005) define traditional face-to-face focus groups "as an organized group discussion around a given topic, which is monitored, guided if necessary, and recorded by a researcher". Goal of focus groups is to produce data by utilizing interaction among a group of people. (Stewart & Williams 2005, 398). Online focus groups could be defined similarly, adding the fact that participatory happens in online environment. In the era of technology, it would be important to think of new ways to incorporate people in research processes. It might give more thorough insights if people could participate when it's the most suitable for them and from the location most convenient for them. Even though importance of face-to-face focus groups and workshops cannot be underestimated, in some cases it might be easier to involve people if participatory was be web-based and participants shared their thoughts for example via web-based participatory platforms.

Online focus-groups gained popularity first in marketing research but have later been in use also in other fields of research (Stewart & Williams 2005, 395). Compared to face-to-face focus groups, pros of the online focus-groups include for example that participants can flexibly participate from different locations and at a different time, they can be examined for a longer period of time and it's easier to manage also larger numbers of participants, especially if participatory isn't in real-time but participants communicate when it's the most convenient for them. This not-real-time, "asynchronous" participatory might also enable participants to have more depth and consideration in their communication and answers. (Stewart & Williams 2005, 413.)

Some of the cons of online focus groups include finding and recruiting suitable individuals for the group and commitment of the participants, who might initially be interested to take part but because of temporal and spatial flexibility and lack of face-to-face commitment, might easily withdraw. Facilitating online focus groups might also be more difficult than moderating conventional face-to-face focus groups.

Especially if discussion is executed real-time, for example in an online chatroom, the speed of the discussion and frequently changing topics require more skills and experience from the researcher facilitating the discussions. Also interpretation of data might be more demanding because non-verbal communication, such as expressions, movement and group dynamics, is missing from interaction with and among participants. (Stewart & Williams 2005, 405 & 409.) In order to make using online focus groups as a method more valid and reliable, the process of analyzing and interpreting data collected from digital environments needs still more exploration. (Stewart & Williams 2005, 413.)

Development of technology and especially technologies based on the internet, has had a great effect also on successful development and implementation of crowdsourcing as research method. Crowdsourcing can be defined as a web-based tool, platform or method that can be used for example to produce data in collaboration among larger groups of participants. As Certomà et. al (2014) define it, crowdsourcing enables "multiple web-based problem-solving, by involving large groups of users who perform functions that would otherwise be difficult to automate or expensive to implement". (Certomà et. Al 2014, 93-94.) Even though more specific and consistent definition of crowdsourcing might be difficult to provide, one rule of thumb can be defined: crowdsourcing relies on ICT and especially on participants' access on ICT – "on the technological agency of people" (Certomà et. Al 2014, 100). Compared to online focus groups, crowdsourcing platforms might give more tools to involve people, not only by writing but by using also video, images and other tools to co-create and generate new ideas.

Crowdsourcing may not be yet the most common or the most preferred research method in the area of science, but it has successfully been used for example in the scope of citizen science by integrating volunteers into different science activities. According to Wechsler (2014), crowdsourcing has also great potential to be used in different scientific research projects. (Wechsler 2014, 14 & 20.)

Ideas from both real-time online discussions and crowdsourcing could, and have been combined to set up co-creation platforms. Real-time face-to-face focus groups and workshops could be simulated by using web-based applications, and it would probably be possible to reach somewhat similar settings online as in face-to-face groups. In addition, adding new features enabled only by the Internet and technology, could provide more reasons to use online environments in participatory processes instead of traditional face-to-face meetings. In the era of people living through the screens of their laptops and smart phones, the possibility of using and developing more creative and reliable online participatory methods should not be underestimated, or at least it should be considered as an option for more traditional participatory methods.

Ethical considerations of web-based participatory methods

Web-based participatory can be conducted in different ways: participatory can be real time or not and participants can either participate actively, for example by writing, but also passively meaning that participant's behavior and movement in specific situations can be tracked with current technologies. This possibility for tracking is somewhat controversial, or at least sensitive issue, since participant's privacy might be under a threat. Therefore, especially in passively executed web-based data gathering processes it must be ensured that both data collection and handling data is done responsibly and transparently. (Wechsler 2014, 21.) In addition to practicalities regarding privacy issues, further research on future of privacy in general would be needed to see to which direction importance of privacy evolves, and how privacy is defined in the future.

Already today people share information of themselves in different channels and their movement is tracked by various web- and GPS-based applications. Possibly in the future privacy is defined in a completely different way than it is defined today.

3. Causal Layered Analysis (CLA)

CLA in general

"Subjectivity, interpretation and cultural context" play a big part in people's ways of knowing, understanding and creating the future. Therefore, different futures studies methods have been developed to take into consideration these different ways of knowing and understanding the world, and to recognize values behind people's worldviews on different issues. (Riedy 2008, 150.) One of these data analysis methods, aiming for deeper insights, is Causal Layered Analysis (CLA) developed by Sohail Inayatullah.

When creating the method, Inayatullah's goal was to integrate different approaches in the field of futures studies dominant at the time: empiricist approach focusing on data, post-structualistic view focusing on theory, interpretive school focusing on creating "authentic meaning and conversation" and a school of thought seeing the importance of "applied knowledge" in futures studies. Therefore, CLA

"as a theory [...] seeks to integrate empiricist, interpretive, critical, and action learning modes of knowing". (Inayatullah 2009, 1.)

CLA is not a tool for predicting futures but can rather be used for creating new spaces of thinking and that way for analyzing the present and past in favor of creating alternative futures. In CLA, one is challenged to question the future both in the beginning and in the end of the analysis. CLA's strength is in its way to represent data: it doesn't examine only the surface of the phenomena but worldviews and values in a deeper level. (Inayatullah, 1998, 1.) CLA assumes that reality can be divided into different layers and that there are "different ways of knowing": It's not only the surface and the systemic causes of the of the phenomena or issue that matter, but also deeper levels revealing deep-down emotional experiences give essential depth to the interpretation and analysis. (Riedy 2008, 150.)

CLA process

Causal Layered analysis can be used in different situations where one wants to analyze data in deeper levels and to create new spaces and ways of thinking and knowing. CLA can be used for example as a research framework, as a tool to interpret data in a research project, it can be used for self development and and also in participatory environments, such as in future workshops. (Inayatullah 2009, 10-12.)

No matter what is the purpose for using causal layered analysis, there are four levels, or layers, in the analysis to be considered. The first layer of the CLA is called litany, by which Inayatullah refers to how the surface of the phenomena in question is presented for example by the news media. At this level, issues are presented as disconnected and therefore, they might cause feelings that there isn't much one can do to solve them.

Litany can also cause projected feelings if one starts to think why someone with enough competence isn't doing something to solve the issue. (Inayatullah, 1998, 820.) Litany layer issues regarding the future of work example might include for example news on how jobs are disappearing because of the developing technology, automatization and robots doing the work.

The second layer of CLA deals with social causes. Quantitative data regarding economic, cultural, political and historical elements is analyzed and interpreted. (Inayatullah, 1998, 820.) In the future of work example, this layer might include speculation of the use of the metrics that have been used for measuring productivity and prosperity of the country in question, such as GDP or unemployment rates.

The third layer of the analysis is deeper than the previous and is "concerned with structure and discourse/worldview that supports and legitimates it" (Inayatullah, 1998, 820). When thinking about future of work issue, one might find for example attitudes that some work is seen more suitable for women than for men or vice versa, that different jobs are appreciated in different ways, and that one thing legitimating the structure is the presumption that everyone should contribute to the growth of the economy by having a job.

The fourth and the deepest layer is concerned with metaphor or myth behind the issue. The purpose of analysis on this layer is to reveal "the deep stories, the collective archetypes, the unconscious dimensions" of the issue in question. The myth level consists of deep, emotional experiences behind the issue. (Inayatullah, 1998, 820.) At least in Finland, there are a lot of different metaphors for work, most of them highlighting diligence, hard work and rewards. If one doesn't have a job, he might be seen as lazy and not as a good citizen. At this level, one could ask does future without jobs, as we define "job" today, equal to future without work and on the other hand, is it so that to have meaning in life people need to work.

When implementing causal layered analysis, one doesn't just examine individual lay-ers disconnected to the others but moves vertically, up and down, through the layers. That way, after first making sense of the surface phenomena and social causes of the issues, one can look deeper to the gut level experiences behind the issue. After revealing what the myth or metaphor in the deepest layer consist of, one can take those insights and carry them up through the layers to make sense of the surface phenomena with new insights gained at the deeper levels. The process challenges thinking and helps one to create new space for seeing the issue from a new perspective. (Inayatullah, 1998, 821.)

Even though the difference to typical academic analysis is that CLA takes into consideration also deep emotional levels of the issue, it doesn't mean that one layer is more important than the another. In some cases, layers overlap and the strength of the method is therefore in it's way to combine insights from different layers – surface phenomena, social causes, worldviews and myths – to make the analysis more comprehensive and rich, and to reveal different dimensions of thinking and knowing. (Inayatullah 1998, 821.)

Critique towards CLA method

One might see CLA as a good analysis tool in complex issues regarding futures, but also critique towards CLA can be found from the field of futures studies. In his article Inte-gral extension of CLA, Riedy (2008) compares CLA to Integral Theory and gives sug-gestions on how CLA could used alongside Integral Theory – a theory and framework for understanding multiple ways of interpreting the world, developed by Ken Wilber. Integral Theory makes a distinction between the exterior and interior and the individual and collective and places these dimensions into two axes, thus forming a grid of four quadrants of existence: behavioral, social, psychological and cultural. In addition, Integral Theory argues that "reality is composed of holons or wholes that are part of other wholes" and that they develop holoarchically, level by level, following dif-ferent developmental lines inside the quadrants. Therefore, Integral theory argues that to interpret the world comprehensively, an approach has to include all aspects of the framework: all quadrants, all levels and all developmental lines. (Riedy 2008, 151-153.)

Riedy (2008) argues that even though essence of CLA is somewhat similar to Integral Theory, CLA's weakness is that it favors cultural aspects and doesn't take into account psychological factors. Riedy also criticizes that CLA confuses "quadrants, developmental levels and developmental lines in it's layered concept of reality". He also points out that the use of CLA method in workshops might not be appropriate since participants might not have capacity to reflect on the layers beyond the litany layer – beyond the surface of a phenomena. Riedy then suggests that CLA could for example be applied as an extension to Integral Theory, to reveal cultural factors that are not as strongly studied within Integral Theory framework. (Riedy 2008, 158.)

Inayatullah (2009) seems to interpret Riedy's critique and suggestions to use CLA as a part of Integral Theory so that Riedy suggests that Integral Theory as a method is superior to CLA. In his own words: "The essential message of Chris Riedys's article [...] is simple. Integral theory and Integral practitioners, as presented by Slaughter and Riedy, have a higher awareness than others, thus they offer the light to those of us with a lower consciousness". (Inayatullah 2009, 103.)

From my point of view, instead of debating on superiority of one method over the other it would be more useful to try to develop field of futures studies research methods in co-operation. There doesn't seem to be very consistent or structured way of using different methods in futures studies, so instead

of seeing others as competitors, seeing them as affiliates could provide essential knowledge and perspectives and to lead futures research methodology to more consistent direction. As Gordon and Glenn (2009) argue, no matter what method or methods one uses, and how one uses it, it would be important to develop methods in a way that they would accumulate so that one doesn't have to start every time from the beginning (Gordon & Glenn 2009, 15).

4. Combining CLA with Participatory Methods

Because of their different natures and ways of use, I don't see it particularly relevant to compare participatory methods with CLA. Participatory methods are mainly used for data gathering where as CLA is typically used for analyzing data and for creating new mental spaces for futures thinking. Instead, in some cases, participatory methods and CLA overlap and the best features of both are represented when using these two methods simultaneously.

In addition to analyzing data, CLA can be used in different participatory situations, such as in focus groups and workshops. Though, when using CLA in workshops, cultural frames of knowledge might cause problems since people might not be ready, willing, or don't know how to think or see "outside the box" (Wildman & Inayatullah 1996, 730). It might be difficult for participants to widen their perspectives on the issues. In that case, it it might be useful to try to make participants to take distance to the issue or topic under inquiry by using some kind of creative ways of applying CLA thinking to participatory methods. One could for example use gaming or other creative ways to try to reveal different thoughts of people on the issue, on different levels of the analysis. For example, role-playing could distant participants from the issue so that they could see it from a new angle. This could probably be executed also in an online environment.

I see it possible that in my master's thesis, depending on the topic, I could use CLA combined with participatory methods. I could for example use some online participatory method for collecting data and CLA for interpreting data and seeing issue in question from new angle. CLA could be used either as a framework for the research from the very beginning, or as a method for analyzing data after using participatory methods for collecting data and insights. Either way, I see the strength of the CLA method in it's way to question presumptions and deep, emotional experiences and in creating new transformative spaces for thinking. If insights collected during the CLA process can be applied in practice, it might mean finding more satisfactory, common goals that at least people involved in the process can feel committed to.

5. Conclusions

Futures research methods seem to be elastic and flexible: they can be used in a way that best fits the project's goals. Therefore, it might be so that no-one really uses the methods in a same way as other do. I see a lot of potential both in CLA and in different participatory methods, face-to-face and online, to be developed further to match with goals in different futures studies research projects and all in all to be more reliable and participatory-friendly.

Even though it can't be said that one futures research method gives better or more correct answers than the other, it can be seen that the use and effectiveness of the methods is highly dependent on the talent, knowledge and professionalism of a person using them. Therefore, I see it essential to develop

futures studies methodology in co-operation, not only in the field of futures studies but also in connection with other fields of science. By transdisciplinary co-operation, more comprehensive solutions could be found to solve complex societal issues both at the local and global levels.

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FUTUS3 SYSTEMS THINKING

Systems thinking (6 cr) is an optional advanced course in Master's Degree Programme in Futures Studies. The idea of the course is to explore how systems thinking is a specific way of looking at the world and firmly rooted at the heart of futures studies.

Since the topic is from the outset very theoretical, we make in the course a great deal of effort to make it more concrete. This year this was done by looking at the university as a system instead of normal set of departments and faculties. By screening with students the present values of university – using so called Barrett value analysis – we encouraged them to express their view of how university should look like in the future, from systems perspective.

Professor **Markku Wilenius** runs the course together with a Dutch system expert **Peter Paul Gerbrands**.

The report "University reimagined: Improvements in the light of systems thinking" is written by **Piritta Fors, Suvi Hakala, Jarno Tuominen** and **Joonas Lindeman** stated that the current brand content of university/business school is rather empty. They argue that there is misinterpretation of what innovation really means in university. They point out that university should be more human focused and not blindly assuming digitalisation would serve all the needs for learning. The students argue for more mentoring and coaching.

Students bring up the idea of making more use of the power of self-organization which is a great one. They point out that feedback work in two ways, between teacher and students and then also among students, should be enhanced and used as a platform for designing the future of university. Students give also critical but constructive ideas on how to improve FUTU-program.

The other paper is called "Systems Thinking – Seeing the Forest for the Trees" by **Anna Einola, Danyllo Mantovani, Jenna Puikkonen** and **Taina Viima**. The elegant design of the report impresses. They first introduce systems thinking and from there they dive into Barrett's value model and give their account of benefits using values as determinants of various consciousness levels. They make a great observation by stating that we should focus on people rather than processes. They also make the point that by with more interaction with outside organization there could be more chance to "make the difference". Students argue that internship and mentoring programs should be developed in a more systematic way. They also bring in the idea about applying more creative learning methods

They also suggest university should provide more tools for building personal career path. There should be more extensive courses where they can dive deeper into the substance. Getting all students to know right from the beginning how to learn to do proper teamwork by assigning all students to a team is a very sound suggestion. In the end, students provide vision about university as learning by doing organization.

Both of the papers clearly show well how students could build in systems approach into their way of looking at the future of university.

University Reimagined – Improvements in Light of Systems Thinking

Piritta Fors, Suvi Hakala, Jarno Tuominen & Joonas Lindeman
University of Turku, Turku School of Economics, Futures Studies

Introduction

As students we form a part of a larger structure, spanning from Finnish Higher Education System in general to the University of Turku, Turku School of Economics and finally the Futures Studies programme. This system of Finnish higher education is currently in flux. University poses an interesting case, as it has several responsibilities, both historically and juridically. The new situation, where universities are considered as "corporate entities" is somewhat in contrast to the goals of civilizing, fostering basic research and contributing to societal needs. In this paper we consider the perceived current and desired states of the system, assess some of its problems and offer recommendations and ideas on how to make the system as a whole to meet the needs of the students, staff, and society. Some suggestions specifically concern the FUTU programme, even though it was not separately assessed by the valueanalysis. This is done to exemplify specific issues within the larger structure.

TSE values: Observations of the results

Based on the value-based analysis (Barrett method; Barrett Values Centre, 2016) of 20 students in Future Studies Systems Thinking Course the current primary focus of the University is seen as brand image, followed by other concepts on level 3 such as result orientation, productivity, goals orientation, hierarchy and silo mentality. The branding of TSE has been active, yet appears to lack content in reality. This is evident in the large differences between current values from both the desired and current values of the students. As the current personal and desired values are situated on the same level there is – at least from the students self-evaluations – a possibility to reach the desired levels and positive grounds for growth (see Fig. 1).[1]

[1] While we understand the limitations of these results in e.g. their representativeness, we treat them here with facevalue.

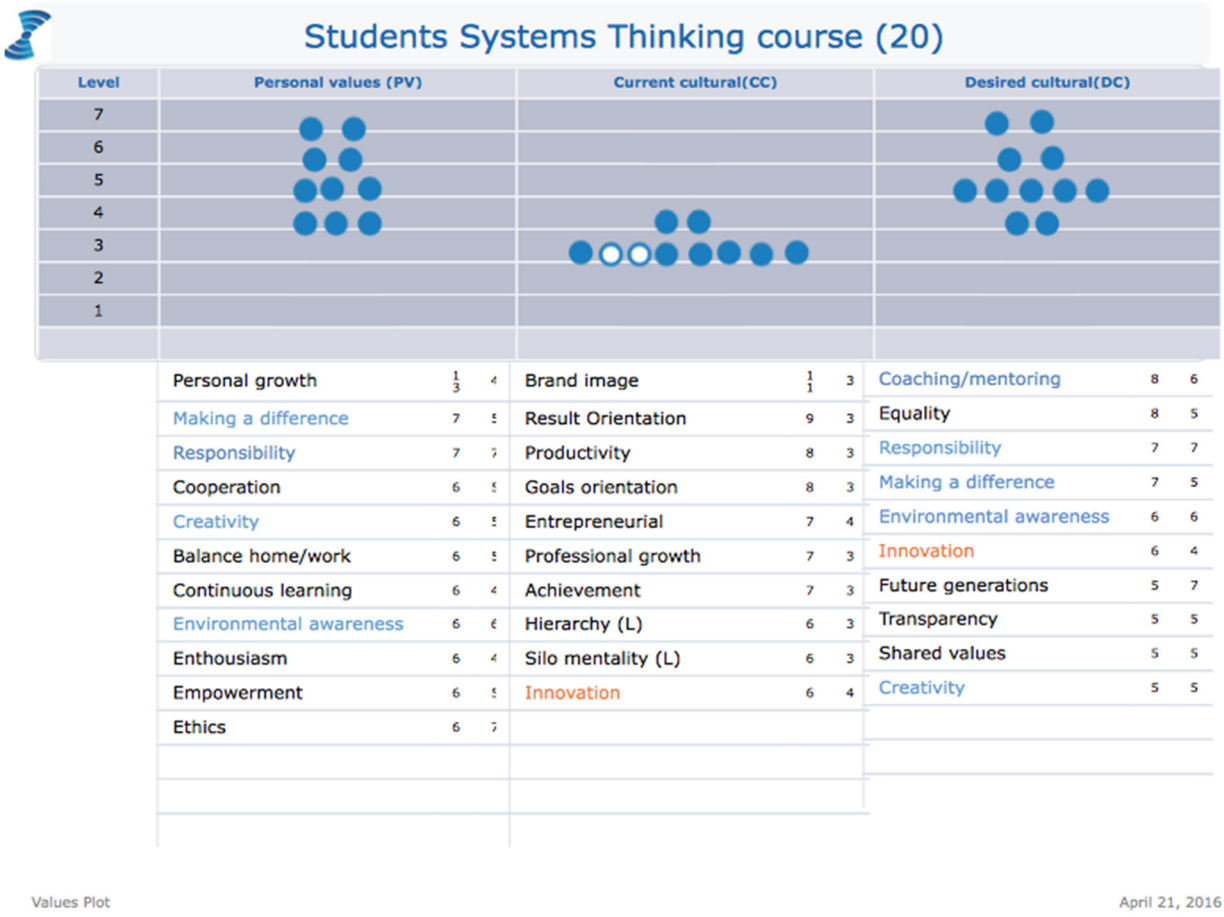

Figure 1. *Results of the Barrett value survey in FUTUS3 course*

Why are there such perceived differences? How could we move from the current state towards the desired system? What would such a University look like?

University as a complex system

The values, beliefs and skills of various members of the University system affect the way the whole system self-organizes, functions and behaves. When feedback from the system does not meet the expectations of the subsystems, the functioning of the organization as a whole is hampered. This might be due to problems in information flow, misaligned expectations and understanding of the goal and purpose of the system. These are conditions typical to a hierarchical system, where top-down and bottom-up processes are not aligned. One reason for the current situation might be, at least in part, the historical change in the Finnish university system due to the reform of the higher education legislation in 2010 (Niinikoski et al., 2011, OKM, 2011). This caused a seismic shift in the way universities are organized, run and perceived. This has caused the University/TSE as a whole to reorganize more toward a private corporation model, compared to the previous state institution status.

To re-conceptualize this as a system, we can consider that the university has been perturbed by fundamental changes in its operating environment, and appears to have reacted by focusing on branding and image to secure funding. The ground-level of teaching staff and students of the university however were only minimally, if at all, involved in the process of crafting this new direction. According to a

survey of university employees, 55% felt the reform has either somewhat, or totally failed (Niinikoski et al., 2011). This is evident in the decreased trust and wellbeing within the university. We could argue that these discrepancies between intentions and reality in part explain why the university is stuck on the level of structures and processes, as it lacks the openness and trust required to reach the Barrett levels of four and above.

The new generation

World is rapidly changing due to different factors, such as digitalisation and globalisation. The secondary education, along with the University, needs to cater to these new requirements. There is need for a fundamental change in how we think about learning. The teachers education should place special consideration to developing selfreflexivity and selfknowledge. A selfaware teacher can better concentrate on the essentials of teaching and engaging. This is especially relevant in a world where the speed of progress and amount of available information require reconfiguring the role of the teacher from an authoritarian or authoritative role to a more facilitatory and instructive position.

There is an interesting initiative HundrED, that aims to bring new methods into the the school system in Finland. In Ylöjärvi school and High School there is a new experiment concentrating on the team work culture, with main objectives of increased inspiration and inner motivation.

From structures to emergent properties

One example of this is the way the term innovation is considered in the higher education today. University and the Finnish Ministry for Higher Education tries to foster innovation by treating it as a structural issue , and it is increasingly demanded and monitored from the research staff and students. On the Barrett model this means more and more emphasis on the level 3. We argue this view to be incorrect. We consider innovation as an emergent feature of the selforganizing system at a certain level of complex interactions. This changes the way to view the system, as it takes innovation not to be a topdown structure that can be imposed, but a phenomena arising from an effective bottomup organisation.

Another current trend in higher education globally is toward increased digitalization and massive open online courses (MOOC's). This is, however, contradictory to the feedback from the students, who desire more face-to-face interaction, mentoring, small group interaction, participatory learning and the like. Further, instead of being the purported revolution in online learning, the drop-out rate from MOOC's are around 85-95 %, and according to feedback questionnaires approx. 80 % of the students already had degrees (Friedman, 2014). While MOOC's are possibly revolutionary when considered as not-for-profit systems and allowing access to those previously outside academia, in the current form they should not be considered as an alternative to normal classes. While we applaud the general trend of treating knowledge as a commons, universities should currently prioritize their limited resources in developing degree education. Digitalization should be a means to these goals, not an end in itself (see e.g. Floridi, 2013).

As an organization devised to create learning and higher education – which will in turn lead to research and innovations benefiting the whole system – the focus on structure, grunt performance and output appears contradictory. When we consider the desired state of the university in our data, some similarities can however be found with the revised university strategy for 2016–2020 (University of

Turku, 2015). The strategy emphasizes four goals: efficient basic research; responsible education; university as a driver for societal welfare and the economy and; university as a well-being community. This strategy appears to be more inline with the expectations, so the future is maybe not that glum. Now what is required is to ensure that the strategy will not merely be empty letters.

To characterize the changes between the levels three and below, with the levels four and above, we could summarize them as follows. Change from a mechanistic view of education to a dynamic one. From atomistic to a holistic. From hierarchical structures to an equal, collegial system. Productivity not as an endinitself, but as a natural result from a functioning and wellbeing oriented system. A substantial shift from mechanical and narrowed studying to intrinsic motivation and broad professional development. Level four is called Learning and Growth. Such an organisation contains elements that enable empowerment, innovation, teamwork and personal growth.

Coaching and mentoring approach

The most common desired value of the survey was coaching/mentoring. What does the coaching/mentoring approach mean in practice? In coaching the main idea is to encourage the person or student toward personal development and to investigate questions like " who am I? ", and " what do I want in life? " in order to find inner motivation. Fostering this approach could be one of universities' key tasks in the age of online lectures and a spacedistanciated, globalized education market.

There could be different roles for staff members with relation to research and teaching. Provided a sufficient amount of resources (a reference to Barrett's level 1) to hire new people, it could make sense for the university or the faculty to have separate people in the role of a teacher, curator or mentor and in the role of scientists or researchers. These roles are at least traditionally considered to appeal to quite different kinds of personalities: scientists or researchers are commonly perceived as introverted and detail oriented – teachers extroverted and social. Thus, to be able to teach a course one does not necessarily require the skillset of a researcher. Instead, emotional intelligence and dedication to the students as individuals (a reference to Barrett's level 4 concept of adaptability) could be more Important. In the current state courses are sometimes reduced to an overview of the research project the lecturer is currently working on instead of a more holistic approach. However, this change should be implemented with emphasis on retaining critical thinking and evaluation skills as core competency of also the teaching staff.

Maybe not every new potential task should be assigned to staff members however. Some universities offer a possibility for possible future applicants to be a "student for a day". In practice this could mean a personal day of tutoring from a student (or a staff member), a possibility for an extensive Q&A or general advice regarding the the programme. Obviously the early contact or a mentoring relationship with students can provide completely different insights into studying than a similar experience with staff members. In addition, mentors from working life and academic staff could be introduced to fit the wants and need of the students.

Mentoring could focus, for example, on feeding or fostering the student's individual interests and capabilities. These could also easily be taken into consideration when forming groups for teamwork. The lecturer could simply give the students a chance to express of what kind of topics they are interested in working with and, either, form the groups accordingly or allow them to selforganize. By forming the groups in this manner would create a fruitful environment for actually working as a team (level four

and above) and potentially lower the negative attitudes towards working in a group (level three and below).

An enhanced emphasis on feedback could be seen as a reflection of the coaching and mentoring view. In practice this could mean a guaranteed feedback session after each course assignment. In the spirit of self-organization (Gerbrand, 2016; Gleick, 1987; Meadows, 2008) the students could also evaluate each other and create an atmosphere of discussion. This could easily be achieved by sharing good practices within the University. For example in the psychology department feedback is aimed to be collected from every course by the teachers and/or the student association, and the last lecture is used as a feedback session (Tuominen, 2016). What is important is that these feedbacks are collected and have direct effects on the curriculum and course structure.

Considering the goals and desires of the students, would help make tests and projects opportunities for learning, instead of what at times feels like semi-punitive control measures to fulfil the student's' credit quotas and in turn to guarantee income for the university. Meadows (2008), in line with most systems scholars, emphasizes the importance of feedback in general. To transcend silo mentality one could introduce people from other disciplines into these feedback sessions and share views and good practices. Wouldn't it for instance be fruitful and perhaps surprising to have feedback from a biology student?

What is needed for change?

World Economic Forum (2016; see Fig. 2) considers the most important skills in the work life of the near future to be complex problem solving, critical thinking and creativity. TSE would ideally place high premium on teaching such skills.

The next three skills are people skills; People Management, Coordinating with Others and Emotional Intelligence. These are level 4 skills and require a deep personal learning. You cannot fully learn from a book how to be truly compassionate towards another human being. A business school of the future could encourage innovation, creative thinking and new business creation. At the same time it could be the home of knowledge and learning. There would be an atmosphere that is inspirational and that motivates people to learn and experiment. The objective of coaching is to make the student learn from him/herself.

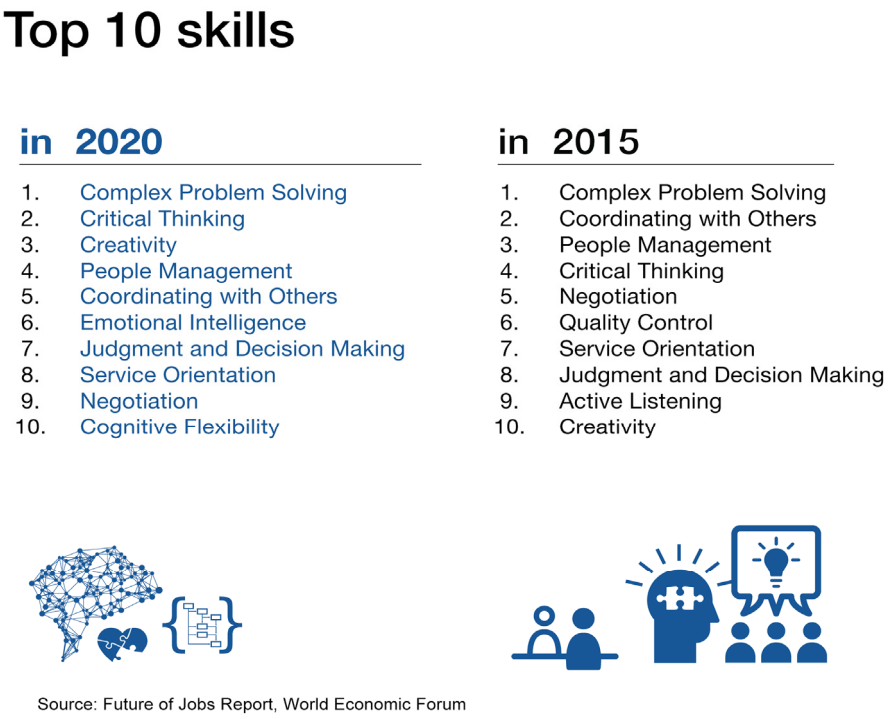

Figure 2. *Future of Jobs Report, World Economic Forum*

Innovation

What does innovativeness mean in the university context? In Barrett's value-chart the term innovation specifically denotes inner innovation. Research conducted by Google showed that "emotional safety" is the key to successful teams. Emotional safety ''...describes a team climate characterized by interpersonal trust and mutual respect in which people are comfortable being themselves'' writes Professor Amy Edmondson from Harvard Business School (2007, pp.1330). An "allowing atmosphere" is another key towards innovation. For example, Bréne Brown (2010) has found in her research that, surprisingly, even such elements as being vulnerable or dealing with feelings of shame could enable innovation. Yet, innovation should not be considered a forcible compulsive goal but rather a by-product that stems from a healthy, unrestrained community. In our view, innovation is best enabled by more conscious organisation of a positive, encouraging atmosphere that fosters personal growth and skills that allow emotional safety in team work.

Entrepreneurial spirit

What does a business school that is truly entrepreneurial, a birthplace for innovative start-ups look like? Currently the percentage of business students starting a business is very low, less than 5%. In working life entrepreneurial skills are required in companies of all sizes (OKM, 2011). However, akin to innovation, learning these skills requires freedom of thought, which is contradictory to the hierarchical structure orientated current state of TSE.

Personal growth

Perhaps a pool of mentors or tutors consisting of relevant professionals outside of the university could be assembled with the help of university staff and their connections.

Additionally, having more real case studies and projects would help students to reflect what qualities and personal features are needed when working with futures oriented tasks. More awareness of own personal qualities, strengths and weaknesses could lead to individuals' better understanding of themselves. This would allow students to develop their qualities and help them to reach their personal goals where they want to be in the future.

Personal growth is of course subjective, and not only to do with studying. In the university context personal growth could broadly be considered as both social and internal. According to Vygotsky (1978), development and learning occur in the zone of proximal development, where the task or problem is suited for the level of the individual or group, in that it is demanding enough to not be boring, yet not difficult enough to be unsolvable. To borrow another concept from psychology, this is also where the flow experience can be achieved (Csikszentmihalyi, 1990). Such "zones" can be constructed either by utilizing the intrinsic interests of the individual or by creating a dynamic social space, from which development and learning emerges. University in its totality could therefore be understood as a place for proximal development.

Making a difference

Students want their contributions to be meaningful and to lead to a better world. This desire might be in conflict with the current hierarchy, silo mentality and values of result orientation, productivity and goals orientation.

University could meet this desire by drafting a specific social responsibility program. This would allow both staff and students to participate in issues related to environment, inequality and others usually left to NGO's. Working together with organizations already during studies would provide examples and experiences on making a difference. This, however, is also in stark contrast with the outputoriented requirements of the structural levels.

Equality

Decision making and discussion should be more equal and open. It is important to create an atmosphere in which students and staff alike are listened to, and their concerns and opinions taken into consideration. All stakeholders within the university should be considered in crafting common policies. Teaching mentoringskills should be integrated to the studies of future professionals, as well as open discussion on values and leadership culture.

To create an atmosphere of equality between students and the academic staff the possibility to discuss issues that cause dissatisfaction should be possible in a constructive manner. Now it seems like the students have only little possibilities in discussing matters that cause dissatisfaction. Let's take, for example, the case of assignment and final course grades. In Sweden, and specifically in the University of Agricultural Sciences (Hakala, 2016), there is a possibility for the student to request a re-evaluation of his or her coursework and final grade by another party if this request is argued in a relevant manner and in accordance with the objectives and demands of the course. Consequently, this requires that the

evaluation criteria, aim and objectives of the course are stated clearly on the first lecture and that the course plan is accessible at all times. Such, or similar practices would aid equality also in Finland.

Responsibility

Responsibility is a combination of trust and motivation. At the moment the atmosphere lacks a sense of responsibility. The current state of affairs runs the risk of creating a negative spiral of neglect. Yet, by showing commitment and responsibility for the needs and wants of the students and staff, the University can foster trust and reintroduce a responsible environment. Further, the staff can spur the students in taking responsibility of not only their progress, but also the development of the FUTU programme by bringing up their suggestions.

One example of this in the case of our studies is, that at the moment there is no clear indication available on who actually is professionally responsible for the FUTU programme. Therefore, the responsibility is dispersed.

Transparency

Many of the courses arranged in the Futures Studies masters programme are lacking a clear course structure. A tangible course plan should be provided not later than during the first lecture. It would ideally consist of a description of the course and its main objectives, the timetable, a list of recommended reading materials, a list of the tasks required to pass the course and the evaluation criteria.

After the course the students should be provided a chance to give feedback on how the course fulfilled the objectives and aims stated in the plans. The feedback form should also have questions like why and how the course did or did not fulfill the objectives and aims stated in the beginning. Also improvement points and open feedback would be collected. In the end a course representative would compile this information, present and discuss it together with the lecturer and the programme director. Incorporating the programme director to the conversation would give him/her an outlook on what is actually happening in the programme and are the courses administered and executed according to what is stated on paper.

The fact that the staff currently work on the 3rd floor behind a locked door exemplifies and conveys hierarchical thinking and leads to a deficiency in a natural contact between the staff and students.

More freedom in course selection

More freedom should be granted in choosing the courses for completing the curriculum. Especially in a subject as varied as Futures Studies, it is difficult to understand why the amount of available and applicable minor subjects are restricted. Overall, allowing for a wider variety of courses within the university system within and between universities, and internationally, will likely benefit all parties. Opening up the course selection would also provide options for multidisciplinary learning and considering phenomena from another perspective. This would better prepare students for future working life.

Teamwork instead of groupwork

In the level four educational system there would be teamwork instead of groupwork, more free selforganization and less topdown structures. There would be more shared responsibility and actual dialogue between staff and students. To reach the level where students can participate in intrinsically motivated

team work instead of arbitrary group work, an introduction to effective teamwork methods should be provided. Furthermore, all the teaching staff should be familiar with these issues in organizing and facilitating the teamwork, by for example allowing the groups to form based on their individual interests and motivation. Mentoring approaches could also be applied to teams.

Variation in working methods

Level 4 on Barrett's model is labeled "learning and growth" and "continuous renewal and learning". The 4th level (see Fig. 3) entails accountability, adaptability, empowerment, delegation, teamwork, innovation, goals, orientation and personal growth. One issue that has clearly come up concerning the adaptability of the master's programme is the fact that the ways of completing courses are limited. In fact, often only one way to complete a course is offered. Students enrolled in an international master's programme are usually older and come from varying backgrounds and hence increase the demand for adaptability. A reform of this kind could lead to better motivation, empowerment and increased focus on goals and personal growth as a corollary. Many universities have the possibility to complete courses either by "the regular way" which usually means taking part in the lectures or by "the alternative way", which often consists of independent work in the form of essays or other types of written assignments. Enabling this kind of an independent and not physically restricted method for completing courses would help balance other aspects of student's lives, such as family or work.

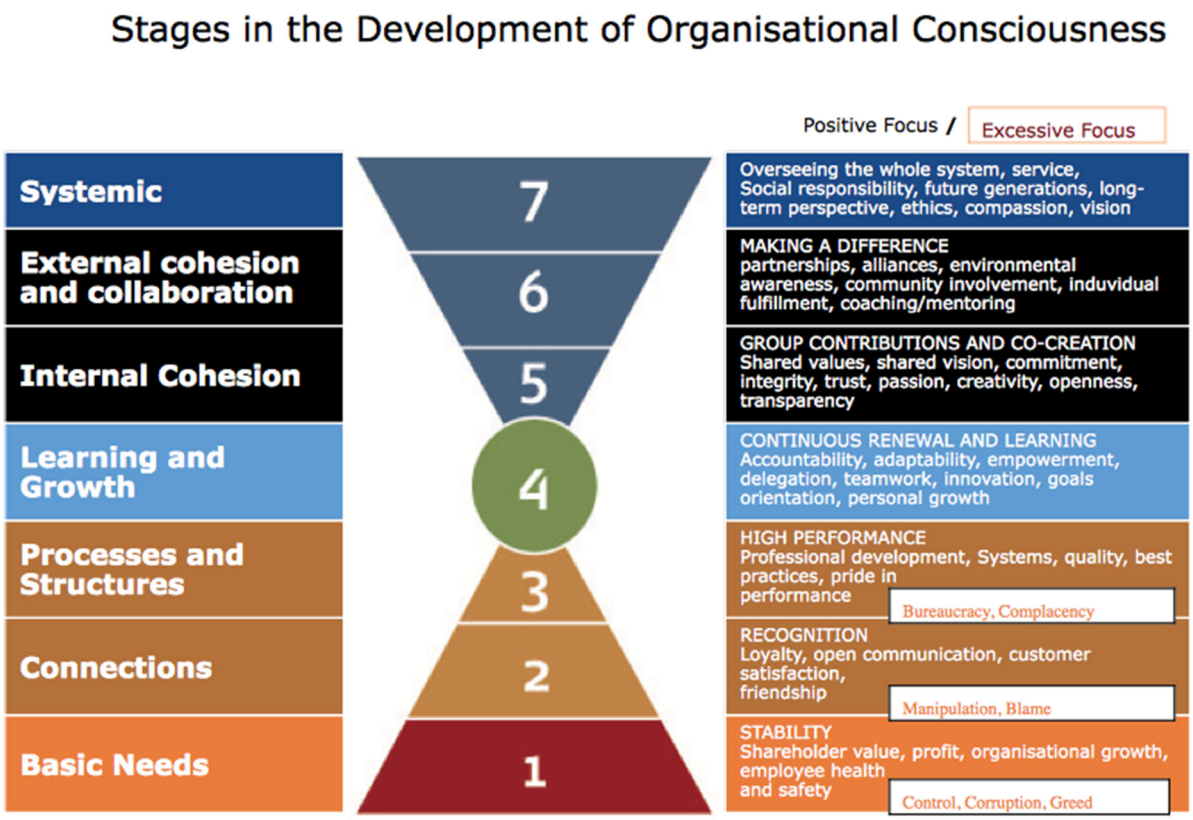

Figure 3. *Source: Richard Barrett's Stages in the Development of Organisational Consciousness*

Continuing development

Continuing development of the university and its stakeholders is essential in forming an adaptive, resilient system. One good example of embedding this attitude in university praxis is the Consulting and Coaching for Change -programme at HCE Paris and Oxford University which adapts "20 % of the programme each year to introduce new perspectives, methodologies, faculty and content" to "keep it fresh and at the forefront of developments in organisational change" (Consulting and Ciaching for Change, 2016). They further state that "the academic development of the programme is overseen by a board of senior academic practitioners which meets regularly to discuss content and focus". Such an approach would be welcome also at FUTU/TSE. Especially in young programmes it would be beneficial to work together with other institutions and adapt their best practices to fit the specific needs.

Agility for adaptation and change

How to change the personal values of the leadership, lecturers and the professors? How do you get most out of the group that is still mainly focused in teaching than learning? You cannot really force inner motivation to anybody, teacher or student. There are techniques and trainings to learn to increase your inner motivation and values such as compassion.

One key issue for the University would be to allow enough freedom in preparing courses to allow for also the teaching staff to resuscitate their enthusiasm. This could be achieved with the aid of, for example more participatory lectures, or in thinking of the teacher as a coexplorer instead of a talking head. This latter idea could be implemented in a ProblemBased Learning format, with the staff involved in the process.

Overall, in order to ensure that the staff is involved and motivated to work towards a change and willing to adapt, they should all share similar values and goals that foster the change instead of solely being interested in e.g. their own research.

FUTU Programme development

How then should methods and philosophy of teaching change? Currently discussions in a studentstaff group about the future development of the master's programme are ongoing. According to rumours from these meetings, a lot of internal politics is involved and settling of competing interests has been challenging. We suggest two alternatives for future development. Firstly, there could be a visionary project leader hired to develop the programme to meet high international standards. Such a person would also have a fresh unbiased view of the programme and TSE. The project leader can tailor the program to suit the academic standard and to be alluring to the international tuitionpaying students. There could be new innovative methods used in the courses; external coaches, workshops and team building. The focus could be, for instance, in enhancing critical thinking, complex problem solving and creativity the skills that are needed in the future working life. All the lecturers should required to have excellent command of English and people skills.

Outside perspectives of e.g. from businesses and researchers could be listened to get views what kind of skills and preparedness, on one hand, are necessary in the business world and, on the other hand, are needed to enter the research world. This would give a balanced and comprehensive view on what kind of skills and study background is perceived important and essential. These views could be

used to guide and assist in the curriculum structure creation. The outside professionals could also form a steering group.

Secondly, students should be welcomed to participate in the structure creation of the curriculum. Such a system is already in place in other subjects, where students are welcomed to participate in small groups based on their interests. To ensure that this will be realized in an appropriate fashion the university should foster an atmosphere in which all relevant stakeholders such as the academic staff, students, and supporting staff will be considered as equal colleagues. Teaching should be structured clearly in such a way that it utilizes scientific and theoretical basis and ways of understanding the phenomena, followed by applying the methods in practice.

Conclusions

In this paper we have surveyed various layers of the university system, ranging from legislation, to TSE, and the FUTU programme specifically, and considered their various interrelations. We have based our analysis on the Barrett's value-based model and some additional literature in the field of systems thinking such as Donella Meadows' book "Thinking in Systems" (2008) and Philip Ball's "Critical Mass" (2005). We've attempted to carve out suggestions and improvements on how best to reach the desired state. Our main suggestions revolve around letting go of hierarchical structures, equality and increased personalized education. Some of our suggestions are straightforward and pragmatic, while others demand larger organizational changes. Some are based on critique on existing state of affairs, others on theoretical understanding. While at best (or worst) our understanding of the university resembles a sort of superorganism, and can thus seem idealistic, there are several examples of thinking derived from swarm intelligence or emergent properties already utilized in organizations.

The futures studies programme at the TSE has potential to become an internationally respected and unique Master's degree. This can be achieved either by the aid of an outside observer, e.g. a project coordinator, or by open town hall type meetings. Either way the objectives need to be clear and transparent. The University can decide whether it aims to contain an atmosphere of personal growth and learning, equality and communication, or rather foster an increasingly hollow brand image. In order for FUTU/TSE to become a world class master's programme, there needs to be substantial development in shared values. There is great potential to be unleashed maybe in the future?

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Systems Thinking: Seeing the Forest for the Trees – Towards the University We Desire

Anna Einola, Jenna Puikkonen & Taina Viima
University of Turku, Turku School of Economics, Futures Studies

Systems thinking in brief

A system is a set of things or components that work together as a whole for a certain goal. A system is more than the sum of its parts – also the processes between the parts like interaction, cooperative action and information transfer belong to a system. The world, as we know it, is a collection of systems (Kamppinen, Kuusi & Söderlund, 2003).

The systems thinking approach contrasts with traditional analysis and linear thinking. It studies systems by trying to understand how different parts work together and affect the whole, not by breaking the systems down into their separate elements. Systems thinking helps to see the root causes of a problem. It encourages to be curious and think more diverse and more complex, and to seek connections.

How to make a change in a system?

The idea of leverage points is central to systems thinking. Leverage points are places within a complex system (a corporation, an economy, a university) where a small shift in one thing can produce big changes in everything.

Doing things right does not make a real difference unless the things that are done are the right ones. Meadows (2008) defines 12 Leverage Points - places to intervene in a system - which are, in increasing order of effectiveness: Numbers, Buffers, Stock-and-Flow Structures, Delays, Balancing Feedback Loops, Reinforcing Feedback Loops, Information Flows, Rules, Self-Organization, Goals, Paradigms and Transcending Paradigms.

In this report, we observe the results of a survey conducted among us, a group of students in Turku School of Economics. The results show both our personal values and thoughts of what TSE is like and what it should be like. We discuss, applying systems thinking, what is needed to make the change, and which would be the procedures for making it.

The Barrett Model A tool for mapping individual and organizational values

The Seven Levels of Consciousness model was developed by Richard Barrett in 1997 in order to provide a "framework for understanding the stages in the development of both individual and group consciousness" and to understand human motivations more clearly. The framework is based on Abraham Maslow's Hierarchy of Needs with some minor modifications. Probably the most significant change in the framework was a change from hierarchy of needs to hierarchy of consciousness. The change was made because Barrett realized that people don't always operate from need but from survival consciousness. (Barrett Values Centre 2015.)

Barrett did not only create the framework but also developed a tool that could be used for mapping both individual consciousness and the consciousness of the individuals' organization. He realized that "each level of consciousness is characterized by specific values and behaviours". Therefore, when using the Barrett Model, people are asked to evaluate 1) Individual values; 2) Current Cultural values in the organization and; 3) Desired cultural values.

After each individual has chosen values for all three categories, answers are combined and one can start to evaluate what are the main differences between personal values, observed organizational values and desired values. After that, it is easier to start to think how the system (e.g. organization) could be changed to better meet both the individual and desired cultural values.

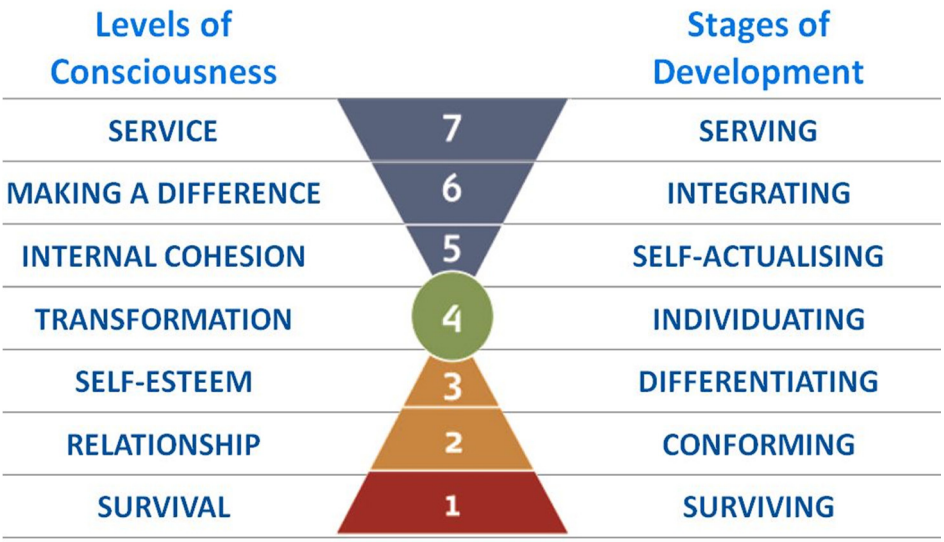
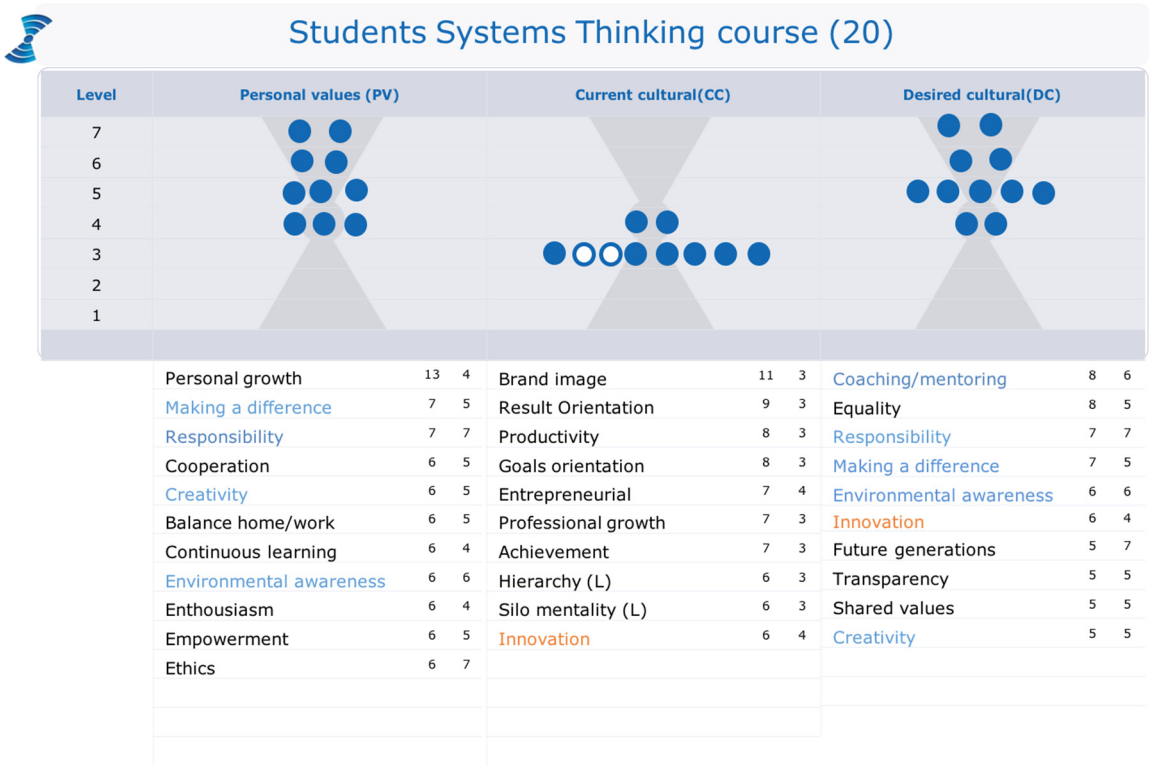


Figure 1: *Barrett Values Centre 2015.*

Turku School of Economics under observation – How can the results be interpreted?

The results show who we are as people and what kind of organizations we want to be part of, but the organizations around us are still stuck on other kinds of values. When you put it in the perspective of development of organizational consciousness, you can notice that the organizational system is stuck in lower levels of consciousness than we are personally. Our personal growth and our future aspirations are linked and we should concentrate on connecting the organization's systems in our personal aspirations, too.

Institutional myths often affect the structures of a highly hierarchical organization, creating pressure for a social phenomenon called coupling, which can be described as people within the organization conforming to the expectations of the system. Tight coupling often creates various conflicts within the institution. The looser the coupling, the less structures are emphasized. Acknowledging loose coupling and decoupling in the organizational structure processes can help designing the processes to establish a connection to the organization. You cannot just make old structures "vanish", but it is needed to construct a plan how to decouple and couple again. It is important to focus on people instead of focusing on the process. (Hallett 2010.)



Sample and method: 20 students from TSE's Systems Thinking course (FUTUS3) were given a list of values and asked to evaluate their personal values, current (observed) cultural values in TSE (or University of Turku) and desired cultural values, by choosing 10 values for each three category. Responses were then combined to show how the values are placed in the Barret's Seven Levels of Consciousness model.

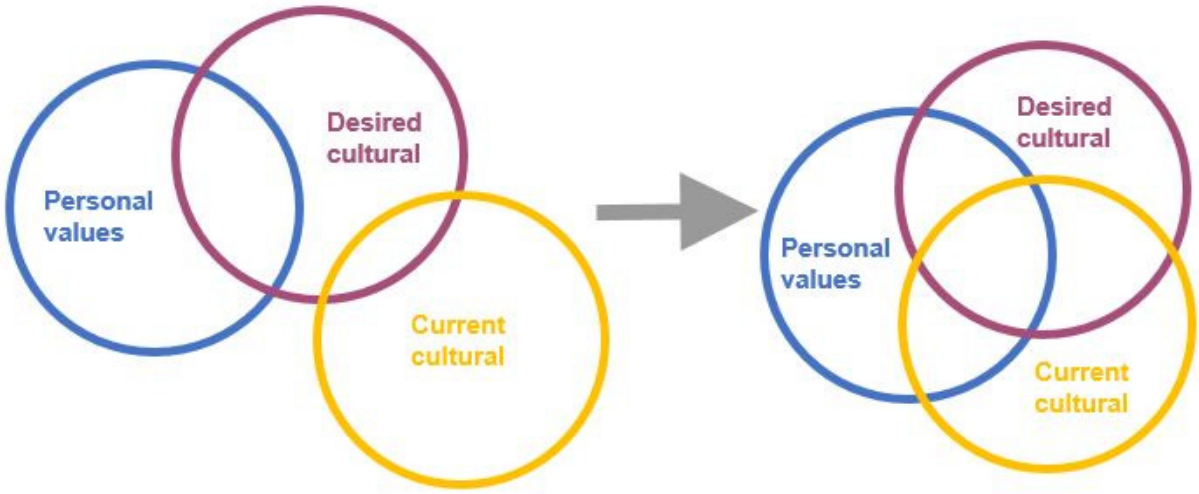
How system can be seen today vs. desired system

CURRENT SYSTEM

Results can be interpreted in a way that there is a somewhat strong link between personal and desired cultural values and also a link between desired cultural and current, observed cultural values exists. However, link between personal values and current culture is completely missing. It seems that there is a flaw in the system, but more thorough examination would be needed to reveal whether the flaw is at local level (TSE/ University of Turku) or whether it applies to all universities in Finland, and/or the system of higher education in general.

DESIRED SYSTEM

To meet the needs and desires of the students, it would be essential to develop current culture and practices in TSE/University of Turku by drawing from the personal aspirations and values of the students and other stakeholders. If all three areas (personal, current cultural and desired cultural) could be brought closer together, it would probably diminish contradictories between one's expectations for studying in TSE/University of Turku and the reality. It might also give a stronger feeling that you are part of something you are proud of and want to promote it to others as well.



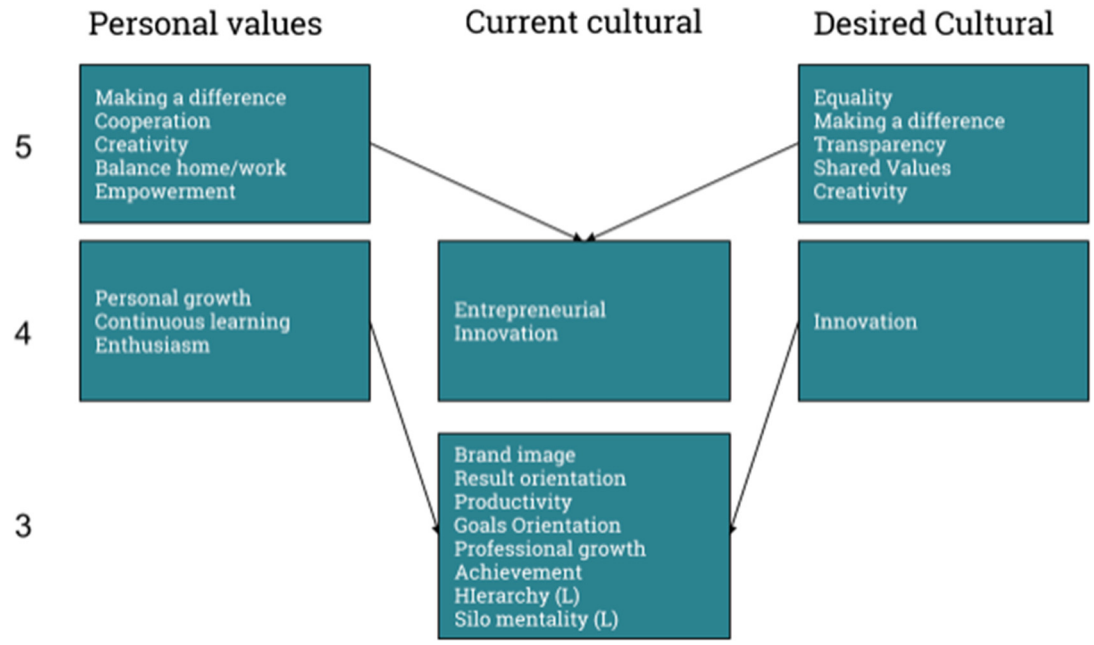
What is needed to make the change?

Drawing from personal and desired cultural values - Climbing up, level by level

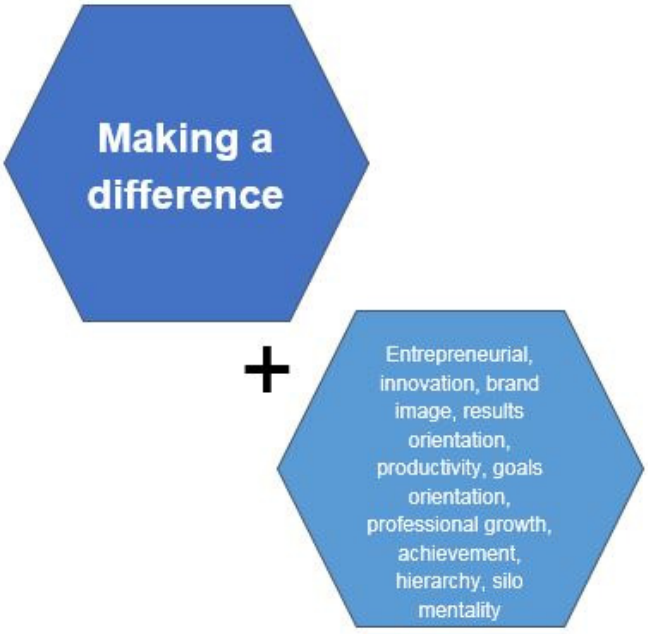
How could the knowledge on personal values and desired cultural values be utilized in developing the current, observed culture in TSE? Most of the current TSE values were on level 3 whereas personal and desired values were on higher levels of consciousness - on levels 4-7. However, the first goal would not be to try to take current cultural TSE values straight to level 7 but to make slow progress by climbing up the levels one by one. Therefore, we started our analysis by choosing three levels in the system since most of the values were on those levels.

Our approach to changing the system is that current situation at TSE (levels 3-4) should be brought closer to personal and desired values (levels 4-5). Thus, the focus of our analysis is on how help TSE to "climb up" to level 4 and eventually to level 5.

In our report, we will concentrate on four sets of personal and / or desired values; "Making a difference", "Creativity & Enthusiasm", "Personal growth and Continuous learning" and "Shared values and Cooperation". These values could be mixed with the current cultural values, in order to achieve a more consistent culture in TSE / University of Turku. In addition, "Innovation" aspect is discussed as it is an unifying factor between current and desired cultural values. "Hierarchy" & "Silo mentality" as limiting values for development of organisation are also taken into consideration.



Driver of change no. 1: Making a difference



What could be done:

Making a difference seems to be an important driver for the respondents both on personal and desired cultural level. However, current culture at TSE/ University of Turku doesn't seem to answer to this need. On the other hand, all current cultural elements (especially entrepreneurial, innovation, results and goals orientation and professional growth) could be used as a base for students to fulfill their need for "making a difference".

Results imply, that for the students, the feeling that one's work really has a meaning is more important than just reaching individual learning goals. Therefore, it would be important to give students more chances for cooperation with companies and

organizations. This could happen in form of real-life business cases from planning to execution and evaluation, intensive internship programs and for example having mentors from corporate life. This would give a feeling that one's work is important - it's not just an essay among others.

At the moment, one might also feel that his/her studies are not connected to life outside the university or to society in general. University should be better embedded into society, for example by combining working methods and practices from academic and corporate world, making university open and inviting place for all the citizens, and giving students chances to work on projects that aim at development of the society.

Social responsibility aspect should be highlighted in the studies and students should be given means to understand how their studies are connected to society in a larger scale. This would not only give a good starting point for students when they enter working life, but also give them means to act socially responsibly and, a feeling that the work they do really matters.

Driver of change no. 2: Creativity & Enthusiasm

What could be done:

Making changes within the current system is the first step. Creating compulsory modules right from the beginning of the studies in university enables creating networks and encourages more creative thinking in transdisciplinary frameworks. It also works as a future worklife simulation, which enhances the social & teamwork skills of students and helps them to orientate into solving problems together.

More creative learning and teaching methods should be encouraged. Even though the purpose of teaching at this point is to be able to measure the quality effectively, it doesn't encourage professors and teachers either to really motivate students to be creative, but only to meet the expectations to get high scores within the international comparisons. New method testing should be encourages for the professors and teachers also.

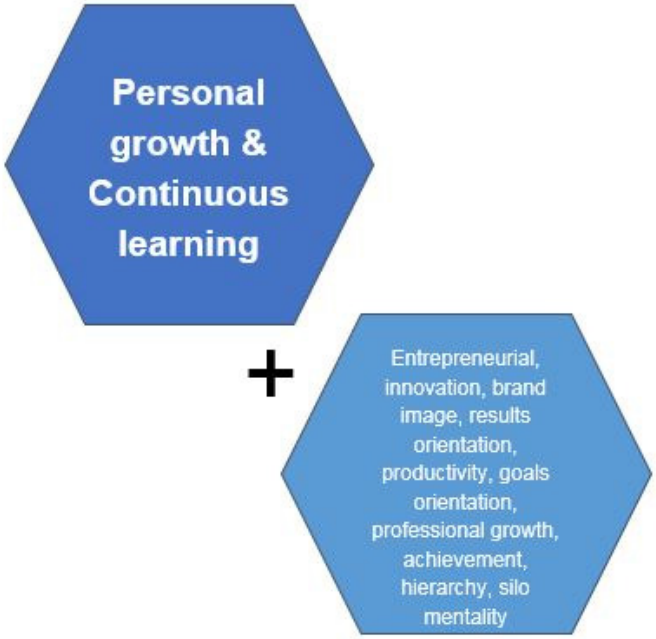
The spaces where the lectures and group works are done should be more inspirational, with colors and using structures that are easy to move, like furniture, tables and even plants. Innovations of companies could be exhibited in the spaces, as well as creations of students.

The ways to do graded work on lectures should be aimed to be published at least to peer groups, not only for professors' eyes. This is how both learning and learning skills could be more effectively reflected and the students could discuss themes through presentations, for example using Pecha Kucha or other methods to engage people into group work. Essays could also be written within platforms, with rounds of deadline after which all of the essays would be published and after that, enhanced and reflected to perfection, which would show the learning motivation which could be measured and use in grading also. Other modes of presentation than only PP-slides could be encouraged.

The current structures should be questioned and redesigned. The gap between working life (need for creativity & effectiveness, short presentations, new ideas) and academic studies is becoming too long for students to be relevant assets to labour markets. This should be changed together with all the actors within the university's environment.

Even though traditional theories and methods would be studied, there would be more emphasis on the concrete ways to implement the learned information into knowledge with new tools of analysis instead of structured essays.

Driver of change no. 3: Personal growth & continuous learning



What could be done:

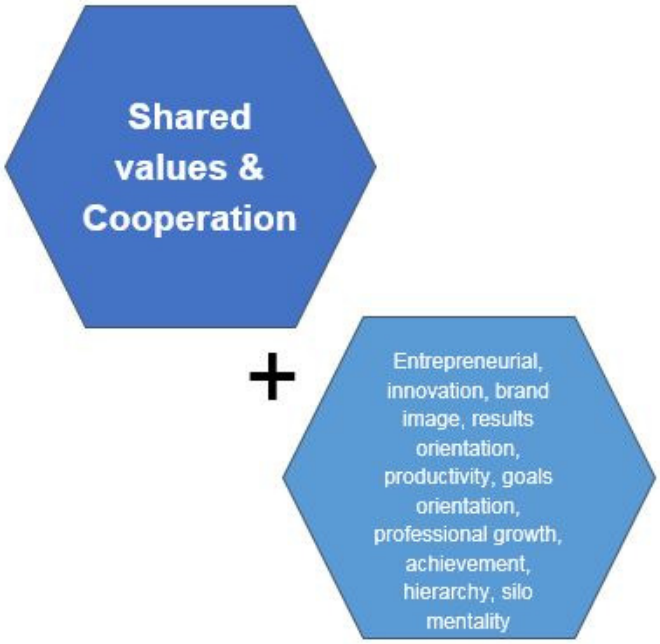
There should be better opportunities for personal growth. Giving tools and chances to reflect on the daily events and interaction between peers and others within your social environment is the key to enhance your own mind set. This could be done by offering concrete problems where learned issues could be implemented and also helping students to plan their routines so that there would be balance on studying and free time. Recognizing the processes which are connected to studying are sometimes hard to recognize for new students, so study groups should be offered for students to be able to enhance their learning skills and tools. Student guidance, feeling that university and the whole university community supports you in your personal growth is very important to retain your motivation even when there are setbacks.

The structure of studies should be more flexible, enabling choosing to study within the natural flow of interesting issues and themes. More personal ways of forming your major could be allowed, lowering the amount of compulsory common studies and increasing the amount of study modules, which would bring more variety and flexibility.

Designing your own professional career among your studies should be encouraged. Building up portfolio of projects and work you've done could be the focus in the studies so that you can be proud of your work and show what you know, who you are and use your portfolio for real.

More extensive courses which would consist of duration of one semester and having 10-15 credits per course, so in all only three courses per semester, would enable concentrating better on the studied module and help to connect the issues together more easily. Learning from the results of previous work, you don't have to start every time from the beginning. Connecting issues together could be enhanced by students (and researchers) presenting the work they've done in "demo days", where people who are interested could go and hear everything about their work. There could be also "join our project group" and "night of science at the university" exhibitions.

Driver of change no. 4:
Shared values & Cooperation



What could be done:

When starting the studies, every student should be put in a team for learning teamwork skills. All the effort taken to study together can be used to evaluate final grades. Doing things together in a good atmosphere is the key for the future work life too. Enough structure and helping tools should be given, but also letting the forming happen naturally and giving enough time to formulate an effective way of working should be encouraged.

Of course, there could be ways to optimize some groups, with creating lists of interests and connecting with others and do things together with people with the same interests, which would also be important to enhance the motivation to keep up with the team work. At some point, all students would be part of several teams, which all would have different challenges, to learning different situations of team work. Creating courses based on teams of various backgrounds and having a project on agreed subject should be imperative from the beginning of the studies, but also time for private reflection should be encouraged. Mindfulness as well as mentoring and coaching could help reflecting the team-work.

The evolution of mentoring should change the studies completely. Studying so that you can flexibly discuss concepts together with the professors or freelance guest lecturers and coaches would enable moving in your own pace and learning more efficiently than only sitting at lectures. Everyone should create a portfolio of interests, which would help the university to book freelance experts in advance.

It is vital to find something in common with the people around you, so most fundamental needs and desires of people should be regarded, like connections to other people and food, of course! Being able to do things together and having facilitated spaces and events of discussions helps people to find out more about the other people around them.

University we desire in a nutshell

Images: Pixabay.com

First Steps

STEP 1: Creating a space of discussion and connection

- A concrete room or area
- Having an inspiring, open space for everyone
- Creating "incentives" to make people engaged → Pecha Kucha, discussing ideas
- Discussions for everyone → in connection with the society, inviting people from outside

STEP 2: Creating deeper concern

- Sharing ideas, values, showing what people have in common, showing what people like or dislike together
- Going towards creativity and openness, building up trust

STEP 3: Creating together

- Doing things together
- Creating lists of interests and connecting with others and do things together with people with same interests
- Creating courses based on teams of various backgrounds and having a project on agreed subject

- Evolution of mentoring: studying so that you can flexibly discuss concepts together with the professors, not having to sit in classes, creating a portfolio of interests

Conclusions

It was very inspiring to be given a tool to understand the reasons why so many of students feel frustration and inability to connect to the expectations of the university world. This combined with the knowledge of organizational theory and systems thinking would be useful in redesigning many processes within the university world. Still, redesigning the system would be very complex and complicated, but the goal could be reached step by step, by introducing new theories, methods and tools and using personal values of students as a starting point for the development.

The finances of the university are mostly based on getting funds depending on the scores in international comparisons as well as the thoroughness of plans to enhance the further success of the school. In addition with these goals, new goals should be introduced: the goal of stakeholder satisfaction, so that both employees and students could be inspired working here towards common goals. A societal problem combined with future career aspirations could motivate people for creating a more inspiring environment, where people would want to work together, use what they've learned to help each other to fulfill common goals of achieving steps towards graduation and adaption to society and working life. In addition, enhancing inteldiscliplinary and multistakeholder collaboration could be of help in finding a way towards fat organisation and getting rid of silo mentality.

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FUTUS4 STRATEGIC FORESIGHT

Strategic Foresight (6 cr) is an optional advanced course in Master's Degree Programme in Futures Studies. The mission of the course is to make students to understand the role of foresight in the corporate world. In addition to giving theoretical background of corporate foresight, the standard way of running the course is to take students inside an interesting company for a visit. They learn to see, how companies form their future strategies in a real way.

On the basis of what they learn and discuss, the students make a group work where they challenge the existing way how company sees their future. The two reports by students stem from their visit to Stora Enso, the leading forest industry company in April 2016.

Papers were reviewed by the responsible teacher, Professor **Markku Wilenius**.

The assignment written by **Anna Einola, Piritta Fors, Christina Lehner** and **Henna-Maria Uusitupa** called "Towards sustainable innovative wellbeing" made a very interesting proposal to Stora Enso by pointing out that actually they could re-identify themselves as being the company in wellbeing business instead identifying themselves with forest industry. They argued that there are growing health safety concerns about plastics and aluminium and when those concerns are spreading in the market due to more research findings, the search for new, more sustainable package solutions will be presumably intensified. This could be tremendously beneficial for Stora Enso, had they prepared for this shift by developing natural wood fibre based solutions that also meet all the demands of food packaging.

Moreover, students did a great work by compiling together different elements to foster idea how SE could be a "sunrise" business instead being in the old pulp & paper "sunset" business. They were consistent in analysis and future projection and gave substantial thought for food for Stora Enso people.

The other paper included from FUTUS4 course was by **Taneli Elomaa, Merja Lang, Sakari Nisula** and **Risto Sivonen** titled "Combat against plastic through collaboration and open structures". Their starting point that SE is on war against the plastic was a solid one and helped them to create a fine narrative around it. Indeed, it is pretty logical to think that SE can use it to reorientate its strategic focus in their packaging business.

Building the theoretical framework, they make a good tour of various futures studies approaches and build a nice case for arguing that SE should go beyond evidence-based approaches. In the analysis they do a great job by linking organizational structures to (open) innovation culture.

Collaborative innovation is not currently a part of Stora Enso's core agenda, thus their highlight here is of great value. Reaching new markets by creating substitutes for oil-based synthetic products – markets, as they recall, are huge – and doing it in an open innovation way involving own employees as well as other stakeholders is a firm message. As said, there needs to be a vision, plan and actual action. This is what strategic foresight is all about.

It should be mentioned that all four reports produced by students were received by Stora Enso management with great interest and students got highly positive feedback from the company.

Towards Sustainable Innovative Wellbeing

Anna Einola, Piritta Fors, Christina Lehner & Henna-Maria Uusitupa
University of Turku, Turku School of Economics, Futures Studies

INTRODUCTION

As technology advances and we live in the age of hypercompetition and fragmented markets, it seems as the transactional environment of any firm is becoming more and more complex. It is challenging to be sustainable with a clear competitive advantage. It is vital to understand that it is all about the people. They are the actors who make the change and turn opportunities into innovations.

Stora Enso has a long history as a successful forest company. With the future perspective it needs to recognize and strengthen the current potential plus create new ones. One of the keys is to create value and communicate this better to the existing networks and especially to the consumers. This can be done with a consistent and transparent vision or strategic foresight of the future. A clear value driven societal perspective needs to be in effect and in communication with all the stakeholders.

In this report, we identify the time scope until 2030 through the key drivers, the macro level changes that affect all organizations in the global perspective. We concentrate to the Ecoawareness and Health and Wellbeing drivers in our analysis. These two will have major impact on consumer behaviour and thus creates an opportunity for Stora Enso.

These two trends are likely to grow fastest in Europe which is also the current major market area for Stora Enso. In the report we look at the current stakeholders in Europe especially in Finland. We give ideas on new the opportunities for Stora Enso.

STORA ENSO & CONSUMER BOARD

Consumer board is one of the five divisions of Stora Enso group. Consumer board is dedicated to offer fibre-based packaging solutions using renewable and recyclable natural materials together with packaging solution division they collaborate closely with. Operating thorough entire value chain, consumer board aims to "Do good for the people and the planet" by replacing non-renewable materials with renewable solutions. In practice, the aims can be seen in the production of renewable products, preferring the local forest owners as suppliers, and selling electricity generated at the mills. Stora Enso Consumer board state the promotion of sustainable living on a global scale as their mission.

METHODS

We used our various academic & professional backgrounds of economics, leadership, chemistry and sustainable process planning to create a wide scope of analysis for vision creation.

Environmental scanning

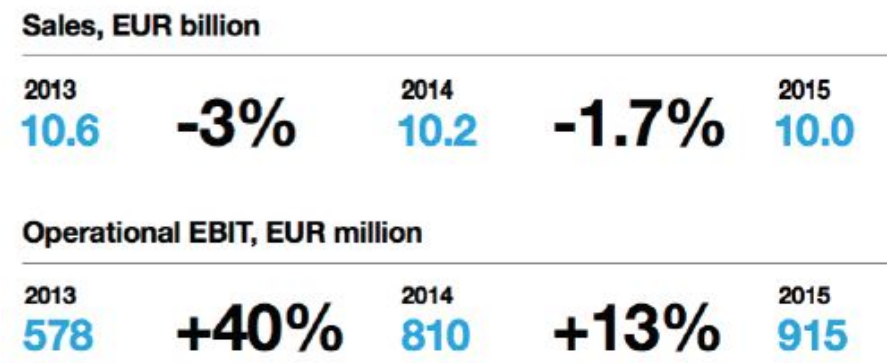
Being aware of the changes within the social environment is the first step to recognize possible weak signals. Social intelligence (social media, news feeds…) can bring a lot of knowledge on innovations, culture and aspirations of people. (Rossel 2012; Millennium Project 2009)

Trend analysis

Extrapolation through known socio-economic cycles, megatrends and the trends and weak signals enables anticipation for longer time scopes. (Hiltunen 2013; Wilenius & Kurki 2012)

Progress Book analysis

Analysis on the material provided by Stora Enso was done on the emphasis to identify the current state of business. We compared the key figures from recent years. (Progress Book 2016)



Industry & value creation analysis

Relevant information on the transactional environment was gathered to gain more information on the strategic scope of the company. (Progress Book 2016; Koskela 2014; Andersson et al. 2002; Limaei 2010)

Lean process analysis

By identifying the opportunities within the company's processes, new business models can be examined. (Ollikainen 2014; European Commission 2011; Finnish Forest Industries 2010; CEPI 2014)

Interview

We even interviewed a forest owner, asking him how the process between a forest owner and the forest companies usually go.

Stakeholder analysis

To recognize the opportunities within the value network, we created a chart out of various identified stakeholders, some were found from Stora Enso's reports and some were added to establish new relationships. The chart is added as an appendix 1. (Stora Enso 2016)

Sustainable lifestyles framework

We combined the themes of value network, sustainability, lean production, eco-awareness and innovation as well as the key findings from our other analysis within the sustainable lifestyles framework. (Defra 2011)

KEY DRIVERS FOR THE FUTURE BUSINESS OF STORA ENSO CONSUMER BOARD

Stora Enso recognises some of the most important key trends in their Progress Report (Stora Enso 2016a). In addition to those, we identified health and wellbeing and more holistic eco-living as future trends from our own horizon scanning. Horizon scanning means monitoring different media sources to recognizing possible future effects on predetermined, optimized elements of the strategy of the firm. In Table 1 key trends affecting Stora Enso Consumer Board are listed:

KEY TRENDS		
2016	2020	2030
Global warming	->	->
Growing population	->	->
Digitalisation	->	->
Growing middle class	->	->
Urbanisation	->	->
Changing lifestyles	->	->
Eco-awareness	-> Eco-values in all decision making	->Eco-living
	-> Health & Wellbeing	->
		-> Seniors as consumers

We take global warming, growing population, digitalisation, growing middle class, urbanisation and changing lifestyles as the given growing trends. For this analysis we concentrate on Eco-awareness and a growing Health and Wellbeing trends.

What if it turns out that plastic leaks toxic chemicals to food and drinks? What if plastic and aluminium are the new asbestos and DDT? There are number of people who share the belief that plastic and aluminium are serious health hazards. It is likely that this weak signal grows with the concerns of the polluting effects of these materials. Sales of plastic water bottles were banned from San Francisco and there are countries that attempt to stop plastic bags usage for environmental reasons. There are estimates that if the current lifestyle continues, there will be more plastic than fish in the oceans in 2050. The health concerns meet with the environmental ones and this provides an opportunity for the safe packaging producers like Stora Enso.

Eco-awareness

Eco-awareness is growing. What is Eco-knowledge in next phase? The current big issues are e.g. global warming, polluting impact and scarcity of fossil-fuels, little to no recycling of plastics but it is important to also consider the future issues.

In the past years and still in 2016 there are concerns about the use of the rainforests. For this report we would like to raise an idea that what if the consumers start having similar feelings for over-usage of renewable resources such as the Nordic forests?

Ecological values have a wide impact in consumers' decisions in various levels and ways. It is likely that mainstream Europeans will continue be more aware of the ecological issues in the future. Stora Enso has a big business opportunity here.

Recycled materials

Currently, Stora Enso utilizes solely renewable, but new material. However, the inclusion of recycled paper and cartoon material would make the raw materials even more sustainable, enhancing the brand image Stora Enso is building as a company caring for the planet and people. Coating recycled material inside a wood-based MFC or an insulating layer made of other totally organic wood-based material would enable the vast reutilization of recycled paper-products. Recycled layer would result in cheaper raw material while it would increase the product value through value creation.

Health, Wellbeing and Well Doing

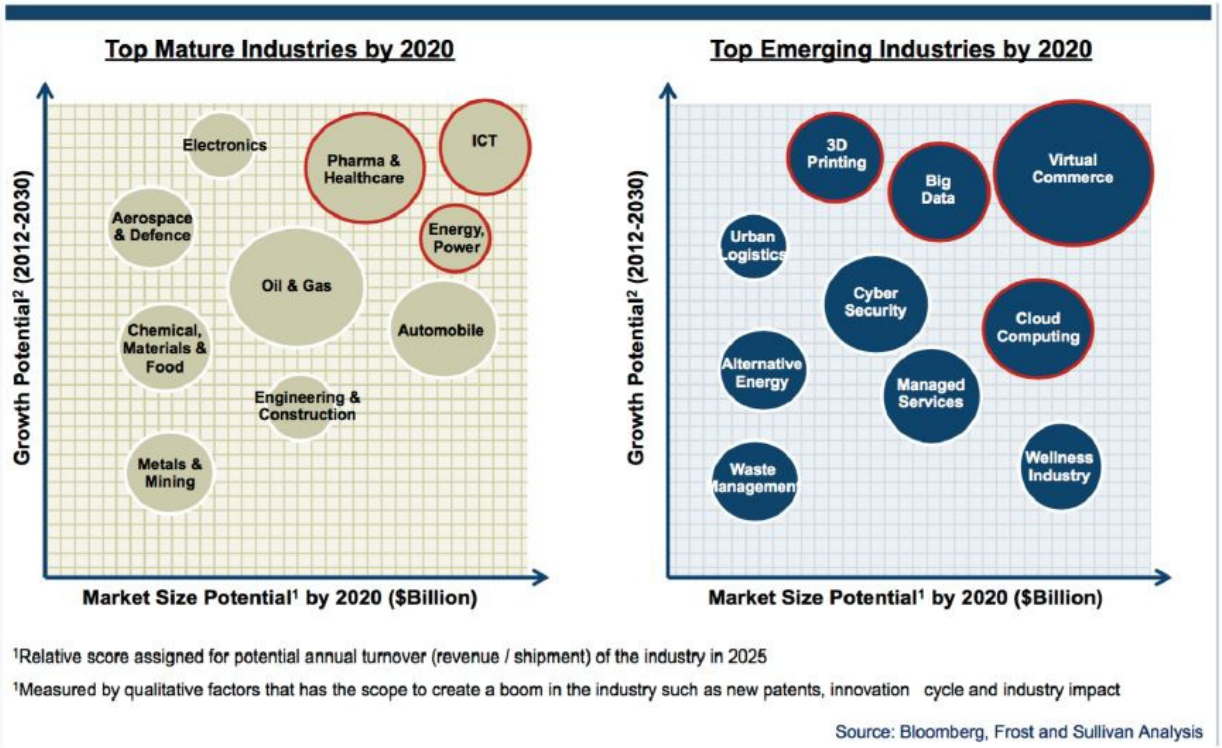
Health awareness and the percentage of people aiming to avoid chemicals in their everyday life is increasing all the time. Healthy lifestyle, living chemical free, and selecting pure foods are growing trends that have quickly shifted or are currently shifting from weak signals into megatrends around western world. There are many industries serving the consumers concerning health, preventive healthcare, well-being and well doing. Active health and wellbeing / doing consumers have similar interest than the eco-aware consumers and in many cases are the same person.

Pharmaceuticals and health care professional serve the mainstream population and the growing health industry due to the aging population. Consumers are increasingly purchasing natural medicines, vitamins and other off-the-shelf health related products. There is a growing number of people using alternative medicine and wellbeing services. Spiritual consciousness movement amounts to a weak signal magnitude already. People want to feel well and do well. To hire a personal trainers or a life coach or to go to a mindfulness or a yoga class is much mainstream now than just 5 years ago. Organic food, sustainability, fair trade, local farming, slow food, nutritious health foods trends are likely to grow substantially.

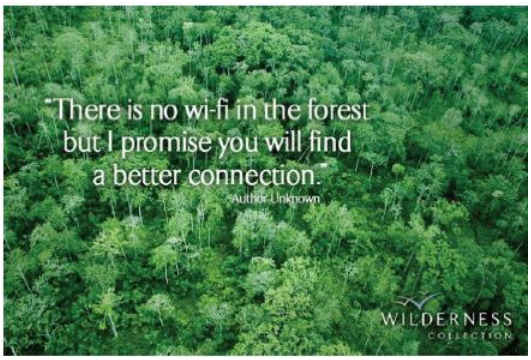
Safe packaging

In a recent study of Korean research group biodegradable composite films prepared using two renewable resources based biopolymers, agar and lignin alkali were shown to have a potential to be used as a UV barrier food packaging material for maintaining food safety and extending the shelf-life of the packaged food (Shankar et al. 2015). In Sweden, the possibility to utilize lignin derivatives from different

types of processes in advanced enzymecatalyzed oxygen-scavenging systems intended for active packaging has been explored with promising results to be used as a part of active coatings and films (Johansson et al. 2014).



Forest as a Green Care provider



Forest has a great meaning to the Nordic people. Scientific evidence of the health benefits from walking or otherwise spending time in forests is increasing. By 2030 the awareness of these benefits are likely to increase, which affects the customer values in a way that they will see the existence of forests more and more valuable. Already it is known that only 20 minutes of being in the forest heals and balances people. Further, forest has potential in diminishing the attention problems in children (Taylor aF, and Kuo Fe, 2009).

Eco-awareness refers to understanding of the value and importance of protecting the environment. The increase in eco-awareness is linked to digitalization, ie. adding the value within a digital form, as the amount of consumers is increasing and the raw materials are getting more and more scarce. The value added with less environmental impact is an important factor indicating the performance in Finnish forest companies and eco-efficiency is an important part of the strategies in the forest industry (Koskela 2014). Still, classical shortterm-view decisions are made to reduce cost. An example could be choosing non-renewable energy sources to decrease the costs in the production, resulting only in decreasing the prices of the end product (Koskela 2014). The potential of recognizing opportunities by taking measures towards eco-efficiency are often overlooked (Koskela 2014).

Lowitt (2013) criticizes the packaging industry throwing piles of money to landfills. The opportunities created by utilizing packaging waste is definitely the most prominent one, as it has been calculated have a clear effect on employment, carbon dioxide emissions, energy consumption reduction, efficiency... the list is convincing. Extended producer responsibility systems has been recommended to capture the value that can be created out of utilizing the materials. This requires new business models and collaboration between various stakeholders. (Lowitt 2013, 67-85)

COLLABORATION IS CHANGING BETWEEN THE COMPANY AND THE STAKEHOLDERS

Stakeholder	Power	Interest	Important for stakeholder	Recommendations
End-consumers	HIGH	HIGH	Functionality, price, design, environmentally friendly, quality	Gather knowledge through retailers, product samples, traceability (Stora Enso logo on products)
Competitors	HIGH	MEDIUM	Collaboration, transparency	Collaboration (know-how exchange)
Customers' customers (producers eg. McDonalds...)	MEDIUM	HIGH	Size, weight, logistics, lower costs, functionality, quality	Collaboration for designing package, designing processes for containers (chemicals), knowledge exchange
Customers (packaging producers eg. Tetrapak, Ecopak...)	HIGH	HIGH	Size, weight, supply is functional, promptness of delivery, promises are kept, reliability	Collaboration, R&D
Employees	MEDIUM	MEDIUM	Wages, balance of work and free time, health, support in career advance, independence, clarity, participation	Participation, testing of packaging, idea creation
Forest owners	LOW	HIGH	Reliability, cooperation, contract, long term relationships, sustainability	Convince them of certification system (sustainable managed forests)
Governments	LOW	MEDIUM	Taxes, obeying the laws, sustainable management of forests, exports, representing Finland	Keep them informed
Investors	HIGH	HIGH	Making interest, reliability, reputation, liquidity	Information of progress

Local communities		LOW	MEDIUM	Responsibility, support, sustainability, participation, job creation	Keep them informed, participation
Media		HIGH	HIGH	Headline, transparency, brand image, sustainability, positive media exposure, PR events	Boosting the image
NGO's		LOW	MEDIUM	Collaboration, trust, participation, consistency	Conflict-free collaboration, informing, participation
Partners and suppliers	Recycling companies	LOW	HIGH	Material, innovation, cooperation	Know-how exchange, planning common processes, biorefinery approach
	Energy companies	HIGH	HIGH	Investing in their resources, R&D, cooperation	Planning common processes, customer-supplier relationship (Stora Enso provides them with energy), use of renewable energy sources
	Healthcare companies	LOW	HIGH	R&D, startups, collaboration, access to material	Know-how exchange, promoting health care issues, partnership (Start-ups)
	Printing & Converting & Design companies	HIGH	HIGH	Cooperation, quality, innovation	New biobased materials, 3D printing
	(ad agencies)				
	Universities / Applied Sciences	LOW	HIGH	Research ideas, innovation, collaboration, education for employees,	R&D, collaboration, idea creation
	Retailers	LOW	HIGH	Quality, consistency, customer feedback, collaboration, logistics	Gathering information on consumers, logistics
	Lumberjacks	LOW	HIGH	Partnership, working conditions	Sharing information on forest owners, contracting
	Gardeners & farmers	LOW	MEDIUM	Expertise, media exposure, collaboration on planning the supply	Collection of information about plants, sustainable use of environment

The columns Power and Interest are based on the following stakeholder matrix with four different strategies for the handling of different stakeholder interests. The power of stakeholders and the interest of firms towards stakeholders is either HIGH, MEDIUM or LOW.

One of the most recent developments in strategic management is the consideration of value networks within the value creation perspective. Typically the strategy within a transaction-based organization is to create added value to a product to gain profit for the owners of the company. The value network is managed the same way as the value chains. The value creation in a knowledge intensive era still tends to consider their regular partners as the only sources of value creation.

Business models built on the old assumptions of the industry are often faulty within the current environment of increasing complexity and intensity. It is very often the business model innovation which leads the successful companies towards the sustained competitive advantage. (Shafer et al. 2005)

A business model is a way to communicate the strategic implications with all of its stakeholders within the value network. As Stora Enso's representatives also noted, the communication of their advantages is what lacks at the moment. Creating processes to invent, design and test business models together with their stakeholders helps realizing the potentials within the markets. In the following section, we go further into elaborating the suggestions how to cope within the future time scale with these tools.

To create a common purpose within the value network and all the stakeholders of Stora Enso, the framework of sustainable lifestyles can be a common factor. As requirements for more sustainable lifestyles is increasing towards 2030, realizing the elements of the societal changes can even help companies for creating sustainable competitive advantage. (Backhaus et al. 2011)

VISION 2030: STORA ENSO = SUSTAINABILITY + INNOVATION + WELLBEING

In our future vision Stora Enso is a company that people know for the innovative solutions for sustainable, renewable, recyclable safe products for people and planet. Stora Enso takes actively part encouraging innovation for better.

Stora Enso Packaging in 2030 has a large eco-friendly product range for different packaging materials. Stora Enso is known as the company that replaced plastic!

Wellbeing

In 2030 everyone needs to take nature into account in their everyday decision making. People live more consciously. Stora Enso was one of the front players in the people and natural environment wellbeing movement in late 2010's.

Stora Enso created stronger brand value together with their raw material producers, employees and especially the forests. Respect for the nature campaign changed the internal decisionmaking and the

consumer awareness. Stora Enso's vision of moving the company to become the forest protector and caregiver to enhance the wellbeing has elevated the value within the whole production chain.

In 2030 Stora Enso is known to be the forest company that saves the forests.

Forest represents purity, sustainability, ecology, and wellbeing. The wood is still used as a raw material but mainly these are planted trees. Bio-mass is completely from the "waste", recycled materials, new innovations and from materials like hemp and willow. Stora Enso is a global player as an ecological pioneer.

Emphasis on employee wellbeing has brought wonderful results for the company.

Nature also brings inspiration for innovation, and Stora Enso has weekly brainstorming sessions for employees in forests, thus showing an example of an innovative way to utilize forest surroundings.

Stora Enso Green Care Forest Park

2025 Stora Enso opened Green Care Forest Parks to the countries that do not have many forests. The park would be for the preservation, education and wellbeing for people and animals. Stora Enso has been teaching sustainability and respect to the forest showing respect towards the many gifts forests have given to the company historically.

Sustainability

Sustainability as a term brings Stora Enso to people's mind, as company has already for two decades took part and led various sustainable projects. Cooperating with several stakeholders to recognize variety of opportunities and creating ways to use them has been crucial, and the company was able to engage new partners like gardeners and farmers, universities, startup companies, as well as health companies. They recognized these players as important stakeholders and acted as a global example of sustainably led company.

In 2017 Stora Enso took part in urban gardening and bee farming to promote the resolution of global problems such as clean air and survival of bees. In 2020 they started utilizing willow and hemp as renewable biomaterial sources, and created biorefineries to utilize all the resources out of the biomaterial. This resulted in marked improvements in the usage of renewable energy and recycled materials, enabling the branding of Stora Enso as a sustainably lead company.

Innovation

Stora Enso's Innovation Centre became in late 2010's a hub of creative ideas and cooperation. They invited a lot of university, NGO and company partners to thematic workshops and innovation days that resulted in many great progress steps in ie. material development and using augmented reality to create more visibility for the brand.

Less packaging but more value for customers has been gained by the ideas created in the innovation centre. Stora Enso has started using recycled materials, created new processes of producing the packages (3D printing out of biomaterials), as well as created business model innovations into more efficient use.

Innovation centres have broad cooperation with startups and local entrepreneurs, leading innovation booster in all the areas of innovativity. Stora Enso provides financial resources, knowhow and tools for the innovative process. Start-up innovation centres gain substantial mutual benefits; new innovations, business opportunities and value creation in multiple levels. One of the most broadly presented in media was the idea development around the Stora Enso's new brand as a global wellbeing and sustainability enhancer, that ended up making Stora Enso as one of the most well known companies on a global scale.

RECOMMENDATIONS & STEPS TO GET THERE

Future of packaging

In recent interview (28.4.2016) at the company website, Jari Latvala, the Head of the Consumer Board, talks about the renewables, innovations and value-adding to the customer. We completely agree with his standpoints but would take the focus further from the current consumer behaviour and expectations. We feel that packaging of the future must excel the requirements of the eco-aware healthconscious consumers. Using less chemicals in packaging and ensuring that nothing harmful is evaporating or diluting into product or air is important in all packaging but obviously most important in food and drink packaging. Replacing plastic and other harmful packaging materials offers a huge opportunity for Stora-Enso bio-based renewable materials. The coating and other extra materials used in the packaging process should be chosen with care to preserve safety for people and the planet.

Replacing plastic

Two-layered paper packages with a solid inner layer are getting more and more popular. The inner solid lining is often plastic. For example Brandimage agency developed a water bottle composed of paper coated by recycled plastic inside to create the perfect seal. In Stora Enso, Polyethylene is the most widely-used coating type used extensively as a humidity or grease barrier on packaging board. The Green PE used for coating the CKB® board is manufactured using sugarcane as a raw material.

Since 2011, the product development of micro fibrillated cellulose (MFC) has been ongoing. When making MFC, cellulose fibres are disintegrated into their components, fibrils. Hopefully with MFC and other inventions, Stora Enso can replace plastic, as well as aluminium and other toxic materials in the future.

Branding

Stora Enso branding needs to be strengthened all the way in the value chain. Company's aims should be more clearly communicated to the consumers also. Stora Enso should be visible as renewable sustainable safe packaging provider. The current company purpose of caring and taking action for the planet and people should be brought to the consumer awareness. Such branding would create value also to the converters for their eco-friendly safe packaging decisions.

Values & visibility

Sales but also most of the employees of Stora Enso are situated in Europe. This was one of the reasons why we decided to concentrate on the hidden potential within the very European organization to leverage the knowledge into a wider, global perspective. Stora Enso employees are the very natural messengers through their social networks.

Stora Enso has a pursue visibility to all stakeholders in a more efficient way. This is challenging for a material supplier that is early in the value chain. Consumer brands are always the closest to the consumer. One of the key issues here is to create a business model around the visibility and brand recognition of Stora Enso.

Stora Enso ensures safety - logo in the packages

Consumers demand for safe packages. Stora Enso provides them. With the Stora Enso logo in the package it is quick to see that the product I, as a consumer, buy a product that is protected with safe, environmentally sustainable, renewable packaging. This gives brand value also to the consumer brand producer that they chose for the ecologically best nice looking and yet very practical packaging.

Touching the hearts of the people

People are increasingly value driven, especially the new generations to come. Values have a growing importance in decision making for employees, B2B customers and consumers. The values have to be true, congruent, transparent and efficiently communicated to all the stakeholders - moreover they need to touch the feelings positively.

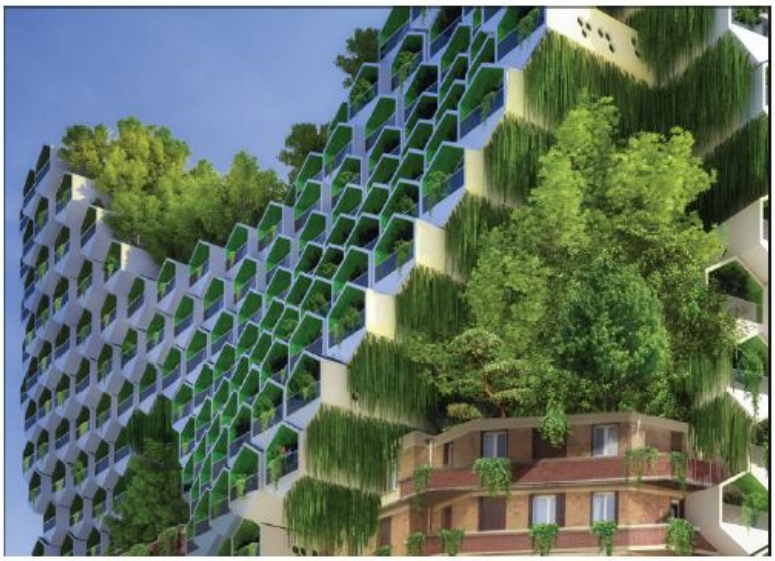
Many people want well and are willing to do the right thing but lack ideas, information and tools for the it. Stora Enso can help here being the active visible good doer.

Congruence

Sustainability has to be both connected to the processes of the company but also communicated more efficiently. For example, is all the energy used by the company renewable? Added value should be enhanced with combining renewability and recyclability within the processes. When the organization of the company has the insights of the whole purpose and vision of the company, they can be more agile in communication of these common values. (Hiltunen 2013)

Opportunities & Action Points

Urban gardening



Urban gardening is a growing trend. In France the rooftop gardens are boosted by legislation as in all new buildings in commercial zones across the country must comply with new environmental legislation that rooftops must be covered either by plants or solar panels.

Urban citizens are growing interest in urban gardening. We suggest Stora Enso to partner with some major player in this market. Stora Enso can build visibility as an sustainable forest expert that brings forest to the cities and cares about the wellbeing of people and the planet. There is an opportunity to be the specialist package producer for this market. The packages should be fun, practical, informative, organic and degradable. Urban gardening venture can gain high amount of PR coverage and consumer awareness for Stora Enso to be ecofriendly, sustainably, innovative wellbeing company.

Bee farming

Bees are dying due to the toxic pesticides in Europe and elsewhere. As nearly all the plants need bees to pollinate, this is a highly important issue for all of us. Bees need to be protected. Bee farming, along with urban gardening, provides an interesting opportunity to Stora Enso. Along with genuine investment in the sustainable wellbeing, there is also an opportunity to educate the public about the bees, sustainability and Stora Enso values.

Innovation

Start-up Innovation centre / cooperation with startups like Belightful

Along the new internal Innovation Centre there could be an Innovation Centre for the startups Stora Enso cooperates with. A Finnish start-up Belightful is producing butterfly feeders from plastic. Stora Enso could launch a product family, maybe together with Belightful, with totally recycled, renewable and recyclable degradable material to feed butterflies.

New materials

On material usage willow and hemp could be used as renewable biomaterial sources. Also, we suggest creation of biorefineries to utilize all the resources out of the biomaterial, as well as using recycled material as raw material.

Innovation competitions

Stora Enso is all about innovation and finding the new ways. Innovativeness needs to show internally and externally. Stora Enso could start a yearly global BIG Sustainability Innovation competition such as Replacing Plastic or Saving the Oceans. This would give good PR and brand creation and continues inflow of new ideas.

CONCLUSION

In the past years Stora Enso shifted tremendous to modernize in all the levels. Change has been for the better. Traditional forest, paper and pulp company's purpose has become "to do good for the People and the Planet".

We feel that the next step from "doing good" is to start "building sustainable wellbeing" to people and the planet. This new value needs to be transparent and congruent to the entire staff of the company and communicated to all the stakeholders. Consumers do not know Stora Enso's values nor products, especially in the consumer board section, currently. This requires change. Stora Enso could take advantage of becoming like "Intel inside" - "Stora Enso outside" known as a safe and ecological packaging brand. For building consumer awareness there can be a logo communicating sustainability efficiently, active sponsorship, grant and other forms of supporting innovation. Urban gardening and bee farming could be excellent ways to educate the public for those areas, ecological standpoints and the work of Stora Enso. The goal is that consumers know Stora Enso for sustainability, innovation and wellbeing. Together all the different stakeholders, consumers with Stora Enso create new ways to realize and implement these.

Stora Enso could become a company that provides different innovative ecological solutions in packaging and in other ways. The emphasis would not be in the forest business nor sustainability as much as before but in replacing plastic.

The ideal situation is where Stora Enso packaging is known and even demanded by the consumers because they know that the packages are safe for people and the planet.

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Combat Against Plastic through Collaboration and Open Structures

Elomaa Taneli, Lang Merja, Nisula Sakari & Sivonen Risto
University of Turku, Turku School of Economics, Futures Studies

Stora Enso 2040

In 2040 employees of Stora Enso have created an agile organisation, that collaborates with stakeholders in order to find new ways to replace plastic in packaging. Strategies for replacing plastic through innovation and environmental protection are designed together with stakeholders such as Greenpeace and leading biotechnology companies. The employees welcome this sort of collaboration, as they feel Stora Enso's values are their own.

One concrete example of this kind of close relationship is the new working method, by which employees work with customers at their premises. Teams rotate at different clients, learning from their needs from themselves and through their networks. Teams are embraced over individuals and the social atmosphere is identified as a key factor in success.

As the Internet of Things has become mainstream, the concept of client or customer does not mean only the package manufacturers, but the entire stakeholder community. The wider stakeholder core includes the current large consumer business owners, such as Nestle and Unilever, as well as the retailers and endusers of their products. Endusers, senior citizens, school children, working mothers and others are invited to test and cocreate products in labs situated in different megapolises around the globe. Internal entrepreneurship is encouraged: The owner of the idea has a stake of it and the permission to proceed with it. Sometimes such ideas start to grow out of the core business of Stora Enso. Stora Enso encourages its employees to start ventures of their own and also offers finance for them. The openness towards innovation in and out the organization promotes a movement that catalyzes dynamic structures of actors from various fields. These structures around Stora Enso remind of an ecosystem and join the larger vivid culture of cellulose based businesses.

1. Introduction

The forest industries have been under a furious and continual change during the recent years. The demand of traditional wood based products has declined, especially the demand of paper, and the industries have been forced to find new markets with new innovations (Wilenius & Kurki, 2012). This development has taken the industry actors, for example, to fight for resources such as land, to develop new value creating and capturing networks as has happened in the biofuel business, and to learn new behavior of familiar and previously unfamiliar markets (Lamberg et al., 2012).

At the same time with finding new business opportunities, the production of traditional wood based products has though continued. For example, wood construction or packaging industry products can be foreseen to have solid demand on the future marketplaces (Wilenius & Kurki, 2012). However, keeping up with the competition on these markets requires renewal as well (Porter, 1985). As the industry and market environments will keep changing, the forest industry actors will need to ponder their future

competitive advantage on the level of enterprises, businesses, and individual products and services (Ansoff, 1957). This they will need to do both to locate new opportunities for innovation, and to improve their existing offering to better match the needs of the future competition and market.

According to the Kondratieff wave theory, economies follow several decades long cycles of growth and recession. After the economic crises that began in 2007, the world economy has been estimated to approach now the sixth period of dominant economic growth, aka the sixth wave. Central to the sixth wave are intelligent technologies that will change the markets, bringing new type of solutions, and increasing productivity at the same time. Raw materials are becoming rare and potentially more expensive; the level of effectiveness at which energy and raw materials are used, are becoming critical in competition. Growing environmental awareness and regulation at the levels of nations and trade unions will have an impact on how firms build their future. (Wilenius & Kurki, 2012.)

Stora Enso has identified ending the use of plastic as a business opportunity. Achieving this means reinterpreting the valuechain, new type of collaboration with stakeholders, new approaches to innovation and suprising strategic alliances. The purpose of this study is to give recommendations as to how Stora Enso can in the future take care about how they are dealing with their customers and other stakeholders in order to achieve the goal of replacing plastic with materials based on cellulose in a sustainable way. The recommendations are found by identifying the key drivers for the future business of Stora Enso, and by analyzing how collaboration is changing between the company and its stakeholders. The focus of the study is on the packaging business of Stora Enso.

This report explains first the theories and concepts that have been used in the study (Chapter 2). Next, Chapter 3 describes the drivers that can be seen to change collaborative environment before the discussion (Chapter 4) and conclusions (Chapter 5). This study links to project Human Being and Value in the Sixth Wave (HUVA) (HUVA, 2016), which Finland Futures Research Centre (FFRC) runs in collaboration with other Finnish academic institutions. The study conducted in cooperation with Stora Enso.

2. Theoretical Background

Organizations do not live in a vacuum, nor in steady state equilibriums. It is, therefore, necessary to them to pay attention to the dynamic contexts, in which they operate. The basic strategy process in firms typically includes the idea of assessing the current strategic position in relation to the developing business environment. In addition, there typically are at the very least interlinked marketing and innovation activities that pinpoint the areas that require incremental development or are found to offer opportunities for radical initiatives on lucrative new markets. (Mintzberg et al., 2003)

The traditional way to do strategy work can, however, miss weak signs of opportunity and change that can arise and reshape the future (Hiltunen, 2013; Wilenius, 2008). The future can be influenced by our choices in the present, but the means for defining these choices need to be different from those of a traditional strategy process. Strategic foresight is about assessing the results of current activity, noticing problems before them becoming actual, understanding implications of possible futures at the present time, and creating vision on desired futures (Slaughter, 1995). According to Hiltunen (2013), anticipating (rather than predicting) the future is about acknowledging the change that is about to take place. The basic methods for anticipate the futures include ways to detect the so called stable factors, megatrends, trends, weak signals and wild cards (Hiltunen, 2013). One central method is the scenario

planning method (Hiltunen, 2013). Wilenius (2008) suggests seven key principles for the study of future foresight: Look to the future, anticipate future needs, make use of incomplete knowledge, expect the unexpected, think longterm and shortterm, dream productively, and respect knowledge . Hines and Bishop suggest that the process of strategic foresight is broken down to clear tasks of framing, forecasting, visioning, planning , and acting (Table 1) that as a whole form a process that adds ability to create and sustain quality of views of the future. (Hines & Bishop, 2006)

Table 1. *Tasks in process that aims at strategic foresight (Hines & Bishop, 2006).*

Stage	Description
Framing	Identifying problems and understanding their cost; understanding cost of solutions
Forecasting	Considering range of future possibilities; plugging into meaningful view of future
Visioning	Deciding what organization wants to be in future; determining if organization is working forward or avoiding the future
Planning	Creating a pathway to the future
Acting	Translating foresight into real action on an ongoing basis

Business environments are under a continuous change that can happen on various levels of value networks due to, for example, technological development or change in consumption (Hiltunen, 2013). To keep on top of the development, enterprises need remain on top of the knowledge on what is and will be going on. Wilenius (2008) uses the term creative knowledge to describe the context of strategic foresight. Creative knowledge includes the knowhow on business, foresight, renewal capability, and innovation. Enabling and developing creative knowledge helps an enterprise find its way in the future (Wilenius, 2008). The management of creative knowledge is above all about providing supporting conditions for the creative knowledge on the level of individuals, organizations, and the surrounding operative environments (Wilenius, 2008). The anticipated future needs will have to reflect themselves in the innovation activity of a firm, but it is important to communicate the future to stakeholders to prepare them as well for the change that can be anticipated (Hiltunen, 2013).

Heger and Rohrbeck (2012) discuss in the same vein, how knowledge and anticipation of required innovations are necessary, because the landscape changes dynamically and success requires active renewal. An innovation is associated typically with a new product or a new service on the market. To develop their longterm competitiveness, however, companies will need to build capability to explore, plan, and develop entire new business fields. This requires integration of multiple perspectives, ensuring participation of major stakeholders and decisionmakers, and functioning despite a high level of uncertainty, and taking into account interdependencies between the various influencing factors. The process of finding new business fields can include, e.g., describing use cases, analysing value networks for the behavior of relevant actors, scenario analysis to evaluate the evolution of the business field, target costing to assess financial viability, and finally validation of the business field with key offerings and their properties. (Heger & Rohrbeck, 2012)

Any organization has internal and external stakeholders that are the groups that can affect or be affected by the organization (Freeman, 1984). The internal stakeholders exist inside the organization,

and include the employees and according to some views also the management, since they affect and are affected by the organization they manage. The stakeholders vary by the power, legitimacy, and urgency of their claims (Mitchell et al., 1997). One motivation to manage stakeholders within the own organization or close networked organization is, in part, in the need to add performance and to that way increase profit. Another is marketing related the better the organization manages its close stakeholder relations, the better it manages the market and the supply for the demand.

Lately, it has become obvious that enterprises need to take part in the society. This is necessary for improved economic results, but firms are seen increasingly as corporate citizens that use power, are required to satisfy wider social demands, and act ethically (Garriga & Melé, 2004). From the innovation management perspective, it is necessary to consider the wider stakeholder environment while developing innovations (Porter & Kramer, 2006). All these views combined, the stakeholder relationships of the firm are been seen to influence the firm in the long term one way or another.

A holistic and longterm perspective that is interlinked with feasible business solutions not only help notice opportunities, but allocate risks, and fine tune decision making (Hines & Bishop, 2006). Risks are uncertainties that can be estimated beforehand or by past experience. Strategic decisions are made often, however, in unique contexts, and risks cannot be credibly assessed. Instead, decision making can require intuition and speculation without possibility to run comprehensive rational analysis. Epistemic uncertainty refers to uncertainty that exists due to imperfection of knowledge. This type of uncertainty can be reduced by research, and at best to risks in the analysis of uncertainties. Ontological unpredictability, on the other hand, refers to such uncertainty of the (uncertain, random or unknown) attributes associated with objects of analysis. If the basis of the attributes changes, the analysis becomes invalid. Where disruptive and downstream innovations are common, ontological unpredictability becomes important in innovation work. Futureoriented analysis and foresight can fail to grasp important developments, because of the lack of understanding the ontological unpredictability. Futureoriented analysis needs to be taken beyond the evidencebased approaches. (Tuomi, 2012) It is easy to see that strategic issues and weak signals have, due to the similar difficulty of unpredictability, similar difficulty, what comes to their ontological definitions.

3. Analysis

The analysis of the Stora Enso packaging business in relation to the research problem will be based on the current situation of the business. After describing the current solutions the analysis is based on the next considering the drivers of the change. These stages of the study could be considered to be framing in the framework of Hines and Bishop (2006; cf., Table 1). Forecasting, along with the same framework, is practiced in discussion and conclusions, while visioning, planning, and acting are left largely outside the scope of this study.

3.1 Current solutions

The majority of Stora Enso businesses aim at growth, and so does the packaging business. The packaging business manufactures fibre based board solutions suitable for liquid, food, pharmaceutical and luxury products. The aim is to "offer best offering to customers based on consumer packaging needs" and to make "brand enhancing packaging for the future with renewable materials, value added functionality with creative design". The ambition is to be the global benchmark. The main markets are in Europe,

China, and Asia Pacific in addition to this there are new growth areas. Out of the growth areas, especially North and Central Americas are seen to be interesting. The way to conquer markets is to follow the customers that are the brand owners, such as Nestle or Unilever in the food stuff industry. The performance throughout the value chain (Figure 1) is seen to be important. (Stora Enso, 2016)

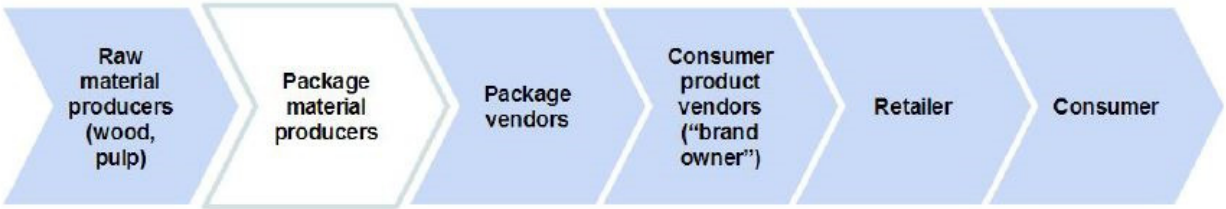

Figure 1. *Value chain*

One strategic choice at the moment is to use the fast growing eucalyptus fibre, but the pine, spruce and birch are being found new use for. From the perspective of Stora Enso, certain trends are more important than others. Stora Enso mentions especially growing population, urbanization, income growth, growing middle class, digitalization, global warming, changing life styles, eco awareness, and digitalization strategic to them. Growth of population means growth market, but people also need to keep fed; the mission to feed the planet avoiding waste is a mission to all. What comes to urbanization and income growth, the trends affect the way people consume. For example, Tetrapak has noticed the transformation from buying to bottles to packed stuff, as people move to cities. Similarly the growth of the middle class affects the overall consuming behavior.

Ecoawareness affects the story Stora Enso tells they wish to be up front making people understand the effort the firm makes. Stora Enso, according to their CEO, is in "war against plastic" everything made from fossil based materials should be made from wood tomorrow. Stora Enso wishes to be a "leading provider of renewable solutions". An example of this at the corporate level is the "plant back" programme, which aims at finding flat areas for economical growth of plants, while leaving the areas in between in their natural state. What comes to packaging, the package needs to fill its purpose, but after that renewability is a major issue. The consumers are in the end interested in where the package comes from, and what is the whole chain behind this brings packaging in the brand owner's' interest.

Finally, digitalization points direction to intelligent packaging. (Stora Enso, 2016) The development times and lifetimes of products have become shorter. This appears also as the pace of development. For example, while traditional R&D can take a decade for a new technology, there is demand for shorter term development together with the customers. The new innovation lab for cocreation has been built at the Stora Enso headquarters this need in mind. Customer need to be in the center of all innovation work. The Micro Fibrillated Cellulose (MFC) is one among the more radical new designs of Stora Enso. It is a product of the more time consuming, traditional R&D process. It is lightweight thin foil made of extremely fine fibre. The material is 100% renewable and more dense for its surface than materials made of traditionally manufactured cellulose fibre. Yet it consumes less raw material to get the same amount of end product. It is somewhat like gel or plastic, with haptic feel, and its strength can be enhanced. While the technology is beginning to ramp up for volumes, one big question is, how this particular technology could be used in the future. (Stora Enso, 2016)

One clear growth opportunity, apart from already invented solutions such as the MFC, lies in the digitalization of supply chains and packaging solutions. Intelligent packaging promises among other things brand enhancement, better user experience, more efficient operation throughout the chain, predictable business operations, improved optimization, improved sales. Alone the increased accuracy and automation of processes makes intelligent packaging interesting. The sets the question for innovative materials best suitable for such intelligent solutions. Scales are at best high which is why it would be lucrative to be the first mover in this field. (Stora Enso, 2016)

3.2 Drivers that change work, organizing work, and collaboration

Taking seriously the notion of the Sixth Wave (cf. Introduction), it must be acknowledged that this will drastically change the nature of work. As old industries are replaced by new ones, it is likely that also corporate cultures and processes will change too. This change has been studied in the HUVA project (HUVA, 2016), where characteristics of new organisations are identified. One such organisation representing the new is Reaktor that despite of or exactly because of new ways has been able to grow into a 43 million euro business with 360 employees in 15 years of time. In the last three years, the growth has been exponential. At the centre of Reaktor's success is its human centric business culture (Kurki, 2016).

Based on ethnographic observation of the everyday life of Reaktor, the researcher were able to identify some key characteristics that make Reaktor different. The most powerful such characteristic is that company's work is team based. In Reaktor teams are praised, not individuals. The key to the success is the culture that Reaktor has been able create within the company. In this, the most important process has been and continues to be recruitment. (Kurki, 2016)

The teams are trusted to find the best way of accomplishing the projects they are assigned to do. The power and responsibility lie within the teams. Should they need help from the HQ, they can get it. Reaktor also invests in the social wellbeing in the company: people are encouraged to get to know each other and spend time with each other in order to allow informal information flow. The teams are not fixed but people can change during a project. For the dynamics of the team this causes no harm, as employees have their say in the recruitment process and they trust their colleagues. (Ibid.)

Essentially Reaktor is building a community of people where people feel at ease with one another and have a shared sense of common goals. In this community there are no hierarchical roles, but everybody does everything. It is safe to express feelings. The actual project work is based on consulting colleagues in the team and through virtual channels. The teams themselves work directly with the customer. This makes it easier to be customer focused: the systems are build for clients needs by asking them what they need. If an opinion is needed, the person is contacted directly, preferably without an organised meeting. Little documentation is done, but information sharing is extensive. Conflicts and issues are mediated within teams by the team members. There are also external facilitators that can be used to help. Also individuals have great responsibility: they make decisions in the projects. Before that they only must consult their colleagues and ask for feedback. (Ibid.)

Besides Reaktor, there are other interesting benchmarks paving the way into the future of work. One example is the impact of sharing economy. PricewaterhouseCoopers (2015a, 2015b) has estimated that peertopeer finance, online staffing, peertopeer accommodation, car sharing, and music and video streaming to grow in global revenues from $15 billion in 2015 to $335 billion in 2025. This means that spaces are becoming hybrid, as the examples of Airbnb and Hoffice showcase well. As they become hybrid it also means that expectations on the spaces grow indeed it is the space where people spend

most of their time in. Most people tend to decorate their home and have a personal vibe to it, this vibe they want to also find in their working spaces. One of the most tangible examples is the growing demand of coworking spaces, and the need for these, which has doubled in cities like New York during the last five years (Perez, 2016). This sort of demand can be seen domestically in Helsinki as coworking spaces like Hub13[1] and M.o.W.[2] that are stepping into the picture, corporate offices encourage open space offices and open innovation, and coliving is becoming increasingly popular in different stages of life. The shift can be assumed to be global and examples of this found across the globe.

Not only the space but the content of the work itself faces growing expectations. In a survey conducted by a US based engagement and performance firm The Energy Project and Harvard Business Review for almost 20000 employees they found out that meaningfulness and value are in the core of motivation. According to the survey employees who say they have more supportive supervisors are 1.3 times as likely to stay with the organization and are 67 percent more engaged. The employees who found significance and meaning in their work were more than three times as likely to stay with their organizations and had a 1.7 times higher job satisfaction. (The New York Times, 2014) The same evidence has been found in Finnish studies too. Demos Helsinki's (2013) report on hidden competences shows that university and applied sciences students are thinking similarly about work life. The students named pleasant working environment, friendly colleagues and a stable job as the three most important aspects of work. Straight after these factors they named meaningfulness and sharing the same values with the company. Noticeable is also what was not mentioned: from the sixteen different topics the three least important things were high salaries, long vacations and the possibility to see the world.

Creating such working environment that is inspiring and employees feel committed to, requires efforts. An example of creating an innovative workplace is the media and finance giant Thomson Reuters. First they created a catalyst fund for innovative concepts but quite fast it became the widespread culture throughout the company. This was achieved through different methods, such as building innovation metrics, appointing "innovation champions" in different business units, creating innovation workshop, building a new intranet channel for internal entrepreneurs and creating a new communications campaign. (Harvard Business Review, 2014)

Indeed the company does not have to be a new player in order to be agile. Saalasti Group is a domestic example of creating a new kind of organizational environment in a traditional industrial family company. Saalasti Group manufactures innovative heavyduty bioenergy machinery and has stated that its goal is to be the best place to work in finnish manufacturing industry (Saalasti 2016). In their view coaching is the key function in the company. Like at Reaktor, at Saalasti every employee has the authority to do the decision about his tasks. They can and even should ask help from their supervisors, but in the end the employees themself have the authority and responsibility of their own tasks. (Saalasti, 2015)

The future of work seems to be about internal entrepreneurship, ownership, commitment to the values of the employer if they are in line with your own, teambased and motivated by internal aspirations, not by high salaries. It can be argued that this sort of organisation is easier to achieve when it is build on this ideology from the beginning with. However, as showed above, it is possible for traditional companies as well.

[1] http://www.hub13.fi/
[2] http://mow.fi/

3.3 The future of wider stakeholder environment

A business philosopher Christopher Evatt has researched different businesses and organizations argues that companies cannot anymore in the future separate themselves from their environment and their business "ecosystem" that they function in when making decisions. It seems that traditional way of the industrial era is coming to its end and there is a shift to another "level of consciousness" that Evatt calls the conscious business. In short, the concept means that companies must become more human and life centric, as well as increase collaboration between stakeholders, rather than only look for their own good and profit. This happens by taking into account, how the whole network, or even the whole "ecosystem", could thrive. Evatt suggests that bringing people together is possible in this way, if a common purpose for collaboration is found and the traditional linear thinking is changed to lateral thinking where connections are made to new directions of shareholders and they are made cocreators of the future. This will lead to releasing human capacity that is very valuable for any company. (Evatt, 2016)

Open innovation has been a hot topic already for over ten years, ever since Henry Chesbrough published his book Open Innovation (2003). According to him it is a concept that helps businesses to innovate more profitable way (Chesbrough, 2011). Open innovation is a concept where knowledge and knowhow flow over boundaries of organizations making innovation processes more decentralized and participatory in nature. In other words bringing individuals and organizations together, as well as connecting internal and external innovation. This way more human capacity is released and put into use. Emphasis and aim at first was reducing the gap between industries and academia. According to Chesbrough, many organizations have found benefits from open innovation, such as, increasing differentiation in the market and creating new revenue streams for the company (Chesbrough, 2011). Chesbrough gives examples of a couple of huge companies that succeeded to move from closed innovation to open innovation, such as, IBM, Intel, and Xerox. IBM's transformation from a position where it had a near monopoly as a personal computer manufacturer to a service company is remarkable example of open innovation put in use (Chesbrough, 2003).

Chesbrough gives recommendations for the use of open innovation – companies should find and use technologies outside of the company as well; companies should sell, rent or trade technologies or intellectual property that they do not turn into business; companies should launch spinoff companies out of innovations that are potential, but not in the core of their existing business (Chesbrough, 2003). He also states that it is not only bringing together different players in the supply chain, but also universities, startups, venture capitalists and customers (Chesbrough 2011). Recent studies support the implications that companies can benefit of open innovation especially when open radical innovations are considered (Greco & al., 2016). More specifically innovation oriented supplychain integration and crossorganizational teams can enhance performance when it comes to supplierquality problems or production capacity (Lii & Kuo, 2015). Procter & Gamble has introduced their own model that they call connect and develop where they try to get the best people or organizations to work with them on an idea or an issue that is on hand – no matter, if the organization is business or nonprofit. They claim that this kind of collaborative innovation is going to be the next standard that every company should adapt or they will go out of business (Huston & Sakkab, 2006).

One driver for collaboration in the future can be found in the change of private life of people. Due to digitalization and globalization people have started to collaborate and exchange ideas over cultural and spatial boundaries. When technology is becoming more intelligent this will be even easier and normal in the future. If it is happening in people's personal life then it can be expected to happen in the

working life as well, because in modern times people do not separate their lives from working, but rather think their work as a big part of their lives and identity. We also might conclude some future standards by looking at the behavior of the youth today. For instance, according to PwC's report in 2011 (PwC, 2011), what sets millennials apart from previous generations is their use of technology. Growing up with broadband, smartphones, laptops, and social media being the norm and expect instant access to information. Another effect of hyper connected lifestyle is that they no longer make a distinction between online and offline (Ideas in Digital 2016). This aspect of course helps participation, because you can contribute through online by commenting and sharing. Because of these aspects the millenials and post-millenials are called the Generation C – C meaning connected. This techsavvy generation will be employees, clients, and other stakeholders in the future and their behavior should be taken into account, if we want to be serve them best.

The danger of companies who do not engage themselves to collaborations is that opportunities can be missed and threats might have a better chance to come by surprise. According to Antoine Frérot, the CEO of Veolia, in the World Economic Forum the companies that do not build synergies in different sectors through partnerships are likely to miss strategic breakthroughs and potential emerging markets – and in the end left behind (Frérot, 2016).

4. Discussion

According to the Worldwatch Institute, the global plastic industry generates revenue of about 600 billion dollars annually (Worldwatch institute, 2015), which means, it is a huge business with a lot of potential. By announcing a "a war against plastic" Stora Enso has addressed its willingness to replace plastic with its sustainable products and willingness to capture the potential of the plastic market. This ambitious act can be seen good for the company and for the world as well, because megatrends, such as climate change and scarcity of resources, are driving companies to be more sustainable in their business.

Undoubtedly, the future will be written by renewable resources, bioeconomy, artificial intelligence, nanotechnology, and digital technology – but it will also be written by new partnerships. In this current state of flux no position can be seen as definitive. Building synergies with economic players and social players around companies is must, if a company wants to seize opportunities in the future. When taking into account the megatrends that will be driving most of the businesses now and in the future, we can conclude that everybody needs to change and address to these changes. If then everybody is having the same challenges then, why not collaborate and get over them together?

How could Stora Enso approach open innovation, humancentric working culture and collaboration in a wider ecosystem? We suggest to follow the examples set by companies presented above. We believe, this is the way to enhance employees commitment to Stora Enso and stakeholders' commitment to Stora Enso.

Stora Enso Tribe

Learning from the example of Reaktor, a lot can be won through empowering teams instead of rewarding individuals. Empowered team members commit to each other are more agile when listening to the customer's needs. To put it short: the customers' needs are met faster. Regarding the goal of enhancing

collaboration with stakeholders, team structure is essential. Input from the client can be received directly without formal meetings as the teams will be working closely with the customers.

The above entails, when recruiting a new employee, the key question is, do I trust this person to seek for an advice and be able to make decisions. If not, then this person is not the right one. Essentially, like Reaktor, Stora Enso should build a community of trust and ease and where hierarchies are low.This should be built around shared sense of common goals and shared values. Community structure enables organic flow of information also within the company.

Innovation through collaboration

As discussed above, companies that belong to the future are those that work closely with stakeholders and form an interdependent ecosystem with one another. For Stora Enso this could mean, for example, allying with environmental organizations and startups to combat plastic usage. Maybe there could even be a shared strategy, designed together. This sort of collaboration would enhance the value basis of the company and would attract new kind of talent.

This ecosystem could be built also through radical internal entrepreneurship. If an employee is trusted with ownership of his idea that then later becomes big but slightly off the scope of Stora Enso, this employee could be encouraged to go ahead and start a venture of his own with financial support of Stora Enso. This way, Stora Enso could be in the middle of the network of startups all working towards similar goals.

Internal entrepreneurship can be enhanced also in other ways: idea challenges, idea distribution channels, appointing innovation champions in different units and open pitching sessions and accelerating programs are all tested and proven to work elsewhere, not only in small companies but in large public organisations such as U.S. Department of Health (The U.S. Department of Health and Human Services, 2016) . The UK based innovation charity Nesta has composed a practice guide for challenge prizes that helps companies or organizations to understand and develop challenge prizes. There is a wide variety of challenges from inhouse experiment to open acceleration, from thematic to specific and teams or people working in solitude or in a supported process. According to Nesta (2014) with challenges you can: “shine a light on a neglected issue or problem, bring new products and services to market, prompt new collaborations and partnerships, build the capacity of new innovators and support their entry into the market”.

The most value, however, would come through close collaboration with different customers such as Nestle and Unilever and but also user groups: school children, working mothers, geeks, senior citizens that all possess important information in all key markets. Innovation labs should be located in key areas and they should be open spaces where everybody is welcome to share their thoughts. As the Stora Enso teams would also work at customer’s premises as described above, there would be completely new flow of information to build customer service on. Digital platforms should be exploited in collaboration as well for easier flow of information and for easier participation.

5. Conclusions – Packaging the Future

Stora Enso has a vision of being a sustainability company of the future aiming to replace plastic with its own products. To reach its goal we believe that Stora Enso must listen and collaborate with customers, cocreate and innovate with stakeholders, and build new best practices for its most valuable asset – the people of the company. It has to learn new ways of open innovation and start to form its organizational model towards a more permeable one allowing ideas and people to spinoff and access the company easily.

The shift, be it incremental or rapid, should be executed by using participatory tools, such as cocreation and crowd innovation. The methods presented in the discussion part are possible outcomes of an internal innovation process. By internal we do not mean exclusive managerial workshops, but a process that stems from the needs of the organization itself.

Pushing the learned best practices into action should be done via a careful observation of Stora Enso's own people, their challenges, feelings and motivations. In the execution it could, however, be beneficial to use a third party specialised in humancentric organizational shifts as they might have a better chance to get the key stakeholders and people to get involved in the participatory process.

The choice of best means is therefore left open. We have merely provided a glimpse of the future organization that we believe Stora Enso should become, combined with information about the shift of work and the way work is perceived. We have also provided ideas for some best practices different means and examples of ways that could help Stora Enso to improve as an innovative company. The next step for Stora Enso is to decide (our suggestion is that in participatory way), how to vision, plan, and act (Hines & Bishop, 2006) in order to start the process.

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FUTUS5 FUTURES CASE EVALUATION

The FUTUS5 Futures Case Evaluation (8 cr) belongs to the curriculum of the Master's Degree Programme in Futures Studies as an obligatory course. In it students were provided material of different case studies done at the Finland Futures Research Centre. They met researchers, who had been working with these studies, they listened lectures given by these researchers and they had a possibility to discuss about the case studies with them. On the basis of all of this students compared different case studies and evaluated some of them in groups.

The main assignment of the course was to write an extensive case evaluation report on a specific case executed in groups as well as a group presentation and discussion based on the presentation and the written report. In this publication we have an opportunity to read the written report of one group. In addition, in autumn 2015 students wrote an exam based on the collection of reports and articles presenting the case studies with relevant additional information.

The aim of the course is, that students will be able to compare various cases based on futures research methods, to critically evaluate given cases by drawing conclusions and restructuring the logics and contents, to work as a group in the evaluation process, to evaluate and summarize futures cases from the beginning to the conclusions and to be able to apply futures studies methods in various case studies. Responsible teacher: Katriina Siivonen.

The report written by Nick Balcom Raleigh, Ellinoora Leino-Richert, Sakari Nisula, Laura Pouru and Elina Salminen is an evaluation of the project Mirhami 2030 concerning the future of food. The report is very clear, analytical, well-structured and well balanced with an own critical voice of students presented explicitly in the text. Students argued in their analysis that food culture has come across more radical changes than researchers estimated in their research results only few years ago, and gave some methodological suggestions for further research to reach more radical changes. Students presented also critical points of views about the utilization of the results of Mirhami in the Finnish society. In the daily research work there is seldom possibilities to evaluate earlier research results. Thus, this kind of reflection by students gives priceless understanding to the whole community of futurists at the FFRC and elsewhere.

Case Evaluation: What's for Dinner Tomorrow – Mirhami 2030 Project

Nick Balcom Raleigh, Ellinoora Leino-Richert, Sakari Nisula, Laura Pouru & Elina Salminen
University of Turku, Turku School of Economics, Futures Studies

1. Introduction

In this paper we will review the case focused on future of Finnish food consumption What's for Dinner Tomorrow - Mirhami 2030 project presented in FUTUS5 Futures Case Evaluation course by Project Manager Riikka Saarimaa from Finland Futures Research Centre. Mirhami 2030 project was conducted in 2006-2009 by FFRC in co-operation with National Consumer Research Centre, MTT Agrifood Research Centre, and Finpro. The project was funded by Ministry of Agriculture and Forestry and six companies from different branches of food industry (Raisio, Saarioinen, Fazer Group, S-group, Olvi, Helsinki Metropolitan council).

The aim of the Mirhami 2030 project was to contribute to the implementation of the food industry's quality strategy and the development of competitive products. This aim was reached by first doing extensive background work using statistical analysis and change analysis of the agricultural policy environment. Secondly, a survey was conducted collecting information on the various dimensions of changes in the operating environment. Thirdly, expert interviews were done in collaboration with the global Finpro network. In addition, consumer workshops were organized in Finland in order to get new information about desirable and probable futures from consumer's perspective. All this information was then used to compose scenarios describing Finnish food consumption from different perspectives. (Kirveennummi & Saarimaa 2008.)

The competitiveness of Finnish food producers derives from understanding how consumers will choose their daily meals today and in the future. The research results and scenarios from MIRHAMI project can offer valuable food for thought: Will sustainability as a value determine the consumption of food in 2030? Should we produce everything locally? Are consumers honestly willing to favor local products? How does climate change affect Finnish agriculture? Will people be eating red meat in 2030? Who should take the responsibility of the ecological food consumption decisions? Can healthy and ecological food be combined?

Our group decided to choose the Mirhami 2030 project as it is extremely interesting regarding Futures Studies, especially from the global perspective. Food security is one of the universal concerns for humanity and even the historical climate change agreement approved last week in Paris recognizes "the fundamental priority of safeguarding food security and ending hunger" (FAO 2015). The decisions made by politicians today will have enormous impact on global and local food markets of the future.

This paper evaluates Mirhami 2030 project from different perspectives focusing on questions presented in the FUTUS5 introduction lecture (Siivonen 2015). In addition, we have selected relevant evaluation criteria from articles regarding future research evaluation. Our main focus is to evaluate the applied methodology, research material, and theoretical background as well as to raise ethical questions related to the Mirhami 2030 project.

2. Evaluation

In the discipline of futures studies, evaluation can be conducted in multiple ways. Evaluation is a widely discussed topic in futures studies literature and in foresight networks (Foresight Europe Network meeting 13.6.2015, Turku). For the purposes of this evaluation, the systemic approach advocated by Kalle A. Piirainen, Rafael A. Gonzalez and Johanna Bragge (2012) will be used. This systemic approach is intended to increase the transparency of a futures research project and generate more confidence in the results. The systemic approach they propose uses a means-ends logic as well as an integration of "effectiveness and perspectives". The evaluation framework they describe has three levels: practical, technical, and researcher's ethics. (Piirainen et. al 2012, 467.) The authors propose that this evaluation framework, presented as a series of questions, can be used as a checklist while designing a research project or to evaluate the outcomes of a research project (Piirainen et. al 2012, 465).

The systemic evaluation framework proposed by Piirainen et. al. fits for evaluating MIRHAMI 2030 because it is ideally suited for projects with a mix of aims, stakeholders, and methods. Because it is concerned with increasing transparency as a means to boosting credibility as a means to driving foresight impact, we found it provides an useful platform for assessing this case. Additionally, the questions the framework asks are helpful in framing the evaluation.

2.1 Evaluation of method selection

When evaluating MIRHAMI 2030 project we should first take into consideration the aims that were set for the research. In the final report of MIRHAMI 2030, it is stated that the aims of the research were to enlighten the food consumption in Finland from the 2030 perspective, and to open up new viewpoints for possible changes in the future when the operational environment and everyday choices of consumers are considered (Kirveennummi et al. 2008, 8-9). To evaluate the case, we then should see how the methods chosen contribute to the aim of the project and, if they are reliable and utile, and provide reliable data from the Futures Studies and Foresight point of view.

Piiroinen et al. set a good starting point for our evaluation by arguing "that knowledge of the future builds on analysis of the present, finding the processes and drivers that affect the future, and working out the plausible developments" (Piiroinen et al. 2012, 469). We will use the aforementioned systemic evaluation framework for futures studies as a 'checklist' to see if the methods used in this case are valid for bringing knowledge about the future. The technical level of the framework will be used here. The criteria are stated as questions (italic) and the "answers" follow each question.

MIRHAMI 2030 project was a multidisciplinary research and the methodology used is quite vast which is reasonable, because of the complexity of the issue. The methods applied were: statistics about the food consumption in Finland between 1900-2002, international surveys, applied and practical Delphi, Futures Workshops, and Scenarios as seen in the figure 1.

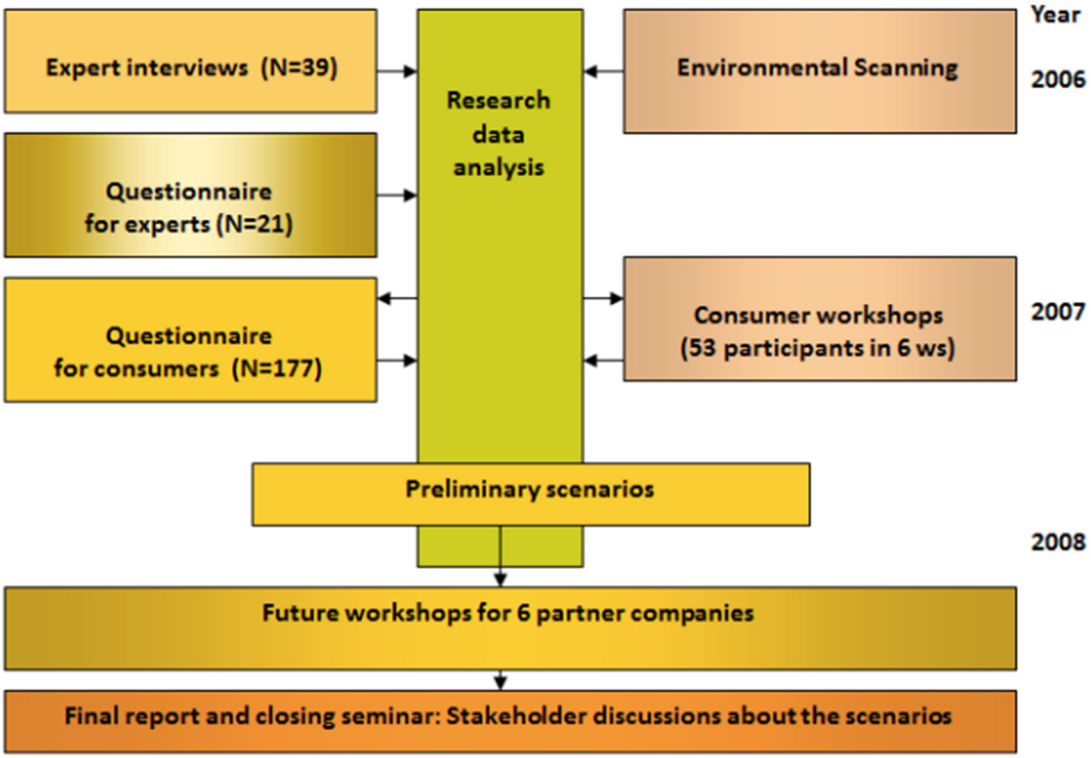

Figure 1 The Scenario Process of "What's for Dinner Tomorrow" (MIRHAMI 2030).

What data do we need to answer the question?
Are the chosen methods appropriate?

Analysis of the present (and past) was delivered with statistics about the food consumption in Finland, along with international surveys that provided useful data about international trends that might also affect Finland. On the basis of the gathered data a Delphi study was setup to find out processes and drivers that affect the future. It seems that the Delphi study was designed and used carefully in line with common guidelines for the method. The common guidelines suggest that Delphi method should have experts answering several rounds of questionnaires and interviews (Gordon 2009, 4). In addition, an expert matrix was used to form the expert panel helping to ensure it was comprehensive and included experts from varying fields and backgrounds. These experts answered interviews and the Delphi questionnaire. A unique feature of this particular Delphi study was that consumers were invited to answer the same questionnaire as the experts. This inclusion gave voice to consumers as 'experts' in their consuming and provided new insights (Kirveennummi et al. 2013, 85).

The use of Delphi can be seen as reasonable in this case because it is a good way to handle complex issues. Vinnari and Tapio argue that Delphi method should be used for data collection, data analysis, and for representing results (Tapio & Vinnari 2012). In this case, the data collection and analysis brought results that were the major drivers and trends of food consumption, such as climate change, growing population, and globalization (Kirveennummi et al. 2008, 20).

The outcomes of the Delphi study served as starting material for the Futures Workshops. These Futures Workshops were first held with consumers and then with the six companies that participated in the research. This method emphasizes the futures studies' characteristic of participation by different

stakeholders–here consumers and producers. Aims of Futures Workshop are usually to enhance learning, create ideas, and engage people to action (Jungk & Müllert 1987, 124). Tapio and Vinnari (2012) state that the method is great for data collection as well, and here it provided consumer and producer insights and understanding useful in scenario building.

On the basis of the surveys, statistics, Delphi, and workshops scenarios were built to represent plausible developments and futures when driving forces identified were taken into account. Kirveennummi et al. (2013, 83) state that "scenarios are ways of organizing our knowledge and understanding of possible futures". To make the complexities of the future of food consumption more understandable, the researchers visualized the scenarios as star maps. They argued that these star maps contribute to understanding different factors and relationships within the scenarios (Kirveennummi et al. 2013, 86). In the end, scenarios are a great method for representing results (Tapio & Vinnari 2012) that can be used for supporting strategic decision-making.

2.2 Evaluation of the selected research material

Do the prospects cover the future and challenge the status quo?
Was the analysis solid, reliable and valid?
Is the research material selected successfully?

The methods used produced four very distinct scenarios that presented possible, as well as, desired and undesired futures. They show that the year 2030 can be described by taking into a consideration major driving forces and choices made by people (Kirveennummi et al. 2008, 61). The scenarios challenge the status quo by offering options for the future. Even though, the four scenarios are not enough to cover all the prospects of the future, they help the research meet its goals. The aims of the research were to enlighten the food consumption in Finland from the 2030 perspective, and to open up new viewpoints for possible changes in the future when the operational environment and everyday choices of consumers are considered.

The research materials were provided by statistics, professional surveys, and three different Futures Studies methods through which various experts and stakeholders contributed input. The selection seemed successful and adequate for meeting the aims of the research. However, we argue the research was missing input from of a few key stakeholders and therefore missed an opportunity to reach further in its explorations. These missing stakeholders are the dairy industry and food culture "forerunners". Dairy companies comprise a significant part of the food market in Finland and their perspective would have produced important materials. Similarly, including food "forerunners" such as independent restaurant operators, small organic farmers, and food politics activists could have produced materials such as weak signals of possible new trends which would have been valuable in producing more provocative future images.

2.3 Evaluation of the theoretical background

The theoretical framework of the MIRHAMI project stems from futures, consumer and cultural studies (Saarimaa 2015). The research team makes a solid case for using these three fields of study to approach the topic of food. Still, emphasis was more on futures studies and especially on scenario thinking. For

example, Futures Workshops with consumers and with companies included a short introduction to futures thinking, foresight and futures research education. Also futures thinking and scenarios were discussed more fully in the article over of consumer or cultural studies. The research team states that they used consumer studies and cultural anthropology to interpret research materials produced from futures studies methods (Kirveennummi et al. 2013, 85). What these interpretations were or how they interfaced between processes is unclear from the project's report and published academic article.

During the scenario creating process, environmental, social, and cultural changes were analyzed (Kirveennummi et al. 2013, 83). Since the subject of food is very multidimensional, other things could have been taken account as well. For example, if political changes or technological development would have been taken more into account, how would the scenarios changed then?

2.4 Ethical issues

Considering the ethical aspects of MIRHAMI case, it is very rich when it comes to values. Cultural, social, environmental and religious values affect people's choices and preferences in eating and food. For proper evaluation of these ethical issues in the case, we can apply the evaluation criteria based on The systemic evaluation framework for futures studies (Piirainen et al. 2012, 471) and the Ethical level of that framework (Input, Output and Impact). The criteria are stated as questions (italic) and the "answers" follow each question.

Who is the client or beneficiary whose interests are (should be) served?
Who is an expert or who should be involved as competent provider of experience and expertise?

These two questions are basically dealing with the same thing in this case, and the answer is consumer. The future of food consumption was examined from the consumer's point-of-view, emphasizing sustainability in everyday life. For a long time, there has been research done in food production and consumption ("food policy" and "food governance" by Lang et al. 2009), but recently the new focus has been on "consumer choice" (Kjærnes 2012). To involve consumers as experts of their own everyday lives for the project was a smart thing to do, since consumers' ideas of sustainable futures have not gained enough attention in policy recommendations (Kirveennummi & Saarimaa 2008; Kirveennummi et al. 2013, 83). Also, consumers are becoming more active e.g. in product development (consumer → prosumer, urban farming), in demanding the best quality ("from farm to fork") and in food safety issues (Saarimaa 2015).

In addition to consumers, also other "experts" were used in the case, like food company representatives. These companies were paying sponsors of the research project, and for them it was an opportunity to develop new products. It could be argued that the organizations and companies paying for the research were the ultimate beneficiaries of the research, however in this case, the research team made a point structure the research to serve the interests of consumers. However, outcomes from portions of the research, mainly the future workshops held with the companies, were treated with confidentiality and primarily served the interests of the companies in developing a competitive advantage (Saarimaa lecture, 2015).

The collaboration between the various actors in the scenario process was important, since all could learn from others and e.g. companies could gain insight knowledge about consumer preferences and

come up with new innovations. We hope that this cooperation will continue in the future, since the food industry holds a key position for future well-being of all (Kirveennummi & Saarimaa 2008).

What worldview determines that which constitutes an improvement?

Food is a very interesting area for dealing with different sustainability challenges at the same time. The critical question is how to examine and search for alternative forms of sustainability? For consumers, there are no clear normative standards that could or even should be followed. Instead, there are different aspects of sustainability, and the challenge is to look at the complex issues in bottom-up or multi-actor processes. (Kirveennummi et al. 2013 90.) MIRHAMI project provided a means for realising a desired future of the customers. The discussions during the scenario construction contained elements of backcasting processes, where people's hopes and dreams of favorable futures were discussed (Vergragt & Quist 2011). The project represented a hybrid form of a scenario process containing features from both intuitive and explorative forecasting ("What could or would happen if…") as well as normative backcasting processes ("What should happen") (van Notten et al. 2003).

As an outcome of the project, starmaps were drawn to describe the scenarios in visual form. The starmap shows the stated driving forces and consumer trends as well as their relations. Most of these drivers - e.g. threats of unequal availability of food, vegetarianism, climate change, environmental impacts, and population growth - people tend to see as important issues affecting the future of food. (Kirveennummi et al. 2013, 83-84.) Still, people might have very different values and therefore opinions about those issues. This explains the difficulty of describing one preferable future of food for everyone. The consensus of the most desirable future cannot be found simply in people's various values and ideas but by dialogue among the different actors. Desirability cannot be assessed without carefully exploring and testing it in contexts of changing everyday-life. (Kirveennummi et al. 2013, 90.)

In the four scenarios, questions of sustainability appeared in different settings, in different cultural contexts, and with different consumption patterns. Different values played important role in the four scenarios:

1. scenario: Eating, and consumption in general, is driven by strong hedonism and individual health concerns.
2. scenario: More radical ecological thinking in consumption as well as in production and distribution.
3. scenario: A major focus is placed on human survival.
4. scenario: The acceptance of radical innovations, as well as the ability of technology to save cultural values. (Kirveennummi et al. 2013.)

The research team presents a worldview that priorities sustainability as the ideal improvement to foodways. Complexities as well as positive and negative consequences of various approaches to food sustainability appear in the resulting scenarios. (Kirveennummi et al. 2013, 89.)

3. Conclusions

According to Van der Steen and Van der Duin (2012, 487) structured and systematic evaluation of futures studies should be regarded as an investment in the credibility and impact of the profession. According to them, structured and systematic evaluation will increase the transparency of foresight work, which can result in increased trust in foresight work, which in turn can result in more future oriented strategy, policy and decision making. In this paper we have evaluated the Mirhami 2030 project using the systemic evaluation framework developed by Piirainen et al (2012).

To mention few things, we were left wondering, the primary output of the project was a set of scenarios, which were not too surprising or thought provoking. Therefore, it can be asked if Mirhami 2030 project really succeeded in recognizing the fundamental assumptions underlying the status quo, which is seen crucial in foreseeing also the more drastic changes (Piirainen et al. 2012, 468). Could more radical conclusions been made from the data? It would have been interesting to include the dairy sector and some "forerunners" of food sector into workshop or Delphi participants. Also, was the final report enough as an output considering the massive amount of data gathered with various methods and stakeholders involved? What have been the implications of this research project?

Taking into account traditional means-ends evaluation, which reflects the achieved results into the set aims (Piirainen et al. 2012, 467), Mirhami 2030 project was intractable, because the aim of the project was described differently in all the materials it produced. In an annual report from the food development program cluster (Kirveennummi & Saarimaa 2008) the aim is stated as: "The aim of the Mirhami 2030 project was to contribute to the implementation of the food industry's quality strategy and the development of competitive products." In Saarimaa's case presentation to our class (2015) she said: "The aim of the project was to look at the futures of food consumption in Finland at 2030. The main idea was to create alternative scenarios from the perspective of consumers." In the project's primary report, Kirveennummi et al. (2008) wrote: "The aim of the research was to enlighten the food consumption in Finland from the 2030 perspective, and to open up new viewpoints for possible changes in the future when the operational environment and everyday choices of consumers are considered." Confusion caused by these differently stated aims makes evaluation using a means-ends approach difficult because it is unclear which aim the research outcomes should be reflected upon. Frankly said, this kind of un-uniformity in reporting decreases also the credibility of the whole research project.

The research results and scenarios from this MIRHAMI 2030 project could have been applied in the strategic decision making within food producers and the whole food industry as it provides insights on possible changes in consumer behavior. In addition, this case could have been utilized in political decision making and governmental strategy work. We found out that, in 2008, Finland's Prime Minister Matti Vanhanen called for increased food production in Finland and a national food strategy - Food for tomorrow was developed in 2010. It is surprising that MIRHAMI 2030 project or Future Research Centre is not mentioned in the report and the experts involved were selected from other organizations. (Andersen et al. 2010.)

However, as one of the main funders of MIRHAMI 2030 project was the ministry of agriculture and forestry, it is very probable that the results were further applied in the national food strategy preparation work. In addition to MIRHAMI and National food strategy projects, we noticed that in 2008 Sitra published food scenarios in their Ruokamuutos 2030 report (Nieminen-Sundell 2008). What is the reason for having so many parallel projects related to food? How could we increase the level of cooperation and collaboration within future research in Finland?

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FUTUS6 FUTURES RESEARCH METHODS IN PRACTICE

The FUTUS6 Futures Research Methods in Practice (6 cr) is an optional advanced course in the Master's Degree Programme in Futures Studies. It expands on the theoretical understanding of futures studies research methods by offering a hands-on approach to the actual research process. In the course, students practice conducting a scenario study by using one of selected key methods (Dis-aggregative Delphi method, Causal Layered Analysis, or the Futures Table method) in futures studies. They will learn to gather and analyze data in order to form alternative scenarios of the future of a given topic. The aim of the course is to provide students with capabilities needed to use research methods independently, seek out relevant research and background data, and formulate research questions. In addition, they will learn to report the results of their research in an academic format. All in all, the course aspires to equip the students with both the skills and the confidence to proceed to the final phase of their studies, an independent research culminating in the Master's thesis.

The course is arranged as an intensive two-day workshop, during which the students perform all the critical research phases from gathering the data to its analysis. Prior to the contact phase, students prepare a desk study on their selected method. During the intensive two days, students work in groups. For methods requiring data gathering (the Delphi and CLA), students use their peers from other groups as informants. At the end of the intensive period, students present their research and findings in a mini-conference, arranged for the whole course. As learning to use the methods requires active hands-on advice, the responsible teacher is joined by two co-instructors to enable intensive work during the short period available.

Responsible teacher: **Sofi Kurki**, co-instructors: **Matti Minkkinen** and **Petri Tapio.**

The research report written by **Sakari Nisula, Risto Sivonen, Jarno Tuominen** and **Sofia Zavialova** is a good example of the kinds of interesting results such condensed efforts can produce. In the 2016 course the general theme for all the groups was to explore the futures of migration, a topic that had become acute in the previous year as Europe needed to come to terms with a large immigration movement following the unrest in the Middle East. Nisula, Sivunen, Tuominen and Zavialova in their work took the opportunity to employ the Dis-aggregative Delphi method for exploring the consequences of immigration for national political landscapes in the Nordic countries, especially zooming in on its potential polarizing effects. With the timespan reaching to 2030 the students formulated statements about possible futures related to the key issues affecting political polarization: the development of immigration, share of refugees, amount of support for the far Left and the far Right, changes in societal xenophobia, and changes in societal solidarity. With course participants as the Delphi panelists, responses to the questionnaire were statistically clustered for making scenarios for the year 2030. The study shows prowess in contextualizing and motivating the study, and creativeness in formulating scenarios based on the statistical clusters that resulted from the panelists' responses. The scenarios offer four different, but possible views to the future, so providing tools for systematic evaluation of the complex relations between immigration and extreme political movements. The students also were able to critically assess their research process, and the suitability of the method for their topic. For the aims of the course, this kind of reflection is even more valuable than the results obtained by employing the method.

Impact of Immigration on Political Polarization – Nordic Countries 2030

Nisula Sakari, Sivonen Risto, Tuominen Jarno & Zavialova Sofia
University of Turku, Turku School of Economics, Futures Studies

Abstract

The aim of this research is twofold. First, to investigate the effects of immigration into the Nordic countries on political polarization. The topic of immigration and political polarization was chosen due to its relevance. Participant views on the following ques-tions were analyzed: Development of immigration, share of refugees, amount of support for the far Left and the far Right, changes in societal xenophobia, and changes in socie-tal solidarity. Target year for the scenarios was chosen to be 2030, in order for the analysis period to contain four parliamentary elections in each of the Nordic countries. Second, this research question was used as an opportunity to learn a specific Futures Studies method: The disaggregative Delphi. Disaggregative Delphi is considered to be especially useful in analysing complex situations, where consensus is either unlikely or not preferred. In creating the scenarios, an expert panel consisting of 14 participants was queried. The questions in the query probed both probable and preferable futures and were analyzed using hierarchical cluster analysis. Based on these results and the corresponding qualitative answers, four scenarios were constructed. Their titles reflect the characteristics of each cluster, and they are: Closed border polarization; Soldiers of Odin 2.0; Death of Extremes; and Far left Utopia.

1. Introduction

The aim of this paper is to examine the Delphi method, a central research method used in Futures Studies. More specifically, the focus is on its specific application called dis-aggregative Delphi. The disaggregative Delphi process described in this paper took place during a two-day intensive course "Futures Studies methods in Practice (FU-TUS6)" in Turku, late May 2016. The task was to conduct a Delphi analysis on the fu-ture of migration, and it was up to the research group to decide the specific area and time span for the study. This mini-research introduced the research group to typical pit-falls and problems in using the method, as well as allowed exploration of the various opportunities that can be encountered when delivering a Delphi study. Before going deeper into the process, it is justifiable to clarify the method to a certain degree.

1.1 Disaggregative Delphi method

Delphi is a research method that utilizes both qualitative and quantitative data. At the core of the method an expert panel is asked to fill out questionnaires and give answers based on their knowledge and opinion. The method is therefore about experts' opinions on the issue considered. Linstone and Turoff (2002) give the following definition for the method: "Delphi may be characterized as a method for structuring a group communica-tion process, so that the process is effective in allowing a group of

individuals, as a whole, to deal with a complex problem" (Linstone & Turoff 2002, p. 3). The disaggregative Delphi used in this study is a method, where quantitative key variables from Del-phi panel are clustered and alternative futures images are explored (Tapio et al. 2011). According to Tapio (2002, 98) "the method presented here provides a good tool for the critical phase of scenario building, where the key characteristics of the scenarios are formed."

1.2 Immigration and its political consequences

The topic of immigration is currently relevant, as the amount of immigration to Europe by sea increased to over one million in 2015 according to The UN Refugee Agency (2015). As a result, there has been increased media attention on the challenges that countries face due to immigration (CNN 2015), the rise of far Right, and increased xenophobia (The New York Times 2016; The Economist 2015).

Immigration is especially relevant as it has both political causes and repercussions. Green-Pedersen and Korgstrup (2008) have compared the differing reactions in political climate to immigration in two Nordic countries, Denmark and Sweden. They argue that the main reason that explains why the right wing parties have not been previously able to affect the public policy in Sweden, as they have in Denmark, is due to the differences in party competition. In Sweden, right wing parties have avoided raising the issue as this would have led to conflict with the center-right and liberal parties, isolating effec-tively them from positions of political power.[1] In Denmark, the right wing parties have been large enough to be able to reach government without the major center-right party, the Social Liberals. This has allowed them to affect public policy on immigration and law in a more ideological manner than their Swedish counterparts. (Green-Pedersen & Korsgstrup 2008). A larger analysis of ten countries over nine years (1996–2010), how-ever, reveals that Denmark has been somewhat of a special case, as usually the far right wing parties have had relatively little effect on the actual policy, due to their inability to adapt to the public office because of to their organisational weakness (Akkerman 2012).

Similar results on the relatively low effect of the far on actual immigration policy was found by Alonso and Claro de Fonseca (2011) and Schain (2006) in the case of France. Rydgren (2004) argues that another important factor is the background of the party. The Danish People's Party, for example, has its roots in the traditional populist movements, instead of, for example, the extreme Right or national socialist movements. This al-lowed them to carve a political niche large enough to inhabit a populist one-issue party over the elections.

Similar politicization of the immigration issue has subsequently also been apparent in Norway (Progressive Party), Iceland (Progressive Party) and Finland (the Finns Party). (Bergmann 2015). Voter realignment on the immigration issue has lead to increased support for anti-immigration parties, which in turn affects the contents, views and struc-ture of the whole political system (Schain 2006). Therefore, even if the far Right is not able to directly affect immigration policy, it might have a more widespread effect on altering the contents of public discussion and atmosphere. After a careful analysis, Wid-feldt (2015) argues that the immigration issue in Sweden has reached a momentum, where it can disrupt the main political blocs, possibly the whole political system. Fur-thermore, on a population level

[1] This analysis has been conducted in 2008, and does not account for either the Sverige demokrater, who have gained political support as a populist one-issue party on immigration, nor the changes in immigration policy in 2015 following the Syrian conflict.

exclusive immigration policy appears to increase anti-immigration and far Right views (Baur, Green & Helbling 2015). Based on these find-ings it can be argued that immigration plays a central role in political polarization, and it will become increasingly central in the Nordic countries.

1.3 Purpose of study and research question

The purpose of the study was to provide futures scenarios about the impact of immigra-tion on the political atmosphere in the Nordic countries. The motivation behind the study was to explore the differing interests of the extreme political left and right wing in the future. The time span was selected to be long enough, until 2030, to cover the time period of four parliamentary elections in each of the Nordic countries. The research question of the study was: What is the impact of immigration on political polarization in the Nordic Countries by 2030?

2. Data Gathering and Data Analysis Methods

Typically, the Delphi process includes the selection of expert panelists with the aid of, for example, an expert matrix. As this study was conducted during a two-day intensive course Futures Research Methods in Practice, the experts were preselected to be the participants attending the course and thus an expert selection procedure was not re-quired. Our sample (N=14) consisted of both students (n=11) and staff (n=3) participat-ing of the course. Based on a group discussion and the use of futures wheel method, a questionnaire was formulated by utilizing the eDelfoi tool available online (eDelfoi.fi 2016).

Due to practical concerns and limitations, the study differed somewhat from a tradi-tional Delphi. It was conducted in the form of a mini-Delphi, and thus only contained one round of answers, instead of the minimum of two rounds used in traditional Delphi studies. The questionnaire consisted of both quantitative and qualitative questions. The form of the questionnaire was as follows. First, both probable and preferable estimates of immigration to Nordic countries were queried with a modifiable timeline item. Data was gathered for years 2020, 2025, and 2030, but only the last data point was entered into the analyses, as only this time point was relevant for the research question. The historical data used as a baseline timescale of immigration change was taken from the Swedish national statistics (Statistics Sweden, 2016) and explicitly assumed to be repre-sentative of the situational change in the Nordic Countries in general. It should be un-derscored that while this baseline data was used as an illustrative exemplar, actual data on differences in immigration between Nordic countries appear to follow the trend (Pet-tersen & Østby, 2013)[2]. Second, 7-point Likert-scale questions were formulated to ad-dress both preferable and probable predictions on the following questions in 2030: The share of refugees in total immigration; the amount of support for far Left political movements; the amount support for the far Right political movement; changes in socie-tal xenophobia; and changes in societal solidarity. Finally, a question on personal views on immigration was asked. This was treated as a background explanatory variable, and was not used in the scenario formation per se. In addition, each of the preceding questionnaire items was followed by an open-ended question, asking for the participants to provide the rationale behind their answer.

[2] Similarity between Nordic countries was calculated by comparing the absolute numbers of immigration from Pettersen & Østby (2013) with demographic statistics from Norway, Denmark and Sweden.

Acquired data was analysed using Statistical Package for the Social Sciences version 23 for Windows (SPSS 23; IBM) and Microsoft Excel (Microsoft Office Professional Plus 2013, Microsoft). Scenarios were formulated by first transforming the questions into seven-point scales, ranging from -3 to +3, and subsequently cluster analysed. For the time scale question, where the participant estimated the future development of im-migration without a fixed setting, the transformation was done by adjusting the scale of each time point to correspond to the 7-point scale, using the remainder of reported minimum and maximum values as respective benchmarks. Thus, the smallest value at any time point was given the value -3 and the highest +3, with the remaining values falling somewhere in between. Cluster analysis was performed in SPSS 23, using hier-archical cluster analysis and Ward's minimum variance method (i.e. Ward's method). Ward's method is an iterative way of clustering hierarchical groups based on their simi-larity in specified characteristics (Ward 1963). The range of clusters was pre-set be-tween 2 and 7 with squared Euclidian distance as the interval measure. The dendrogram thus produced was used to separate four differing scenarios. Finally, a representative graph based on the means and standard deviations from each scenario was calculated in Excel.

Due to technical difficulties, the qualitative data were not available during the formu-lation of the scenarios, but were later grouped to the corresponding scenarios. In some cases, such grouping was not directly possible, as the same question had contained the rationale for both preferable and probable future states of a single participant. In such instances, the answers were individually content analysed, and grouped accordingly. When the grouping into either probable or preferred state was not clear by the context, the answers were left out of the scenarios.

3. Results

The questionnaire provided answers from 14 participants for both probable and prefer-able future states. Thus, a total of 28 datasets were entered into the analyses with 6 questions each. Further, each participant had provided background information and qualitative rationale for their answers. These were used as explanatory background in-formation in furnishing the scenarios.

The cluster analysis was queried for both dendrogram and an icicle-graph (Figures 1a and 1b, respectively). After the analysis, in line with traditional standards of scenario formation (e.g. Bradfield, Wright, Burt, Cairns & Van Der Hejden, 2005), the amount of scenarios was selected to be four. Thus, the corresponding cut point for cluster grouping is indicated by the red line in Figure 1a.

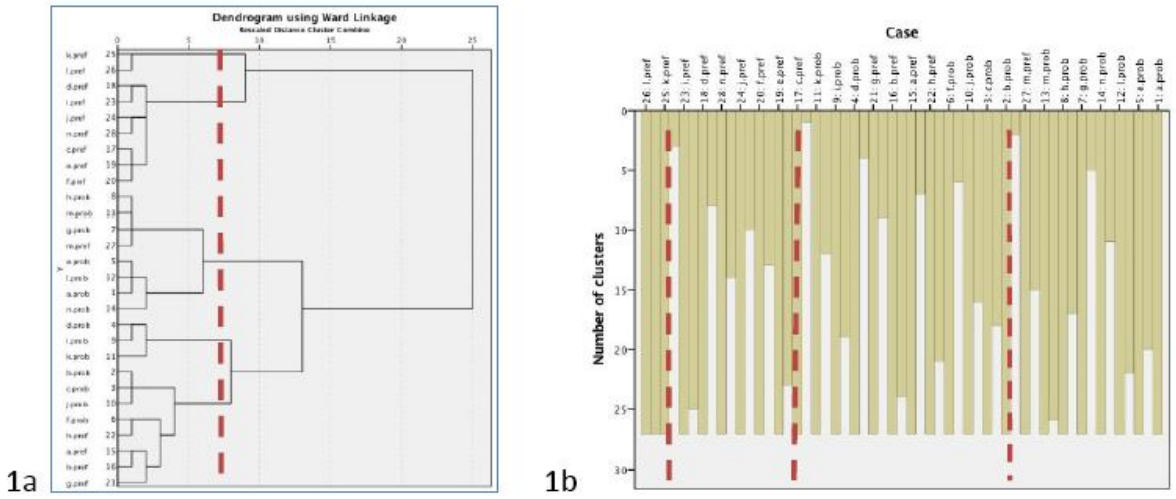

Figure 1. *Formation of clusters indicated by dendrogram (1a) and icicle graphs (1b). Red lines indicate cluster cut points.*

Following the disaggregative Delphi method (e.g. Tapio, 2002), the cluster analysis results were used as the template for our scenarios. The mean and standard deviations of the answers categorized by clusters are presented in Table 1, and further illustrated in Figure 2. The qualitative answers were analyzed to provide depth for the scenarios. The scenarios were subsequently named based on their answer characteristics.

Table 1. *Means and standard deviations of specific answers categorized by clusters. All data transformed to receive values between -3 to +3.*

Cluster	*n*	*Development of immigration to Nordic countries 2030* *M (SD)*	*Percentage of refugees of total immigration* *M (SD)*	*Popularity of extreme Left in Nordic countries due to immigration* *M (SD)*	*Popularity of extreme Right in Nordic countries due to immigration* *M (SD)*	*Change in amount of xenophobia in Nordic countries by 2030* *M (SD)*	*Change in amount of solidarity in Nordic countries by 2030* *M (SD)*
C1	n=8	-1.6 (1.12)	-0.1 (0.95)	0.9 (0.78)	1.3 (1.39)	0.9 (0.93)	1.0 (0.50)
C2	n=11	0.7 (1.42)	-0.6 (1.30)	-1.1 (1.00)	0.5 (1.08)	-0.6 (1.30)	0.8 (1.03)
C3	n=7	-1.2 (0.58)	-1.1 (0.99)	-0.1 (0.99)	-2.4 (0.49)	-2.1 (0.83)	1.3 (1.03)
C4	n=2	2.6 (0.51)	-1.0 (0.00)	2.5 (0.50)	-3.0 (0.00)	-3.0 (0.00)	3.0 (0.00)

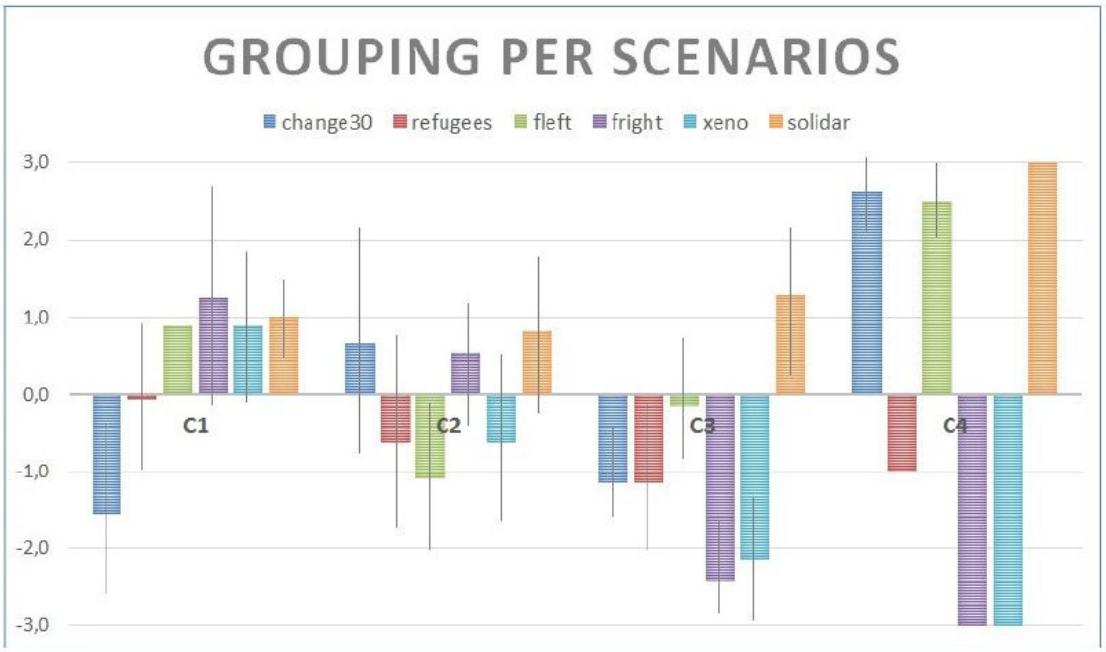

Figure 2. *Hierarchical cluster analysis results for four main clusters, indicating the mean and standard deviations for each question.*

Terms:
change30 = changes in amount of immigration by 2030,
refugees = share of refugees of total im-migration,
fleft = support for far Left politics,
fright = support for far Right politics,
xeno = amount of xeno-phobia,
solidar = amount of societal solidarity.

Each of the scenarios is described next briefly in the light of the findings. In addi-tionn, each scenario is provided with a brief narrative to describe it in the light of the findings. As per the analysis, the scenarios C1 and C2 are the most probable and the scenario C3 the most preferable.

3.1 C1: Closed Border Polarization

In this scenario, the level of immigration is seen to decrease significantly and the num-ber of refugees decrease slightly. Polarization springs from the increase of both ex-tremes - far Right and far Left. The counterforces, xenofobia and solidarity, will both increase.

By 2030, immigration in the north of Europe has decreased significantly due to the fact that immigration policies are under strict governmental control and are totally adjusted to the country's needs such as demand in younger labour force due to aging population problems. Therefore, for refugees looking for asylum there is not much hope to settle their lives in the north and their number is conse-quently going down.

On the political scene, polarization springs from increase of both extremes - far Right and far Left wings. Due to the rising immigration and rising popularity of far Left parties, xenophobic ideas become widely spread. People get the impression that immigration challenges their usual habits or that immi-grants get a preferential treatment. These images are promoted intensively by the extreme right wing that is not giving a realistic view of what is happening, instead provid-ing people with superficial an-swers. Education system is yet to adjust ot the new situation, which does not help to handle increasing multiculturalism. Paradoxically, society still tends to live in a peaceful harmony where everyone will get equal access to the goods and the idea of solidarity is still of a high value.

3.2 C2: Soldiers of Odin 2.0

Moderate increase in immigration will lead to moderate increase in far Right. However, xenophobia will decrease and solidarity increase. Sons of Odin show a new approach to immigration - solidarity. There is no increased polarization, because of the decrease of far Left.

In 2030, Northern Europe remains a popular destination for immigrants. Nordic countries try to attract more immigrants in order to solve demographic problems and to fulfil demands on the labour market, especially in the healthcare services. However, the number of refugees has dropped due to the quieter international situation.

Moderate increase in immigration has led to corresponding increase in the popularity of the far Right and to a decreased popularity of the far Left. Far Left has lost their major support; therefore, po-litical attitudes among citizens are not significantly polarized.

However, xenophobic beliefs started losing their popularity and ideas of soli-darity and empathy are spreading in the society. Even such an organization as «Soldiers of Odin» that takes its roots from being an anti-immigrant movement, has changed the main course of their activities by demonstrating more supportive attitudes towards immigrants in the region.

3.3 C3: Death of Extremes

There is a significant decrease of immigration, there is no foothold for extremists, and people are faced as equals. Support of far Right and Left is significantly down and soli-darity flourishes.

By 2030, the situation in the north of Europe has changed considerably. Immigra-tion rates have decreased with great speed without leaving any foothold for ex-tremists to gain support. All people are therefore treated equally. Reason to the reducing number of immigrants lies in the stabilizing political and economic situation outside of the EU, which creates the demand of skilled and educated labour in the Middle East attracting people to move back to their origin coun-tries.

Consequently, the support of extreme parties rapidly diminishing, while feelings of solidarity and peacefulness are flourishing. The heterogeneity of values has increased, and different cultures have been going through a process of mixing successfully. This has, however, also increased uncertainty and sense of insecurity.

3.4 C4: Far Left Utopia

Values of far Left are getting foothold. Even though immigration has increased signifi-cantly, so has solidarity. Polarization gets low values, along with the decrease of far Right and xenophobia.

In the conditions of significantly increasing immigration rates, values of the far Left are getting a foothold. Political polarization has watered down along with increasing level of solidarity among people and decreasing popularity of Far Right and xenophobic beliefs.

The interconnectedness of the whole system has revealed itself and immigrants have become more common. Immigration is mostly work-based, and global political de-escalation has decreased significantly decreased the amount of refugees.

4. Discussion

In general, the disaggregate Delphi provides a powerful method for pointing out most relevant differences within the panel. This provides a fruitful starting point to analysis on the expert opinion in comparison with the more traditional Delphi. The traditional Delphi would have forced the outcome to one mean or average value set instead of the focus on similarities and differences of found clusters. As noted also by others (Tapio, 2002), this was found to be especially useful as a platform for scenario analysis.

4.1 Limitations and future studies

Quite like with any research method, there are best practices that can differ from re-searcher to another. An example of such here was the scaling of the answers in the ques-tionnaire. As per one of the instructors, it is necessary to build such questions that best serve the research interest. From this perspective, the questionnaire can be made easy to comprehend or built the motivation to provide credible information. Thus the question-naire was used for experimenting different alternatives to collect data.

For example, a line graph that the experts in the panel were able to adjust was considered better than a seven-step Likert-scale, because it allowed the respondents reflect freely how the change will appear. From the perspective of the other of the instructors this was not rec-ommendable, however, since the reply as it was built provided more than one answer per question (thus getting more weight in comparison with answers to other questions), and it is not directly comparable with the other answers. The choice was not recom-mendable, because the analysis will become time consuming. Taking the time limit for this study, similar scale for each answer would have been more economical. Where dif-ferent scale provides more reliable answers, handling data should be part of the research design to avoid surprises during the analysis. During this study, a serious amount of time was put to creating common scale to all answers.

During the progress of this research, some especially critical stages were revealed. First, adequate planning of the questionnaire is essential to achieve representative re-sults. Understanding the practice of hierarchical cluster analysis allows for creating the questions in such a way that they do not unevenly skew the clusters. It, further, makes it easier to draft answers that provide results in a format that is commensurable with other questions. However, this does not mean question compatibility or straightforwardness should take priority over question relevance. Second, the selection of the expert panel is of course essential, yet easy to neglect. The disaggregative Delphi, just as any other expert or meta-method (such as meta-analyses), is just as good as the data analyzed. Elsewhere this has been titled the GIGO-principle, standing for garbage in – garbage out, which is another way of stating that conclusions can only be as good as the prem-ises they are based on (see e.g. Reuland 2000). During this study it became clear that especially a method like disaggregative Delphi, which emphasizes disagreement and discussion over consensus, thrives on a heterogeneous expert panel. This would likely lead to more distinct scenarios, providing alternative platforms for, for example, back-casting or future paths' exercises. Due to the one-round format of the current research the differences between aggregative and disaggregative Delphi did not surface.

The small sample size and the practical limitations in drafting the questionnaire are a possible explanation for the large standard deviations of answers within clusters. The topic is of great relevance, and future studies should map in detail the possible paths to different scenarios, for example by using the backcasting methodology. Further, to in-crease the heterogeneity of the results, a so-called Black Swan scenario could be con-structed by analysing the blind spots revealed by the answers. In this case for example such a case would include a major increase in proportion of refugees to immigrants, and a decrease in societal solidarity. Due to practical limitations, such as report length, such analysis was not conducted here.

4.2 Conclusions

In this study the disaggregative Delphi method was used to craft futures scenarios on the impact of immigration on political polarization in the Nordic countries in 2030. Based on the answers from an expert panel four different scenarios were distinguished: Closed border polarization; Soldiers of Odin 2.0; Death of Extremes; and Far Left Uto-pia. The aim of these scenarios is to provide images for the future to aid in understand-ing the complicated interaction between immigration and extreme political movements. The generalizability of this research is, however, limited. This is due to the small sam-ple size, pragmatically decided expert panel and some suboptimal solutions in question-naire formulation. Finally, this exercise has provided excellent and interesting practice in a specific Futures Research method.

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SUSTAINABLE DEVELOPMENT STUDIES (KEKO)

KEKO9001 Implementing the Principles of Sustainable Development (10 cr)

This course aims at the development of collective expertise. To achieve "development that meets the needs of the present without compromising the ability of future generations to meet their own needs" (Our Common Future, 1987), people must agree on important priorities. This is a challenge, as both the aims and the means to pursue them change depending on the spatial scale, the time perspective – and depending on whom you ask. To get experience of such dialogue, students work in multi-disciplinary teams. Each team gets one theme that they study for the whole year. In 2015–16, the themes were carbon-neutral city, paper industry, pets, and 3D printing. Each team writes four papers: ecological, social, economic and cultural sustainability analysis of the topic. For each paper, the team needs to self-organize, agree on a more specific question or a problem, define what they mean with sustainability in this context, divide and carry out research and writing tasks, and to integrate their work into a coherent whole, all within a month.

The social sustainability papers were evaluated by **Maria Höyssä**, whereas the cultural sustainability papers were evaluated by **Katriina Siivonen**. This overview is written by the responsible teacher Maria Höyssä.

Of the 16 papers produced by the KEKO teams, the next pages feature the social sustainability analysis of the Pets team: **Maria Hughes, Merja Lang, Eero Majatie, Maija Norvasto** and **Emmi Simonen** (written in Finnish) and the cultural sustainability analysis of the 3D printing team: **Maria Tuomi, Satu Tuittila, Anna Rantasuo, Ramona Pulli, Kristiina Paju, Hoa Thi Ngoc Nguye** and **Asser Junnila** (written in English).

The "Pets" excelled in identifying and addressing an actual academic research gap. They in fact boldly challenge the very notion of social sustainability from the perspective of animals. While the different parts of the paper approach the topic from various angles, they are all designed to point at the same conclusions. Nothing stands out as deviating from the red thread. As a small development suggestion, the approach or method of the underlying analysis could have been better explained. The 3D printing team, in turn, successfully found a way to apply a cultural perspective on a theme where it is very challenging, as publications mostly are very technological. They successfully switch between theory-driven discussion of sustainable consumption and the properties of 3D printing, concluding with the ways in which 3D printing could support sustainable consumption culture. Their rich analysis could have been even further deepened by paying more attention to how to use analytic vs. normative texts as sources, and whether these texts have a scientific reference system or not.

Both of these teams have developed their knowledge integration to the degree that is not obvious for the reader of the paper where the author changes. All the four KEKO teams managed to provide some amazingly inspired in-depth studies in 2015–16, but these two papers stood out also in their brevity, as they were able to keep the stated page limit, 20–30 pages. To produce coherent and outcomes, let alone such focused ones, is not possible in teams of many members with different backgrounds unless the authors manage to develop a truly shared understanding of the research problem, and kill as many "darlings" as they keep. Therefore, what you see here is actually demonstration of a much-needed sustainability skill of which all KEKO teams have now plenty of practice: under constant time pressure and despite the differences in their world views, these people who did not know each other beforehand have shown their ability to both agree on problems and jointly solve them.

Lemmikit ja sosiaalinen kestävyys – uudenlaisia käsitteellistyksiä hahmottelemassa

Maria Hughes[a], Merja Lang[b], Eero Majatie[c], Maija Norvasto[d] & Emmi Simonen[e]

[a)] University of Turku, Mathematics and Natural Sciences, Biology
[b)] University of Turku, Turku School of Economics, Futures Studies
[c)] University of Turku, Faculty of Social Sciences, Contemporary History
[d)] University of Turku, Faculty of Humanities, Comparative Literature
[e)] University of Turku, Faculty of Law, Law

1. Johdanto

Kestävä kehitys terminä mainittiin ensimmäisen kerran vuonna 1987 Brundtlandin komission raportissa, jossa se määriteltiin "kehitykseksi, joka ottaa huomioon nykyisten sukupolvien tarpeet vaarantamatta seuraavien sukupolvien mahdollisuuksia täyttää tarpeitaan".[1]

Vuoden 1987 jälkeen määritelmiä on luotu lisää ja kehitys on myös jaettu kolmeen ulottuvuuteen, joista tässä raportissa käsitellään yhtä, sosiaalista kestävyyttä. Sitä pidetään monien tahojen mukaan kestävän kehityksen ulottuvuuksista abstrakteimpana ja vaikeimmin määriteltävänä. Yksinkertaistettuna sosiaalinen kestävyys nähdään kehityksenä, joka mahdollistaa yhteisöjen hyvinvoinnin lisääntymisen ja yksilöiden henkisen ja fyysisen hyvinvoinnin turvaamisen.

Yhteistä sosiaalisen kestävyyden määritelmille on niiden ihmiskeskeisyys. Eläimet on perinteisesti sisällytetty sosiaalisesta kestävyydestä keskusteltaessa ihmisen hyvinvointiin vaikuttavina tekijöinä. Vähemmän on kuitenkin tarkasteltu sitä, mikä on eläimen asema ihmisen muodostamassa yhteiskunnassa ja onko ihmiskunnan kestävä kehitys myös keskuudessamme elävien eläinten kannalta kestävää. Ihmiskeskeisyyttä on alettu kyseenalaistaa yhä enemmän ja enemmän ja samalla pohditaan, kuinka tiukan ihmisten (human) ja ei-ihmisten (non-human) välille vedetyn rajan tulisi olla hyvinvointia tavoitellessa.

Sosiologi Hillary Tovey on havainnollistanut eläinkysymysten puuttumista sosiologisista teksteistä tuomalla esiin sen, että niiden antaman kuvan perusteella on kuin yhteiskunnassa ei olisi niin ei-inhimillisiä kuin inhimillisiäkin eläimiä.[2] Tässä tutkielmassa käytämme selkeyden vuoksi pääsääntöisesti termejä "ihminen" ja "eläin" merkitsemään inhimillistä ja ei-inhimillistä eläintä, joihin englanninkielisissä teksteissä viitataan usein termeillä "humans" ja "non-humans" tai "human animal" ja "non-human animal".

Ihminen on luonut yhteiskuntarakenteen, jota ohjaavat sopimukset ja normit. Yhteiskunnan sisällä elävä yksilö – lajista riippumatta – joutuu elämään näiden normien määrittämissä puitteissa. Tässä raportissa tarkastelemme kaikkien eläinten ja erityisesti lemmikkien asemaa ihmisten keskuudessa. Filosofisen ja oikeustieteellisen näkökulman kautta pyrimme hahmottelemaan, millainen asema eläimillä tulisi yhteiskunnassa olla, jotta niiden hyvinvointi olisi taattua ja lajirajat ylittävä sosiaalisesti kestävä

[1] "Development which meets the needs of current generations without compromising the ability of future generation to meet their own needs." Brundtland ja muut 1987.
[2] "To read most sociological texts, one might never know that society is populated by non-human as well as human animals." Tovey 2003.

kehitys toteutuisi. Koska lemmikin aseman kestävyyttä ei voida käsitellä irrallaan siitä, millainen asema eläimillä on yhteiskunnassa ylipäätään, peilaamme ihmisen suhdetta muihin keskuudessaan eläviin lajeihin ja tarkastelemme sitä, miltä sosiaalinen kestävyys näyttää lemmikkiyden kannalta. Pohdintamme keskiössä ovat seuraavat kysymykset: Onko lemmikin pitäminen sosiaalisesti kestävää ihmisen ja eläimen näkökulmasta? Mikä on eläimen asema yhteiskunnassa? Millä tavalla yleensä ihmisen näkökulmasta käsitetty sosiaalisen kestävyyden käsite soveltuu eläinten sosiaalisen kestävyyden arviointiin?

Ensimmäisessä käsittelyluvussa perehdytään syvemmin sosiaalisesti kestävän kehityksen perinteiseen määrittelyyn sekä siihen, miten lemmikit vaikuttavat ihmisen sosiaalisesti kestävään kehitykseen. Käsittelemme myös lemmikkien asemaa näissä ihmisen ja eläimen välisissä sosiaalisissa suhteissa keskittyen erityisesti tekijöihin, jotka rajoittavat lemmikkien sosiaalisesti kestävää elämää. Luku luo pohjaa kolmannen luvun moraalifilosofiselle pohdinnalle eläimen asemasta yhteiskunnassa sekä siitä, miten eläin on pakotettu ihmisen luoman yhteiskunnan ja sosiaalisten suhteiden muottiin. Neljännessä luvussa tarkastellaan sitä, miten eläin nähdään suomalaisessa yhteiskunnassa lainsäädännön näkökulmasta sekä hahmotellaan mahdollisia parannuksia eläinten sosiaalisesti kestävämmän aseman saavuttamiseksi. Johtopäätöksissä määrittelemme raporttiimme pohjautuen, mitä eläinten kannalta sosiaalinen kestävyys voisi olla ja miten eläinten kannalta sosiaalisesti kestävämpää tulevaisuutta voisi turvata.

Tutkimuskysymyksemme ovat ajankohtaisia ja perusteltuja, sillä eläimet ja niiden asema yhteiskunnassa ovat konkreettisia aiheita, joita ei kuitenkaan ole kovin laajasti käsitelty sosiaalisen kestävyyden kontekstissa nimenomaan tavalla, joka asettaisi eläimet pohdinnan keskiöön itsearvoisiksi toimijoiksi. Kuitenkin aihe on konkreettinen ja polttava, sillä paitsi suomalaisen yhteiskunnan kontekstissa (johon tässä työssä keskitymme erityisesti lainsäädännön osalta) myös maailmanlaajuisesti käy jatkuvasti ilmi, että nykyisellään eläinten asema suhteessa ihmisten toimintaan on monelta osin kestämätön. Tässä tutkielmassa pyrimmekin arvioimaan kriittisesti koko sosiaalisen kestävyyden konseptia ihmis–eläinsuhteiden (*human–non-human relations*) kannalta. Metodologisesti lähestymme aihetta käsitteellisen tarkastelun kautta.

2. Sosiaalinen kestävyys ja lemmikkiys

Tässä luvussa tarkastelemme sosiaalisen kestävyyden käsitettä, sen perustaa, muuttuvaa määritelmää, sekä sitä, missä määrin se on relevantti ja pystyvä käsittelemään eläinten asemaa ja hahmottelemaan eläinten kannalta kestävää tulevaisuutta.

Hahmottelemme paitsi eläinten merkitystä ihmisen kannalta sosiaalisesti kestävässä kehityksessä, myös sitä, millä tavalla sosiaalista kestävyyttä voitaisiin määrittää vähemmän ihmiskeskeisesti. Viimeiseksi käsittelemme niitä tekijöitä, jotka rajoittavat lemmikin sosiaalisesti kestävää elämää ihmisen kanssa.

2.1 Lemmikit ihmisten sosiaalisen kestävyyden kannalta

Vuonna 2002 järjestetty Johannesburgin kestävän kehityksen kokous nosti voimakkaasti esille sosiaalisen kestävyyden merkityksen taloudellisen ja ekologisen kestävyyden rinnalla. Tuolloin suuri kysymys oli, kuinka globalisaatio saadaan palvelemaan köyhyyden vähentämistä. Kokouksen tuloksena syntynyt Johannesburgin julistus listasi kestävän kehityksen tavoitteeksi “humaanin, tasa-arvoisen ja välittävän

maailmanyhteisön rakentamisen, joka tunnustaa ihmisarvoisen elämän tarpeen kaikille".[3] Erityisesti tavoitteena oli kroonisen nälän ja aliravitsemuksen, miehitysten, aseellisten konfliktien, huumeiden väärinkäytön ja salakuljetuksen, järjestäytyneen rikollisuuden, korruption, luonnonkatastrofien, ihmiskaupan, suvaitsemattomuuden ja rasismin sekä sairauksien (erityisesti HIV:n/aidsin, malarian ja tuberkuloosin) poistaminen.[4]

Siinä missä YK-järjestelmän tasolla sosiaaliselle kestävyydelle on pystytty neuvottelemaan poliittisia, jaettuja päämääriä, käsite on tutkimuksessa koettu ongelmalliseksi. Sosiologi Magnus Boström pitää käsitettä alati muuttuvana ja kiisteltynä. Hän on kahlannut läpi sosiaalista kestävyyttä käsittelevää tutkimusta ja löytänyt sille lukuisia eri määritelmiä. Sosiaalisen kestävyyden tavoitteiksi hän on löytänyt muun muassa perustarpeiden tyydyttämisen, taloudellisen ja ympäristöllisen tasa-arvon, yhtäläisten oikeuksien toteutumisen, työllisyyden, pääsyn sosiaalisten palveluiden piiriin, mahdollisuuden oppimiseen ja itsensä toteuttamiseen, kansalaisyhteiskunnan ja sosiaalisen pääoman vahvistamisen, turvallisuuden, terveyden, sosiaalisen koheesion, kulttuurisen monimuotoisuuden ja perinteiden vaalimisen, yhteisöllisyyden ja osallisuuden kokemuksen, sosiaalinen tunnustuksen, miellyttävät asuinympäristöt sekä elämänlaadun, onnellisuuden ja hyvinvoinnin.[5]

Huomioon otettavaa on näkemys sosiaalisen kestävyyden subjektista. Sosiaalinen kestävyys mielletään ihmistä koskevaksi olosuhteeksi tai tavoitteeksi: hyvinvoinniksi, terveydeksi ja elämänlaaduksi. Monen länsimaisen lemmikin elintaso on korkeampi kuin köyhien maiden ihmisten elintaso. Sosiaalisen kestävyyden näkökulmasta tämä voidaan nähdä oireena elintasokuilun kärjistymisestä. Lemmikeillä kyllä nähdään rooli hyvinvoinnin, terveyden ja elämänlaadun parantamisessa. Lukuisat tutkimukset osoittavat, kuinka eläimillä on ihmisten fyysistä ja psyykkistä hyvinvointia edistäviä vaikutuksia. Lemmikit tarjoavat seuraa yksinäiselle, sosiaalisen yhteisön harrastajille ja liikuntaa ulkoiluttajille. On jopa havaittu, että koiran ja omistajan katsoessa toisiaan silmiin molempien aivoissa erittyy rakkaushormoninakin tunnettua oksitosiinia. Samaa hormonia erittyy toisiaan silmiin katsovien äitien ja vauvojen aivoissa.[6]

Viime vuosikymmeninä lemmikkien vaikutuksista ihmisen hyvinvointiin on innostuttu monin eri tavoin. Jo lähes 40 vuotta sitten huomattiin, että eläimillä on positiivinen vaikutus vanhuksiin, ja niitä voidaan käyttää myös muistisairaiden aktivoimiseen.[7] Sittemmin eläinten käytölle terapeuttisissa tarkoituksissa on löydetty yhä uusia sovelluksia, ja ilmiölle on kehitetty oma lyhenteensä: AAT (*animal assisted therapy*). Eläimillä on havaittu olevan positiivisia vaikutuksia muun muassa saattohoidossa ja kivunhoidossa, mielenterveysongelmien hoidossa, autismin hoidossa, kehitysvammaisten terapiassa, oppimisvaikeuksien helpottamisessa sekä psykoterapiassa.[8] Lemmikin on todettu edistävän lasten psyykkistä kehitystä ja kykyä empatiaan.[9] Lisäksi erityisesti koirilla on havaittu lasten allergioita ja astmaa estävä vaikutus.[10] Lemmikit alentavat verenpainetta ja verisuonia tukkivien kolesterolin ja triglyseridin

[3] Johannesburgin julistus 2.
[4] Johannesburgin julistus 19.
[5] Boström 2012, 6.
[6] Nagasawa ja muut 2015.
[7] Bustad 1981.
[8] Fine 2010.
[9] McCardle ja muut 2011.
[10] Lappalainen 2010.

tasoa veressä.[11] Lemmikeillä voi olla egatiivisiakin vaikutuksia ihmisen hyvinvointiin, niistä voi esimerkiksi tarttua erilaisia tauteja ja tulehduksia. Lemmikit voivat levittää viruksia, bakteereja, loisia ja sieni-infektioita.[12] Tartunnat on kuitenkin helppo välttää perushygienialla. Sairauksien osalta lemmikeistä voidaan nähdä olevan hyötyä, sillä eläimet myös tunnistavat niitä ja saattavat siten pelastaa ihmisen: koirat voivat haistaa syövän[13], ja pulut tunnistavat syöpäkudoksen ruudulta.[14]

Voidaan siis kiistatta nähdä, että lemmikkieläimistä on ihmisille selvästi hyötyä. Viimeaikaiset tutkimukset eläinten hyötykäytöstä hyvinvoinnin edistämisestä osoittavat, että ihmisen paras ystävä on parempi kuin osattiin odottaakaan. Kuitenkaan siinä, että eläimistä on ihmisille hyötyä, ei ole mitään uutta. Koirat ovat metsästäneet, vahtineet, paimentaneet ja suojelleet ihmisiä kesyyntymisestään saakka. Koiria on koulutettu opastamaan sokeita ja avustamaan liikuntavammaisia, auttamaan poliisia ja tulliviranomaisia sekä kadonneita etsiviä. Kissat ovat pitäneet hiiret kaukana vilja-aitoista ja tuvista. Lemmikit ovat tarjonneet seuraa ihmisille maailman sivu. Tuotantoeläimet ovat olleet ihmisen ravintoa ja vaatettajia. Jos eläimistä onkin hyötyä ihmisille, voidaanko samaa sanoa ihmisistä eläimille? On aika kysyä, onko sellainen maailma, jonka kuvaa Johannesburgissakin maalailtiin, myös eläimille paras mahdollinen maailma.

Sosiaalisen kestävyyden käsitettä on kritisoitu monista eri lähtökohdista. Boström tiivistää kritiikin viiteen kohtaan: käsite on 1) utooppinen ja abstrakti, 2) pinnallinen, subjektiivinen ja ideologiselle manipuloinnille altis, 3) vaikeasti mitattava, 4) nykytilannetta ylläpitävä ja 5) kapitalismiin sidottu.[15] Eläinten näkökulmasta voidaan kuitenkin tämän lisäksi väittää, että sosiaalisen kestävyyden suurin ongelma on sen ihmiskeskeisyys. Utopia ei ota kantaa eläinten asemaan, eläinten hyvinvointia ei edes yritetä sisällyttää mihinkään mittareihin, eläinten aseman parantamiseen liittyvä liikehdintä tapahtuu ainoastaan ruohonjuuritasolla ja monet eläimet nähdään yhtenä tuotantovälineenä muiden joukossa. Kuitenkin eläimet ovat osa yhteiskuntaamme lukuisin eri tavoin. Niiden asemaa sivutaan monissa eri laeissa ja asetuksissa ja ne nähdään osana kulttuuria. Onkin siis tarve yhdistää paremmin sosiaalisen ja ekologisen kestävyyden näkökulmat paitsi ihmisen myös eläimen aseman huomioon ottavalla tavalla.

2.2 Eläimet sosiaalista kestävyyttä määrittämässä?

Eläimet ovat osa yhteiskuntaa ja taloutta – siis sosiaalista todellisuuttamme. Kuitenkin sosiaalitieteellisellä tutkimuksella on ollut suuria haasteita sisällyttää eläimiä osaksi sosiaalisen todellisuuden tutkimusta, sillä sosiaalinen mielletään erityisesti ihmisten ja ihmisyhteisöjen suhteisiin liittyväksi alueeksi. Jotta sosiaalisen kestävyyden käsite kattaisi myös muiden kuin ihmisten hyvinvoinnin, terveyden ja tasa-arvon, tulisi eläimet ottaa osaksi sosiaalisen tarkastelua. Tämän tarkastelun on ottanut haasteekseen muun muassa tutkijat Juha Hiedanpää, Ari Jokinen ja Pekka Jokinen.[16]

Hiedanpää ja muut (2012) tuovat esille, että eläimet ovat osa sosiaalista todellisuutta paitsi objekteina myös subjekteina. He nostavat esille esimerkiksi suden, joka hyökkää lampaan kimppuun. Susi,

[11] Levine ja muut 2013.
[12] Chomel 2014.
[13] Hideto S. ja muut 2011.
[14] Levenson ja muut 2015.
[15] Boström 2012, 7–10.
[16] Hiedanpää ja muut 2012.

joka paitsi saa itselleen saalista, myös ottaa osaa siihen sosiaaliseen todellisuuteen, jota lampaan omistaja on ollut luomassa, ja jossa lammas on omistajansa tuotannontekijä ja omaisuutta. Susi häiritsee tuota todellisuutta ja avaa kysymyksen siitä, missä määrin sutta pitää suojella ja missä määrin siltä saa suojautua. Samalla tavoin sosiaalinen todellisuus määrittyy uudelleen silloin, kun eläinoikeusaktivistit kuvaavat sikalaa tai kun kaupunginosan rakentaminen kariutuu suojellun liito-oravan vuoksi.[17] Hiedanpään ja muiden näkemys eläimistä subjekteina, jotka osallistuvat sosiaalisen todellisuuden määrittelemiseen, tarkoittaa siis viime kädessä sitä, että eläimet osallistuvat ihmisten todellisuuden määrittelemiseen.

Hiedanpää ja muut laajentavat sosiaalisen käsitettä yhdistämällä sitä sosioekologisen systeemin käsitteeseen. Siinä ihminen nähdään osana luontoa, jolloin jako sosiaalisen ja ekologisen välillä näyttäytyy keinotekoisena ja sattumanvaraisena. Siinä missä kulttuurisesti ihminen on nähty luonnosta erillisenä, sosioekologinen näkökulma palauttaa ihmisen osaksi luontoa, eikä jakoa luontoon ja kulttuuriin siis ole. Sosiaalinen on Hiedanpään mukaan tapojen kudos, jonka määrittämiseen ihmiset ja ei-ihmiset osallistuvat – kuten sudet, liito-oravat ja sikalassa olevat siat. Sosiaalinen ei siten ole erillinen yksilöistä, julkisesta sfääristä ja ympäristöstä erottuva alue, vaan se muodostuu ja katoaa sattumanvaraisesti erilaisissa tapoihin ja oikeuskäytäntöön liittyvissä kohtaamisissa.[18]

Kaikista eläimistä juuri lemmikit osallistuvat ihmisten todellisuuteen kenties kaikista eniten. Ne viettävät merkittävän paljon aikaa omistajiensa seurassa, saavat ruokansa silloin, kun se omistajalle sopii ja pääsevät ulkoilemaan silloin, kun omistaja avaa heille oven – jos avaa. Lemmikit ovat sosioekologisesta näkökulmasta mielenkiintoisia, sillä ne eläiminä ikään kuin kuuluvat luontoon, mutta ovat siitä käsitteellisesti irrallaan sisällytettynä ihmisen luomaan todellisuuteen. Lemmikkiys alkaa siitä, että ihminen ottaa eläimen "omakseen". Varsinkin monet koirat ovat jalostuneet tai on jalostettu niin, etteivät ne enää pärjäisi luonnossa ilman ihmistä. Lemmikin ja omistajan suhde on viime kädessä riippuvuussuhde. Lemmikin ottaessaan ihminen lähtökohtaisesti sitoutuu pitämään siitä huolta ja tarjoamaan sille turvaa ja hoivaa. Vaikka lemmikit "parhaimmillaan" mielletään kuin perheenjäseniksi, on niiden asema kuitenkin alisteinen suhteessa ihmiseen.

Ihmisen ja lemmikin suhde ei ole ainoastaan henkilökohtainen ja hetkessä muodostuva. Sillä on myös oma institutionalisoitu muotonsa kirjoitettuna lakiin. Lakiteksti määrittää sitä, kuinka olemme yhteiskuntana päättäneet suhtautua eläimiin yleensä ja lemmikkeihin erityisesti – siis kuinka ihminen määrittää eläimyyden. Hiedanpään ja muiden mukaan eläinten ja ihmisten kohtaamiset määrittävät myös lakien sisältöä ja vaikuttavat erityisesti oikeuskäytäntöihin, mutta eikö heidänkin sosioekologinen näkökulmansa jää hieman suppeaksi? Myös heidän näkökulmassaan eläin kyllä osallistuu, mutta lopulta ihminen päättää, minkälainen arvo tuolle osallistumiselle annetaan. Eläin määrittyy edelleen ihmisen kautta. Ääriesimerkki tästä on lemmikki, joka on nykyisessä oikeusjärjestyksessä määritelty eläinsuojelulainsäädäntöä lukuun ottamatta enemmän tai vähemmän ihmisen omistamaksi esineeksi. (Palaamme tarkastelemaan tätä aihetta tarkemmin luvussa neljä.) Lemmikin esineellistäminen avaa tietä eläimen luvalliselle kärsimykselle. Seuraavassa alaluvussa käydään läpi sitä, millaista haittaa hyvää tahtovakin omistaja voi lemmikilleen aiheuttaa.

[17] Hiedanpää ja muut 2012.
[18] Hiedanpää ja muut 2012.

2.3 Rakastetut ja kärsivät lemmikit

Lemmikkien sosiaalista kestävyyttä tarkasteltaessa niiden omasta näkökulmasta lähtökohdaksi olisi luontevaa ottaa niiden tarpeiden tyydytys. Lienee perusteltua sanoa, että lemmikkejä kohdellaan yleensä hyvin ja ikään kuin perheenjäseninä. Tästä näkökulmasta niiden aseman sosiaalista kestävyyttä ei siis ole mielekästä kyseenalaistaa. Lemmikit ovat todennäköisesti villejä lähisukulaisiaan fyysisesti terveempiä ja niiden keskimääräinen elinikä on korkeampi. Esimerkiksi villiintyneet kissat elävät keskimäärin vain 7,1[19] vuotta, kun taas lemmikkikissan keskimääräinen elinikä on 9,4.[20] Lemmikkien omistajat huolehtivat yleensä niiden terveydestä ja käyttävät niiden hyvinvointiin merkittävästi rahaa. Esimerkiksi vuonna 2014 Yhdysvalloissa lemmikkien eläinlääkärikuluihin käytettiin 15,04 miljardia dollaria.[21] Eläessään ihmisen seurana ja perheenjäsenenä lemmikkiin kohdistetaan valtavasti huolenpitoa ja rakkautta. Voidaan kuitenkin kysyä, elääkö se kuitenkaan ihanteellista elämää ihmisten muodostaman yhteiskunnan puitteissa.

Lemmikkien on havaittu reagoivan stressaaviin tilanteisiin esimerkiksi ruokahaluttomuudella, pakkoliikkeinä muilla fyysisillä oireilla. Koirat voivat myös kärsiä eroahdistuksesta yksin jäädessään.[22] Pakonomaiset lemmikin harjoittamat toiminnot ovat usein merkki stressistä, jonka syy ei tosin aina ole tiedossa.[23] Ne kuitenkin ilmaisevat, että lemmikki ei välttämättä voi aina hyvin, vaikka sen ulkoinen olemus muuta viestisi. Ne myös viittaavat siihen, ettei lemmikin elämä ihmisen perheenjäsenenä ole ehkä eläimen kannalta niin sosiaalisesti kestävää, kuin mitä rakastavat omistajat haluaisivat ehkä ajatella.

Farm Animal Welfare Council määritteli vuonna 1992 eläimen viisi vapautta[24], joiden täyttymisen omistajan tulisi varmistaa, jotta eläin voi hyvin. Niiden mukaan ihmisen kanssa elävällä eläimellä on oikeus:

1. Saada riittävästi hyvälaatuista ravintoa sekä puhdasta vettä.
2. Olla terve ja sairastuessaan saada laadukasta hoitoa.
3. Asuinympäristöön, joka on ympäristötekijöiltään (esimerkiksi lämpötila tai kosteusolot) oikeanlainen.
4. Elää turvallisessa ympäristössä, jossa vangittuna olo ei aiheuta pelkoa tai ylimääräistä stressiä.
5. Toteuttaa lajilleen tyypillistä käyttäytymistä.

Näitä vapauksia on myös käytetty arvioimaan eri eläinlajien sopivuutta lemmikeiksi, sekä sitä, mitä pitäisi ottaa huomioon lemmikin hyvinvointia arvioitaessa.[25] Vapauksista neljä ensimmäistä on vastuullisen lemmikin omistajan näkökulmasta itsestään selviä, mutta mitä on lemmikin lajityypillinen käyttäytymien? Sen ymmärtäminen vaatii eläinlajin biologian ja käyttäytymisen täydellistä tuntemusta. Mitä "eksoottisempi" lemmikki on, sitä vaikeampi on varmistaa, toteutuvatko nämä vapaudet. Lemmikkieläin on aina täysin omistajansa armoilla, ja siksi omistajan velvollisuutena onkin varmistaa riittävä tietämyksensä lajista ja sen tarpeista.

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[19] Levy ja muut 2003.
[20] Kraft, W. 1998.
[21] American Pet Products Association -verkkosivu.
[22] Koirakoulu Vision verkkosivu.
[23] Koirakoulu Vision verkkosivu.
[24] FAWC 1992.
[25] Schuppli ja Fraiser 2000.

Lemmikkipapukaijoja tutkittaessa on havaittu, miten myös lemmikeistään välittävä, mutta liian vähän tietävä omistaja, voi tahtomattaan kohdella lemmikkiään kaltoin. Papukaijat ovat tyypillisesti eläneet vain muutaman sukupolven vangittuina.[26] Niiden ekologiasta ei siis tiedetä aina tarpeeksi, jolloin myöskään ei ole selvää, että edellä listatut vapaudet täyttyisivät.[27] Papukaijojen ruokavalio koostuu tyypillisesti suurelta osin siemenistä, vaikka ei ole selvää onko se niille sopivinta ravintoa.[28] Tietämättömyys lemmikkilintujen sopivasta ruokavaliosta on yleisesti myönnetty ja arvioidaan, että lintujen terveysongelmista jopa 90 % johtuisi vääränlaisesta ravinnosta.[29]

Myös lemmikkilintujen oikeutta lentämiseen, lajityypilliseen käyttäytymiseen, rajoitetaan usein. Joko linnut viettävät aikansa häkeissä tai niiden siipisulkia muokataan niin, että ne menettävät lentokykynsä.[30] Tyypillisen käyttäytymisen rajoittaminen voi aiheuttaa stressioireita kuten ylenmääräistä sulkien nyppimistä.[31] Stressioireiden ilmentyessä myös listan neljäs kohta jää toteutumatta.

Kissat ja koirat ovat eläneet ihmisen seurana jo vuosituhansia. Esimerkiksi sutta ei erään hypoteesin mukaan ole tieten tahtoen kesytetty vaan se on alkanut seurata ihmistä ja kesyyntynyt.[32] Ihmisen ja perinteisten lemmikkieläinten yhteisestä historiasta johtuen on haastavaa sanoa, mikä on koiralle luonnollista käyttäytymistä ja saako se ihmisen seurassa mahdollisuuden lajityypilliseen toimintaan. Koiria esimerkiksi koulutetaan välillä kovallakin kurilla, jotta ne oppisivat toimimaan vaistojaan vastaan kohdatessaan vieraita koiria ja ihmisiä. Ne myös opetetaan pidättämään ja tekemään tarpeensa vain ulos epämiellyttävän sotkun välttämiseksi. Voidaankin todeta, että koira lienee ainoa eläinlaji, jonka tarpeiden tekemisestä päättää ensisijaisesti ihminen.[33]

Koirien koulutuksen vallitsevana suuntauksena on ajatus siitä, että laumaeläimenä koira on tyytyväisin tietäessään laumassa paikkansa, joka on aina ihmisen alapuolella. Näkemys koirasta laumaeläimenä johtuu siitä, että sen lähisukulainen, susi, elää laumassa. Villiintyneiden koirien ryhmiä tarkasteltaessa on kuitenkin havaittu, että ne muodostavat arvohierarkialtaan huomattavasti susia löyhempiä ryhmiä, ja siksi voidaankin pohtia, edistääkö koiran hyvinvointia se, että sille näytetään jatkuvasti kaapin paikka – joskus rajustikin.[34]

Lemmikin oikeus lajityypilliseen hoitoon ja käyttäytymiseen on vaikea varmistaa. Vaikka sen omistaja tietäisi lajista paljon ja pyrkisi varmistamaan kaikin puolin eläinkumppaninsa asianmukaisen kohtelun, on todennäköistä, että eläin ei pääse täysin toteuttamaan tarpeitaan. Lemmikki ei pysty ilmaisemaan tarpeitaan sanallisesti, joten niiden arviointi perustuu aina omistajan subjektiiviseen tarkkailuun sekä mahdollisiin tutkimuksiin kyseisestä lajista. Arviot ovat kuitenkin arvauksia eikä edes omistaja, joka kokee tuntevansa lemmikkinsä erinomaisesti, pysty olemaan täysin varma siitä, miten hänen lemmikkinsä voi.

Äärimmäinen esimerkki lemmikkien huonosta kohtelusta laajalla skaalalla on jalostaminen. Tietoisella jalostamisella on voitu pyrkiä tuottamaan jälkeläisiä, joilla on tietynlainen luonne tai ulkonäkö, tai jotka soveltuvat hyvin jotakin tarkoitusta (kuten metsästystä, seurustelua, paimentamista, pelastamista

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[26] Graham, D. L. 1998.
[27] Engrebetson, M. 2006.
[28] Engrebetson M 2006.
[29] Harrison 1998.
[30] Hesterman ja muut 2001.
[31] Forbes ja Glendell 1999.
[32] Coppinger, R. ja Coppinger, L. 2001.
[33] Van Krekkhov.
[34] Van Kerkhov, 2010.

tai vartioimista) varten. Vaikka jotkin koirarodut ovat vuosisatoja vanhoja, suuri osa koiraroduista on jalostettu viktoriaanisella aikakaudella 1800-luvun aikana.[35] 1800-luvun aikana myös koirien merkitys muuttui länsimaissa – niistä tuli statussymboleita nimenomaan niiden ulkoisten piirteiden ja rotuominaisuuksien vuoksi. Terveys ja esimerkiksi käyttökelpoisuus metsästyksessä jäivät toissijaisiksi kriteereiksi ja koiran tärkeimmäksi käyttötarkoitukseksi tuli olla ihmisen ajanvietettä.[36]

Tämä kehityskulku on tehnyt paljon vahinkoa koiran mahdollisuuksille elää ilman kärsimystä. Monet rodut ovat saaneet alkunsa siten, että jälkeläisiä on tuotettu vain muutamalla yksilöllä, minkä seurauksena suuri osa jonkin rodun populaatiosta voi kantaa yhden yksilön geenien viallisia alleeleja.[37] Näin on luotu tahattomasti otolliset olosuhteet perinnöllisten sairauksien leviämiselle[38], ja monista terveysvaivoista on tullut suorastaan rotuominaisuuksia[39] – esimerkkinä tällaisista ominaisuuksista mainittakoon vaikkapa cavalierkingcharlesinspanielin lyhyeksi ja pyöreäksi jalostetusta päästä aiheutuva erittäin kivulias syringomyelia, jossa pikkuaivot litistävät aivojen selkäydinjatketta ja estävät selkäydinnesteen virtaamisen keskushermostossa.[40] Ihmisten toivomat ja kenneljärjestöjen määrittelemät esteettiset ja muut rotuominaisuudet voivat siis tuottaa sinänsä rakkaalle lemmikille valtavasti kärsimystä.

Koirarotujen kehittäminen on osa koiran evoluutiota, johon ihminen on puuttunut ja pyrkinyt tuottamaan omien mieltymystensä tai tarpeidensa mukaisia lemmikkejä, ja tuloksena on monia rotuja ja koirayksilöitä, jotka kärsivät tästä ajallisesti kauan jatkuneesta prosessista. Tämä on lemmikkien kannalta täysin kestämätöntä ja vaikuttaa myös tuleviin lemmikkisukupolviin – jalostuksen tuottamien perinnöllisten sairauksien vaikutus ja ihmisten halu "harrastaa" tiettyjä rotuja tuottaa uusia lemmikkisukupolvia, jotka todennäköisesti kärsivät samoista vaivoista kuin vanhempansa ja esivanhempansakin, ellei rodunjalostusta hallita ja rajoiteta tehokkaasti.

Vaikka lemmikkien asema usein ihmisen rakastamina ja hyvin hoitamina eläiminä on jossain määrin parempi kuin luonnonvaraisten sukulaistensa, ei terveyden ja hyvän hoidon toteutumisen arvioiminen ole aivan yksinkertaista. Esimerkiksi koirien terveydenhuolto alkaa olla länsimaissa samalla tasolla kuin ihmisten terveydenhuolto[41], mutta toisaalta monet koirien terveysongelmat ovat tavalla tai toisella ihmisen toiminnan seurausta – ainakin, kun kyse on jalostuksesta tai vaikkapa liikalihavuudesta seuranneista vaivoista. Kun lemmikistä on tullut yhä enemmän seuralainen eikä hyödyke esimerkiksi metsästyksessä, sen vaivoista huolehditaan enemmän kuin aiemmin – jos ennen vamman takia hyödyttömäksi käynyt eläin on saatettu lopettaa, nykyään lemmikki pyritään hoitamaan kuntoon.[42] Tältä kannalta muutos ihmisen ja eläimen välisessä sosiaalisessa suhteessa on merkinnyt eläimen aseman paranemista. Lemmikkien terveydenhuollon paraneminen ei kuitenkaan ole tarkoittanut sitä, että lemmikit sairastaisivat vähemmän. Esimerkiksi koirien eliniän pitenemisen myötä on havaittu uusia perinnöllisiä sairauk-

[35] Raevaara 2011, 162.
[36] Raevaara 2011, 172.
[37] Raevaara 2011, 170.
[38] Raevaara 2011, 171.
[39] Raevaara 2011, 169.
[40] Raevaara 2011, 173–174.
[41] Raevaara 2011, 165.
[42] Raevaara 2011, 166.

sia ja lemmikin merkitys seuralaisena on myös lisännyt ihmisen eläimelle aiheuttamia elintasosairauksia, kuten kakkostyypin diabetesta ja nivelongelmia.[43] Ihmisen pitkäaikaisin kumppanieläin koira onkin paradoksaalisesti samaan aikaan sekä kenties parhaiten hoidettu että sairain kotieläimistä.[44]

Sosiaalisesti kestävän lemmikkiyden kannalta moni aspekti ihmisen ja lemmikkien historiassa ja nykypäivässä näyttäytyy ongelmallisena. Haluun pitää lemmikkejä on usein liittynyt halu hallita ja muokata toisia eläviä olentoja ihmisen mieleisiksi. Tästä julmuuden ja hellyyden suhteesta on kirjoittanut esimerkiksi maantieteilijä Yi-Fu Tuan teoksessaan *Dominance and Affection – the Making of Pets* (1984). Tuan toteaa, että vaikka lemmikeistä saatetaan pitää huolta ylellisestikin, niiden tehtävä on kuitenkin olla ihmisten kannalta mahdollisimman miellyttäviä ja ihmisen elämään mukautuvia.[45] Tämän mukavuuden saavuttamiseksi ihmiset pitävät oikeutenaan puuttua lemmikkiensä lajityypilliseen toimintaan ja fyysisiin ominaisuuksiin tavoilla, jotka usein aiheuttavat kärsimystä tai muuten huonontavat lemmikin elämänlaatua.

Ihmisen ja lemmikin välisessä suhteessa lemmikin osa on olla ihmisen hallittavana. Eläimen luonnolliset tarpeet ja käyttäytymistavat, esimerkiksi lisääntyminen, ovat ihmisen säädeltävissä ja käytettävissä. Tuan toteaa, että ihanteellinen lemmikki on ystävällinen, tottelevainen ja aina hallinnassa, ja että tällaisen "tuotteen" luomiseksi ihmisen on paitsi koulutettava lemmikkiyksilönsä, myös hallittava eläinten lisääntymisprosesseja – tosin jälkimmäinen aspekti usein jää näkymättömiin.[46] Koiria on historian saatossa pyritty saamaan lisääntymään tavoilla, joissa on käytetty pakottamista ja väkivaltaa maksimaalisen voiton ja halutunlaisen jälkeläisen toivossa.[47] Haluttuja esteettisiä ominaisuuksia on voitu myös luoda muokkaamalla lemmikin ulkonäköä typistämällä korvia ja häntiä, mikä muun muassa vaikeuttaa koiran kommunikointia toisten koirien kanssa[48].

Vaikka typistäminen ja moni muu kärsimystä aiheuttava käytäntö ovat nykyisellään laittomia ainakin Suomen eläinsuojelulain puitteissa, saa ihminen kuitenkin puuttua erittäin konkreettisesti lemmikkinsä ruumiiseen hyvinvoinnin nimissä. Lääketieteellisen antropologian tutkija Marja-Liisa Honkasalo on ottanut kantaa lemmikkien kastroimista ja leikkaamista yleisesti hyväksyttynä ja hyvänä käytäntönä pitämiseen. Lemmikkien leikkaamista perustellaan muun muassa lemmikin hyvinvoinnilla, uroskoirien aggressiivisuuden vähenemisellä, ihmisen mielenrauhalla ja ei-haluttujen tiineyksien välttämisellä, mutta Honkasalon mukaan väitetyt kastraation terveysvaikutukset eivät perustu tutkittuun tietoon – kastraation hyödyllisyydestä ei esimerkiksi juuri ole pitkittäistutkimusta.[49] Hän toteaa, että kastrointi käytäntönä on ihmislähtöinen eikä siinä ole otettu huomioon esimerkiksi koirien lajityypillistä käyttäytymistä.[50] Honkasalon kritiikki heijastelee Tuanin näkemyksiä siitä, kuinka ihminen pyrkii muovailemaan eläimestä itselleen mieluista ja omiin tarpeisiinsa vastaavaa lemmikkiä tavoilla, joissa eläimen omat tarpeet ja intressit ovat usein toissijaisia.

Ajatus sosiaalisesti kestävästä lemmikkiydestä on haastava sen valossa, kuinka konkreettista ja kokonaisvaltaista valtaa ihmiset käyttävät lemmikkejään kohtaan. Vaikka ihminen samaan aikaan voi ko-

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[43] Raevaara 2011, 166.
[44] Raevaara 2011, 165.
[45] Tuan 1984, 88.
[46] Tuan 1984, 108.
[47] Tuan 1984, 109.
[48] Honkasalo 2014.
[49] Honkasalo 2014.
[50] Honkasalo 2014.

kea rakkautta ja hellyyttä eläinkumppaniaan kohtaan, siihen voidaan myös kohdistaa lajityypillistä toimintaa, terveyttä ja hyvinvointia rajoittavaa toimintaa ihmisen omien mieltymysten toteutumiseksi. Seuraavassa luvussa käsittelemmekin käsitteellisellä tasolla lemmikin pitämiseen liittyviä moraalisia ongelmia.

3. Lemmikkiyden eettiset haasteet

Moniin tapoihin, joilla lemmikkieläimet ovat arkipäivässämme läsnä, liittyy merkittäviä moraalisia kysymyksiä[51]. Lemmikeiksi päätyneitä eläimiä voidaan ihmisen toimesta siirtää sosiaalisesta verkostostaan ja elinympäristöstään vieraisiin tiloihin. Pentuja erotetaan emoistaan pian niiden synnyttyä, laumaeläimiä saatetaan pitää päivisin yksin asunnoissa, lemmikkieläimen ainoa sosiaalinen kontakti saattaa olla ihminen. Eläimen asettaminen ihmisen asuinkumppaniksi toteutunee lajityypillisten tarpeiden kustannuksella.

Sosiaalisen kestävyyden periaatteiden toteutumiseen eläimen itsensä näkökulmasta tulee lähtökohtaisesti suhtautua varauksella: lemmikkiys on instituutiona ihmisen ylläpitämä. Arvioidaksemme sosiaalisen kestävyyden käsitteen sisällön toteutumista myös ei-inhimillisten eläinten näkökulmasta keskitymme tässä luvussa eläinyksilön oman kokemuksen ja intressien merkitykseen. Tarkastelemme lemmikkiyttä erityisesti eräiden moraalifilosofisten suuntausten ja kysymysten näkökulmasta, jotka kyseenalaistavat muiden eläinlajien asettamisen ihmisen määräysvallan alaisiksi.

3.1 Ihmis- ja luontokeskeinen näkökulma lemmikkiyteen

Ihmisen eläin- ja luontokäsitystä voidaan eritellä kahden hyvin erilaisen, antroposentrisen ja biosentrisen, näkökulman avulla. Antroposentrinen heijastuu edellisessä luvussa käsiteltyyn sosiaaliseen ja biosentrinen muun muassa Hiedanpään ja muiden esille nostamaan sosioekologiseen. Käytämme näkökulmia apuvälineinä kahden erilaisen eläin- ja luontokäsityksen havainnollistamisessa. Hyödynnämme kahta toistensa vastakohtaa edustavaa näkökulmaa lemmikkieläinten asemaan heijastuvien eettisten näkemysten kentän kartoittamisessa.

Antroposentrinen luontokäsitys on ihmiskeskeinen, jolloin suhtautuminen luontoon määrittyy ihmisen arvojen ja tarpeiden perusteella. Ihmiskeskeinen näkökulma suhtautuu luontoon arvoneutraalien syy–seuraussuhteiden alaisena mekanismina. Luonnon hyödyntämisen ihmisen hyvinvoinnin edistämiseksi ymmärretään olevan periaatteessa rajaton oikeus[52].

Antroposentrisestä näkökulmasta sosiaalinen kestävyys määräytyy ihmiselle tuotetun hyvinvoinnin ja onnellisuuden perusteella. Näkökulman voi katsoa olevan läsnä myös perinteisessä suhtautumisessa lemmikkieläimiin. Ihmiskeskeisestä näkökulmasta tarkasteltuna lemmikkiyden käytännöt kyseenalaistuvat vasta silloin, kun ne tuottavat ihmiselle itselleen negatiivisia tunteita, kuten tyytymättömyyttä tai huonoa omaatuntoa.

Eläimen asema ihmisen elinkumppanina voidaan antroposentrisestä näkökulmasta nähdä lemmikin omien tarpeiden ja toiveiden mukaisena, eläimen elämän päämääränä. Lemmikkieläimen tarkoituksena on antroposentrisestä näkökulmasta elää iloinen ja terve elämä ihmisen luomissa puitteissa, ihmisen

[51] Aaltola 2004, 9.
[52] Pietarinen 1997, 7–11.

parhaana ystävänä. Tästä näkökulmasta vaikuttaa selvältä, että eläimelle on hyvää ja tarkoituksenmukaista päätyä ihmisen hoivattavaksi ja huolenpidon kohteeksi. Eläinyksilön olemassaolon voidaan kokea saavan suuremman ja täydemmän merkityksen ihmisen ottaessa tämän hoiviinsa.

Antroposentrinen näkökulma legitimoi ihmisen vallan ja oikeuden päättää muiden lajien eläinyksilöiden kohtaloista. Ihmiskeskeinen lemmikkiyden konstruktio saattaa kuitenkin peittää alleen eläimen oman kokemuksen ja intressien merkityksen. Useita lemmikkiyden institutionalisoituneita käytäntöjä, kuten eläimen eristämistä emostaan, lajitovereistaan tai elinympäristöstään ihmisen seuralaiseksi, ei tavallisesti koeta tarpeelliseksi problematisoida.

Biosentrinen eläin- ja luontokäsitys puolestaan hylkää ihmisen erityisaseman muiden eläinlajien yläpuolella. Luontokeskeisen näkökulman mukaan luonto ja sen moninaisuus on sellaisenaan arvokas, riippumatta sen ihmislajille tuottamasta hyödystä.[53] Luontoon ja eläinlajeihin ei sisälly arvoasetelmia, joten niiden avulla ei voida oikeuttaa eettisiä periaatteita. Älyllisesti ja moraalisesti vahvimman eläimen asema ei näin nostaisi ihmislajia muiden elämänmuotojen yläpuolelle. Ihminen kuuluu luontoon osana moninaista järjestelmää samanarvoisena muiden elävien olentojen kanssa.[54]

Biosentristä näkökulmaa voidaan soveltaa ihmisen ja lemmikkieläimen suhteeseen hyväksymällä periaate kaikkien elämänmuotojen tasavertaisuudesta. Lemmikkiys voisi näin olla moraalisesti perusteltua ainoastaan silloin, kun se on eläimen oman hyvinvoinnin kannalta paras vaihtoehto. Eläimen asettaminen lemmikiksi tulisi tapahtua tämän omat tarpeet ja kokonaisuus huomioiden. Kysymys on siitä, toteutuuko eläimen hyvinvointi parhaalla mahdollisella tavalla ihmisen lemmikkinä.

Antroposentrismi ja biosentrismi tarjoavat kaksi vaihtoehtoista näkökulmaa, joita voidaan käyttää karkeina apuvälineinä sovellettaessa sosiaalisen kestävyyden käsitettä lemmikkieläinten tapaukseen. Pidämmekö eläintä lemmikkinä vain omaksi iloksemme ja tunteaksemme kiintymystä ja merkityksellisyyttä? Vai tukeeko lemmikkiys ensi sijassa eläimen omia tarpeita, haluja ja hyvinvointia? Biosentrisen näkökulman mukainen luonnon ja eläimen itseisarvon tunnustaminen johtaa kyseenalaistamaan sellaisia lemmikkiyden käytäntöjä, jotka ohittavat eläimen omat intressit perustavana lähtökohtana.

3.2 Eläinten moraalinen asema

Eri filosofit ovat ottaneet kantaa eläimen moraaliseen arvoon ja yhteiskunnalliseen oikeudenmukaisuuteen. Näitä kannanottoja yhdistää myös antroposentrisestä näkökulmasta luopuminen. Ihmiskeskeisen ajattelutavan kritiikki on voimistunut 1800-luvulta lähtien. Valistusfilosofi Jeremy Bentham (1748–1832) esitti jo 1700-luvulla, että eläimen asemaa pohdittaessa ei oleellista ole rationaalisuus, vaan kyky tuntea. Filosofi ja taloustieteilijä John Stuart Mill (1806–1873) vaati eläimille näiden onnellisuutta tavoittelevaa kohtelua. Kirjailija Henry Salt (1851–1939) kehitti "eläinoikeuden" käsitteen, joka perustui ajatukseen lajien välisestä tasa-arvosta.[55]

Nykyisenlainen eläinetiikka sai alkunsa moraalifilosofi Peter Singerin teoksesta *Oikeutta eläimille* (1975). Singer uskoo utilitaristiseen tapaan teon moraalisen oikeudenmukaisuuden määrittyvän sen tuottaman hyödyn perusteella. "Hyödyllä" Singer viittaa intressien, hyvinvointiamme edesauttavien seikkojen, tyydyttymiseen. Moraalinen teko on Singerin mukaan sellainen, joka maksimoi tyydytettyjen

[53] Pietarinen 1997, 7.
[54] Pietarinen 1997, 30–31.
[55] Aaltola 2010, 207.

intressien määrän. Singer korostaa utilitaristista, myös biosentriselle näkemykselle tunnusomaista, tasavertaisuuden periaatetta todetessaan jokaisen olennon intressit samanarvoisiksi. Esimerkiksi sukupuoli, rotu tai varallisuus ei nosta yksilön intressien moraalista arvoa. Myöskään lajilla ei ole merkitystä intressien arvolle.[56]

Singer linkittää rotu- ja sukupuolisyrjinnän spesismiin, eli lajisyrjintään. Singerin mukaan laji on rodun tapaan biologinen tekijä, jolla ei ole moraalista relevanssia. Ihmisen intressien suosiminen muiden lajien kustannuksella on näin rasismiin vertautuvaa lajisortoa. Singerin teoria tarjoaa perustan ja viitekehyksen yhteiskunnallisten eläinsuhteiden kritiikille. Hän on avannut oven näkemykselle, jonka mukaan eläinten intressit tulee ottaa kaikessa päätöksenteossa tasavertaisesti huomioon.[57]

Ihmiskeskeisen ajattelutavan hylkääminen johtaa pohtimaan lemmikkiyden käytäntöjä ihmisen ja eläimen tasavertaisuuden näkökulmasta. Pyrimme seuraavaksi riisumaan sosiaalisen kestävyyden käsitteeltä sen spesistististä ulottuvuutta, jolloin termin merkitys laajenee turvaamaan myös eläinten intressien toteutumista.

3.3 Lemmikkiys ja lajisorto

Sosiaalisen kestävyyden käsite on leimallisen ihmiskeskeinen. Sosiaalisesta kestävyydestä puhuttaessa huomio kohdistuu oletusarvoisesti ihmisiin. Ei-inhimillisten lajien asema rajautuu keskustelun ulkopuolelle ikään kuin luonnostaan. Kysymys on Singerin termein lajisorrosta.

Bruntlandin komission sosiaalisen kestävyyden määritelmää[58] voidaan käyttää apuvälineenä lemmikkieläinten aseman kestävyyden arvioinnissa silloin, kun sen ajatellaan koskevan tasavertaisesti kaikkia eläimiä. Lemmikkieläinten sosiaalisen kestävyyden toteutumista olisi siten, Bruntlandin komissiota mukaillen pohdittava yhtäältä lemmikkieläinten nykyisten tarpeiden toteutumisen näkökulmasta ja toisaalta myös tulevien lemmikkieläinsukupolvien intressien toteutumisen kannalta.

Sosiaalisen kestävyyden periaatteen voitaisiin ajatella turvaavan näin muotoiltuna kaikkien sellaisten olentojen etujen toteutumista, joilla on intressejä. Lemmikkieläimet käsitetään ihmisen ja muiden eläinten tapaan omiksi tasavertaisiksi subjekteikseen. Lemmikkiys olisi siten perusteltua vain silloin, kun se on eläimen itsensä näkökulmasta paras mahdollinen vaihtoehto intressiensä toteuttamiseksi. Määritelmä konkretisoi eläimen itseisarvon merkityksen muodostaen kehyksen, jonka avulla sosiaalisen kestävyyden toteutumista voidaan alkaa kartoittaa.

Mitä siis vaatisi se, että sosiaalista kestävyyttä tarkasteltaisiin sosioekologisesta näkökulmasta siten, että eläimillä olisi siinä tasa-arvoinen asema suhteessa ihmiseen? Voisiko eläimen itseisarvosta kohoava oikeussubjektius olla ratkaisu? Oikeussubjektina eläimellä olisi oikeus ajaa omia intressejään ja olla mukana määrittämässä sitä, mikä on oikein ja väärin. Pohjaa tällaiselle ajattelulle löytyy. Keskiajalta tunnetaan tapauksia, joissa siat on haastettu oikeuteen. Tuoreimmat esimerkit ovat meidän ajaltamme: Yhdysvalloissa vuonna 2012 tuomioistuin otti käsittelyyn miekkavalaiden nostaman kanteen, Espanja puolestaan myönsi vuonna 2008 ihmisapinoille oikeuden elämään ja vapauteen, jotka on yleensä nähty kuuluvan lähinnä ihmisoikeuksiin.[59] Seuraavassa luvussa käsittelemme tarkemmin eläinten oikeudellista asemaa sekä pohdimme, miten tätä asemaa voisi parantaa.

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[56] Aaltola 2010, 208–209.
[57] Aaltola 2010, 209.
[58] Brundtland ja muut 1987.
[59] Reuters 2008.

4. Eläin oikeussubjektiksi – ratkaisu ongelmaan?

Suomen lainsäädännössä lemmikkejä ja tuotantoeläimiä pidetään tällä hetkellä suojeltuina oikeusobjekteina eli suojelunalaisina esineinä. Oikeussubjekti ja oikeusobjekti ovat oikeustieteen peruskäsitteitä. Suomen lainsäädännössä oikeussubjekteina pidetään luonnollisia henkilöitä (eli ihmisiä) ja oikeushenkilöitä (eli eri yrityksiä, yhteisöjä sekä julkisoikeudellisia tahoja). Nämä oikeussubjektit ovat myös oikeuskelpoisia eli he voivat olla eri oikeuksien, kuten perusoikeuksien, kantajia. Oikeuskelpoisuudesta on erotettava oikeustoimikelpoisuus, mikä tarkoittaa sitä, että henkilö pystyy itsenäisesti osallistumaan erilaisiin oikeustoimiin, jotka luovat ja muuttavat hänen velvollisuuksiaan.[60] Oikeusobjekti taas puolestaan tarkoittaa esinettä tai henkilöä, johon voi kohdistua oikeuksia tai velvollisuuksia. Oikeusobjektit eivät siis voi olla oikeussuhteiden osapuolia.

Eläimet eivät ole lain silmissä yksiselitteisesti vain esineitä, sillä niitä suojaa erityinen eläinsuojelulainsäädäntö, merkittävimpinä eläinsuojelulaki ja sen nojalla annettu eläinsuojeluasetus. Eläinsuojelulain 1.1 §:n mukaan kyseisen lain tarkoituksena on "suojella eläimiä parhaalla mahdollisella tavalla kärsimykseltä, kivulta ja tuskalta". Lisäksi lain tarkoituksena on edistää eläinten suojelua ja hyvää kohtelua. Tätä tarpeettoman kärsimyksen kiellon ja hyvän kohtelun periaatetta voidaan itsessään pitää tavoitteina, joita ei voi palauttaa esineille tunnusomaiseen omistusoikeuteen.[61] Lain 2 §:ssä todetaan, että suojelun piirissä ovat kaikki eläimet. Signerin mainitsemaa erottelua eläinlajien sisällä lainsäädäntö ei siis tältä osin ylläpidä.

Näitä tarpeettoman kärsimyksen kiellon ja hyvän kohtelun periaatteita on vahvistettu kriminalisoimalla eläinsuojelurikokset rikoslain 17. luvussa. Lisäksi toiset eläimet ovat luonnonsuojelulain mukaan rauhoitettuja. Suomen lainsäädännön silmin eläimiä ei siis voi ainoastaan tarkastella esinenäkökulmasta, vaan ne saavat erilaisia rooleja riippuen siitä, mitä lainsäädäntöä tarkastellaan.[62]

Yksi tapa nostaa lemmikit sosiaalisen kestävän kehityksen keskiöön oikeusjärjestyksessämme on antaa niille samankaltainen asema kuin luonnollisille henkilöille eli ihmisille. Käytännössä se tarkoittaisi sitä, että lemmikeistä tehtäisiin oikeussubjekteja. Oikeussubjektiuden ja objektiuden käsitteet ylläpitävät vahvasti käsitystämme oikeudesta ja saattavat myös selittää sen, miksi eläinten oikeuksia on niin hankala ajatella juridisesti[63]. Toisaalta, vaikka näiden käsitysten muuttaminen vaatiikin myös oikeustieteen ymmärtämisen syvällistä muutosta, on niiden muutoksesta esimerkkejä historiassa: esimerkiksi 1700-luvulla naisten oikeuksia vastustettiin sillä perusteella, että ne eivät oikein sopineet oikeustieteelliseen kielenkäyttöön.[64] Myös eläinten aseman muutoksesta on hiljattain esimerkkejä: Yhdysvalloissa tuomioistuin otti vuonna 2012 käsittelyyn tapauksen, jossa kantajina olivat miekkavalaat eläinaktivistien kautta: vaikka tapaus ei menestynytkään, ei miekkavalaiden oikeustoimikelvottomuus ollut tuomarin mielestä kanteen hylkäämisen syynä.[65]

Suomalaisessa oikeustieteellisessä keskustelussa eläinten oikeussubjektius on varsin uusi keskustelunaihe: kun oikeussubjektin käsitteen laajennuksesta on keskusteltu, on laajentamista ajateltu lähinnä luontoon tai luontokappaleisiin nähden, ei niinkään eläimiin.[66] Oikeustieteilijä Visa Kurki kirjoittaa

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[60] Minilexin verkkosivusto http://www.minilex.fi/a/oikeustoimikelpoisuus-ja-oikeudellinen-toimintakyky
[61] Kurki, 2012, 48.
[62] Tolvanen, 2010, 63.
[63] Tuori, 2000, 202.
[64] Wahlberg, 2011, 106.
[65] Tiikum et al v. Sea World Praks & Entertainment, 2012, 7.
[66] Kumpula, 2004, 359.

pro gradu -tutkielmassaan eläinten mahdollisuudesta olla oikeussubjekti ja oikeussubjektiuden mahdollisuuksista. Hän ottaa perusteluiden lähtökohdaksi suomalaisen oikeustieteilijän Aulis Aarnion väitteet eläimen oikeussubjektiuden mahdottomuudesta.

Ensinnäkin Aarnio perustelee artikkelissaan, etteivät eläimet voi olla oikeussuhteiden osapuolia, koska eläimillä ei voi olla velvollisuuksia. Aarnio mieltää oikeudet ja velvollisuudet vastinpareiksi; ilman toista ei voi olla toista. Koska vain ihmisille voi asettaa velvollisuuksia, vain ihmiset voivat olla oikeussubjekteja.[67] Aarnion käsitys oikeuksista ja velvollisuudesta pohjautunee oikeuden tahtoteoriaan, jonka mukaan oikeus määritellään subjektin tahdonvallan kautta. Vain tahtovalla henkilöllä voi olla oikeuksia ja velvollisuuksia.[68] Kyseistä teoriaa on kuitenkin kritisoitu muun muassa sen vuoksi, ettei se ota sylivauvoja tai vakavan mielisairauden takia vajaavaltaisia ollenkaan huomioon. Kurki puoltaa kuitenkin oikeudellisessa ajattelussaan niin kutsuttua intressiteoriaa: intressiteorian mukaan oikeudet perustuvat yhteiskunnan intresseihin ja tarpeisiin. Eläinten oikeuksia ja suojelua voidaan ainakin jossain määrin pitää yhteiskunnan intressinä jo nyt, sillä niiden tarve olla kokematta kärsimystä on jo säädelty eläinsuojelulain 1 §:ssä. Lisäksi Kurki toteaa, että esimerkiksi orjilla oli velvollisuuksia, muttei oikeuksia. Logiikan on hänen mukaansa toimittava myös toisinpäin ollakseen pitävä. Lisäksi muun muassa sylilapsilla ja vakavan mielisairauden takia vajaavaltaisilla henkilöillä ei ole (ainakaan kaikkia) velvollisuuksia, mutta heillä on kuitenkin oikeuksia.[69]

Toiseksi Aarnion näkemyksen mukaan eläimet eivät voi olla oikeussubjekteja, sillä ne eivät voi vastaanottaa, muuttaa ja toteuttaa oikeuksiaan erilaisissa instansseissa. Toisin sanottuna oikeussubjektius ja oikeustoimikelpoisuus näyttävät olevan hänen mielestään erottomasti yhteyksissä toisiinsa niin, että niiden on oltava samalla subjektilla. Eläin ei siis voi olla oikeussubjekti, koska se ei voi olla oikeustoimikelpoinen.[70] Aarnio vaikuttaa kuitenkin sekoittavan oikeuskelpoisuuden ja oikeustoimikelpoisuuden käsitteet: myös Suomen lainsäädännössä holhoustoimilain 1 §:n mukaan tunnustetaan ihmisetkin täysin oikeustoimikelpoisiksi vasta heidän täyttäessään 18 vuotta: sitä ennen he ovat vajaavaltaisia ja heidän oikeuksiaan valvoo edustaja. Kuitenkin myös alaikäisillä on oikeuksia. Lisäksi samaisen pykälän mukaan myös täysi-ikäinen voidaan julistaa vajaavaltaiseksi, jos hän ei syystä tai toisesta voi valvoa etujaan. Kurki toteaa, että myös edunvalvonta vajaavaltaiselle on jo nyt toteutettavissa, vaikkei heidän tahtonsa ehkä olisi täysin selvä.[71] On siis täysin mahdollista, että eläimet ovat oikeustoimien osapuolia edunvalvojien kautta. Haasteena kuitenkin on, miten eläimet kielellisesti pystyvät ilmaisemaan tahtonsa niin, että edunvalvoja pystyy ajamaan niiden intressejä. Kurki ei kuitenkaan takertuisi liiaksi tähän ongelmaan: eläimen mielihaluja ja toiveita ei ole kovin vaikea päätellä ja jo nyt niiden hyvinvointia voi analysoida esimerkiksi stressihormoneja mittaamalla. Eläinsuojelulain 3 §:n mukaan eläimen pidossa on otettava huomioon eläinten fysiologiset tarpeet ja käyttäytymistarpeet ja Kurjen mukaan lakia säätäessä ajatuksena on ollut, että näistä tarpeista voi saada luotettavaa tietoa – vaikkei eläin tarpeitaan kielellisesti pystykään ilmaisemaan.[72]

Voidaan siis esittää, ettei teoreettista ongelmaa eläinten oikeussubjektiudelle ole. Lainsäädäntöä voidaan siis periaatteessa muuttaa niin, että eläimet asetetaan oikeuden kantajiksi ja siten murretaan

[67] Aarnio, 1998, 987–988.
[68] Kurki, 2012, 35.
[69] Kurki, 2012, 30–31.
[70] Aarnio, 1998, 989–99.
[71] Kurki, 2012, 35.
[72] Kurki, 2012, 35.

yhteiskunnallisia rajoja ihmisten ja eläinten välillä. Lienee selvää, että jos eläimillä sanotaan voivan olla oikeuksia, lisää se ainakin symbolisesti eläinten arvostusta lainsäädännössämme ja samalla yhteiskunnassa. Kuitenkin kysymys siitä, onko oikeussubjektius välttämätöntä tai tarpeellista eläimen sosiaalisen kestävän kehityksen saavuttamiseksi vai pitäisikö muut keinot ottaa käyttöön, on monimutkainen. Seuraavaksi käsitelemme muutamia kysymyksiä, joita ajatuksesta eläinten oikeussubjektiudesta kumpuaa.

Perinteisessä sosiaalisen kestävän kehityksen keskustelussa termiin liitetään perusoikeudet: muun muassa YK-liiton määritelmässä sosiaalisen kestävän kehityksen pyrkimyksenä "on poistaa ihmisten välistä eriarvoisuutta ja varmistaa jokaiselle riittävä toimeentulo – sekä turvata perusoikeuksien toteutuminen"[73]. Koska eläimet eivät ole oikeussubjekteja, perustuslain toisessa luvussa luetellut perusoikeudet, esimerkiksi 2.7:1 §:n mukainen oikeus elämään, eivät kuulu heille. Voidaan myös kysyä, voiko perustuslaillinen oikeus elämään ollenkaan kuulua eläimille? Jos se kuuluisi, olisi esimerkiksi lihansyönti yhteiskunnassamme kokonaan kiellettyä. Ja jos kyseistä oikeutta eläimille ei myönnettäisi, onko edes järkevää puhua oikeussubjekteista, joilta tämä perustavanlaatuinen oikeus on suljettu pois?

Eläimillä voisi kuitenkin olla rajoitettu oikeus elämään. Jos eläin olisi oikeussubjekti, se voitaisiin edelleen omistaa, mutta eläimen omistaja ei voisi esimerkiksi pitovaikeuksien, allergian, eläimen häiriökäyttäytymisen tai muun vastaavan syyn takia tappaa eläintä.[74] Tämän rajoitetun oikeuden tunnustaminen voisi parantaa eläinten suojelua ja estää ihmistä mielivaltaisesti käyttämästä valtaansa riistää elämä toisilta eläimiltä. Toisaalta ongelmana on yhä, miten eläimet voivat kunnioittaa tuota rajoitettua oikeutta elämään toisia eläimiä kohtaan. On hankalaa sanoa, että sudella on velvollisuus olla syömättä jänistä, kun se ei tätä velvollisuutta ymmärrä tai koskaan kykene ymmärtämään – tämä velvollisuus ei kerta kaikkiaan ole suden elämän kannalta relevantti. Kurjen mukaan tässäkin dilemmassa tulisi pitää järjellisyys mukana: jos eläimiä ei voi velvoittaa toisiaan kohtaan, ei niillä myöskään ole velvollisuuksia toisiaan kohtaan. Kyseinen teoreettinen ongelma ei kuitenkaan poista eläinten mahdollisuutta olla oikeuksien kantaja.[75]

Jos eläimille annetaan oikeudet, voisi se tarkoittaa myös eläinten mahdollisuutta saada vahingonkorvausta, kun niille on aiheutettu tarpeetonta kärsimystä. Vahingonaiheuttaja joutuisi esimerkiksi korvaamaan eläimelle eläinlääkärihoidon. Toinen vaihtoehto voisi olla jonkinlainen kollektiivinen vahingonkorvaus: eläimille voitaisiin esimerkiksi perustaa jonkinlainen eläinten hyvinvointirahasto, johon kärsimyksen aiheuttajat maksaisivat vahingonkorvausta, joka käytettäisiin sitten yleisesti eläinten hyvinvoinnin parantamiseen. Kurki vaikuttaa olevan enemmän jälkimmäisen ajatuksen kannalla, koska yksittäinen eläin tuskin ymmärtäisi, että sille tehty vääryys lääkärikäynnin maksamisella hyvitetään ja tunnustetaan. Siksi hyvitys voisi sopia suuremman eläinjoukon hyvinvoinnin edistämiseksi.[76] Toisaalta voidaan kysyä, onko suoran vahingonkorvauksen antaminen tehokkaampi tapa edistää eläimen hyvinvointia kuin nykyiset eläinsuojelurikoksista langetettavat sakko- tai vankilarangaistukset.

Myös eläinten oikeussubjektiuden soveltamisala on hankala määrittää. Kuten sanottu, eläinsuojelulaki koskee sen 2. §:n mukaan kaikkia eläimiä, mutta annetaanko myös kaikille eläimille yhdenvertaiset oikeudet? Jos annetaan, missä menee eläimen raja – ovatko esimerkiksi suolistobakteerit tai planktonit eläimiä, ja kuka niiden tarpeet selvittää? Onko myöskään ylipäätään mielekästä antaa eläimille oikeuk-

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[73] YK-liitto, http://www.ykliitto.fi/yk70v/sosiaalinen
[74] Streng, 1999, 92.
[75] Kurki, 2012, 39.
[76] Kurki, 2012, 37.

sia ihmisten luomassa oikeusjärjestyksessä, joka selvästi on rakennettu ihmisten välistä yhteiseloa ajatellen eli nimenomaan sosiaalisesta, ei sosioekologisesta (tai kolmatta lukua mukaillen antroposentrisestä, ei biosentrisestä) näkökulmasta? Tuskin esimerkiksi sudetkaan omassa yhteisössään asettavat ihmisen samojen käyttäytymissääntöjen piiriin kuin toiset sudet. Jos eläimille annetaan oikeussubjektius, joudutaan niiden oikeudellinen asemansa selvittämään jokaisen ihmisten välillä olevan oikeudellisen ongelman kohdalla erikseen, mikä vaikuttaa erittäin tehottomalta. Esimerkiksi sen selvittäminen, onko Koira X:llä saantosuoja Koira A:n oikeasti omistamaa palloa kohtaan, kun Koira X on sen vilpittömässä mielessä hankkinut Koira B:ltä, vaikuttaa ilmeisen tarpeettomalta. Kyseisenlaisia ongelmia todennäköisesti syntyisi eläimen oikeussubjektiuden takia enemmän kuin osaamme kuvitellakaan. Oikeussubjektius vahvistaisi eläinten itseisarvon tunnustamista yhteiskunnassamme ja murtaisi nykyistä antroposentristä maailmakuvaamme, mutta moni oikeuden tuoma etu voitaneen toteuttaa esimerkiksi vahvojen kieltojen tai vahingonkorvausten kautta, mikä voi sopia oikeusjärjestyksen kokonaisuuteen paremmin.

5. Johtopäätöksiä

Olemme tässä tutkielmassa pyrkineet hahmottelemaan sitä, mitä sosiaalinen kestävyys on, millainen eläinten ja erityisesti lemmikkien asema ihmisen kulttuurissa ja yhteiskunnassa on, ja missä määrin lemmikin pitäminen on sosiaalisesti kestävää eläimen kannalta. Lemmikkiys on olemuksellisesti jotain, mitä eläin on ihmisen määrittelemänä ja suhteessa ihmiseen. Eläimet ovat osa ihmisen sosiaalista ympäristöä, mutta kyseenalaiseksi jää, missä määrin eläimillä on mahdollisuus elää ihmisen yhteydessä omalta kannaltaan tyydyttävää ja sosiaalisesti kestävää elämää.

5.1 Sosiaalisen kestävyyden määrittely – tutkimukselle

Ihminen on vain yksi maapallolla elävistä miljoonista eläinlajeista. Se ei ole runsaslukuisin, sosiaalisin tai kaikilla mittapuilla edes älykkäin lajeista. Eläinlajeille, myös ihmiselle, on tyypillistä itsekkyys ja oman lajin selviytymisen suosiminen muiden lajien kustannuksella. Ihminen on kuitenkin ollut niin verraton kilpailija, että sen hyvinvointi uhkaa muita lajeja sekä koko ympäristöä. Ihmisen rooli ympäristönmuutoksissa sekä lajien sukupuutoissa on yleistä tietoa.[77] Ihminen on myös alistanut eri tavoin palvelukseensa lukuisia eläimiä. Siksi ihmisen tulisikin sosiaalista kestävyyttä arvioidessaan luopua antroposentrisyydestä ja ottaa sosiaalisen kestävyyden määritelmän perustaksi biosentrisempi näkökulma.

Sosiaalinen kestävyys on hankala määritellä, koska määritelmistä on mahdotonta saada tarpeeksi kattavia. Tässä raportissa olemme tarkastelleet sosiaalista kestävyyttä kiinnittäen erityisesti huomiota eläinten asemaan. Raportin eri luvuissa olemme pyrkineet tuomaan esiin, miksi ihmiskeskeinen yhteiskunta ei ehkä ole eläinten kannalta paras vaihtoehto – vaikka eläimen asema olisikin niin hyvä, kuin vaikkapa lemmikkien länsimaisessa yhteiskunnassa. Eläimen hyvinvoinnille on laissa määritelty jonkinlaiset vähimmäisvaatimukset, mutta eläintä kuitenkin käsitellään oikeusobjektina, jolla ei itsellään ole oikeuksia. Olemmekin tarkastelleet, voisiko eläimen asemaa laissa muuttaa siten, että eläin olisi ihmiseen verrattava oikeussubjekti. Tämä voisi toimia teoriassa, mutta aiheuttaisi kuitenkin käytännössä huomattavia ongelmia, kuten neljännessä luvussa olemme todenneet.

[77] Vitousek ja muut 1997.

Tässä raportissa olemme argumentoineet, että vain ihmisarvoisen elämän tavoittelu ei riitä. Sosiaalisen kestävyyden toteutumiseksi tulee tavoitella maailmaa, jossa tunnustetaan kaikille oikeus elämään, ja jossa kaikkien olentojen on mahdollista elää lajityypillinen elämä. Olemmekin pyrkineet pohjustamaan kaikki lajit huomioonottavaa sosiaalisen kestävyyden määritelmää. Eläimet huomioonottavan sosiaalisen kestävyyden määritelmän pohjana voisi käyttää esimerkiksi Johannesburgin julistuksessa kirjattua sosiaalisen kestävyyden tavoitetta sellaisen maailman luomisesta, joka tunnustaa "ihmisarvoisen elämän tarpeen kaikille"[78], myös eläimille. Yhdistämällä tähän määritelmään toisessa luvussa listaamamme FAWC:n viisi perusvapautta täyttyisivät sekä ihmisen että muiden eläinten perustarpeet. Lopullinen määritelmä olisi lajirajat rikkova: sosiaalisesti kestävän kehityksen tavoitteena on tunnustaa "arvokas elämä, jossa yksilöllä on oikeus hyvinvointiin, terveyteen, lajityypilliseen käyttäytymiseen sekä vapauteen ylimääräisestä pelosta". Yksilöllä tarkoitettaisiin määritelmässä kaikkia eläinyksilöitä – niin inhimillisiä kuin ei-inhimillisiäkin. Sosiaalista kestävyyttä käsittelevissä tutkimuksissa tulisi nähdäksemme pyrkiä ottamaan huomioon muidenkin kuin ihmisten tarpeet ja intressit, sekä pyrkiä sisällyttämään nämä muut sosiaalisen kestävyyden määritelmiin.

5.2 Eläinten sosiaalisesti kestävä tulevaisuus – lainsäätäjälle

Tätä tutkielmaa kirjoittaessa eläinsuojelulain kokonaisuudistusta valmistellaan maa-ja metsätalousministeriössä. Lakiesityksen on tarkoitus valmistua vielä vuoden 2015 aikana.[79] Muutoksen avulla pyritään muuttamaan nykyistä eläinsuojelulakia niin, että se vastaa Suomen perustuslain vaatimuksia ja yhteiskuntamme eläinkäsityksen muuttumista. Lisäksi painopisteenä uudistuksessa on tuotantoeläinten tilanteen parantaminen. [80]

Lakiesitystä valmisteleva työryhmä on ilmoittanut, että uuteen lakiin pyritään kirjoittamaan periaate eläimen itseisarvosta. Itseisarvo ei kuitenkaan tarkoittaisi suoraan eläimen oikeussubjektiutta ja itseisarvoa juridisessa mielessä, vaan sitä pidettäisiin pikemminkin eettisenä periaatteena. Laissa parannettaisiin eläimen yhteiskunnallista asemaa toteamalla, että sillä on ihmisestä riippumaton, oma arvonsa.[81] Ottaen huomioon, että lailla on myös vaikutusta ihmisten moraalikäsityksiin, lienee eettisen itseisarvon tunnustaminen hyvä ratkaisu eläimen sosiaalisen kestävän kehityksen kannalta.

Uuden eläinsuojelulain ensisijaiseksi tavoitteeksi on muodostumassa eläimen hyvinvoinnin edistäminen ja eläimen mahdollisuus olennaisten käyttäytymistarpeiden tyydyttämiseen. Entinen tarpeettoman kärsimyksen kiellon periaate ei olisikaan lain lähtökohtana, vaan eläimen hyvinvointia tulisi edistää.[82] Jos lain lähtökohdan muutos tarkoittaa sitä, että eläimen kärsimykseen suhtaudutaan entistä tiukemmin, koska hyvinvointia voidaan pitää kärsimyksen vastakohtana, kuulostaa se uudistukselta, jolla eläimen kärsimystä saadaan vähennettyä. Vaikka uudistukset vaikuttavakin teoriassa oikeansuuntaisilta, pitää lainsäätäjän myös panostaa eläinsuojelulain tehokkaaseen valvontaan ja sääntelyyn: esimerkiksi nytkin eläinsuojelulain 8 §:ssä kielletään sellainen eläinjalostus, josta voi aiheutua eläimelle kärsi-

[78] Johannesburgin julistus, 2.
[79] Maa-ja metsätalousministeriö, http://mmm.fi/elainsuojelulaki
[80] Valtioneuvoston verkkosivu.
[81] Savolainen, 2014, Edilexin verkkosivu.
[82] Savolainen, 2014, Edilexin verkkosivu.

mystä taikka merkittävää haittaa eläimen hyvinvoinnille tai terveydelle. Kuitenkin esimerkiksi englanninbulldoggien jalostus on johtanut eläinten lisääntyneisiin hengitysvaikeuksiin[83]. Vaikka monet rotuyhdistykset nykyisellään antavatkin suosituksia, joilla jalostuksen aiheuttamia terveyshaittoja pyritään vähentämään ja välttämään, voidaan kyseenalaistaa se, onko ylipäätään mielekästä pyrkiä lisäännyttämään tietyt (usein esteettisesti määritellyt) kriteerit täyttäviä eläimiä, kun jalostuksella on joka tapauksessa selvästi havaittuja haittavaikutuksia.

Eläinten suojelua voisi edellä mainittujen esitysten lisäksi tehostaa nykyisestään antamalla eläinsuojelujärjestöille puhevalta eläinten asioita hoitaessa. Esimerkiksi luonnonsuojelulain (1996/1096) mukaan ympäristönsuojelujärjestöt voivat osallistua ja käyttää puhevaltaa luonnon monimuotoisuutta suojatessa kun taas eläinsuojelulain 34.–38. §:n mukaan maa-ja metsätalousministeriö, aluehallintovirasto ja esimerkiksi kunnan lääkäri ohjaavat ja valvovat kyseisen lain toimeenpanoa. Järjestöillä ei siis ole valvonta- tai vaikuttamismahdollisuutta. [84] Kuitenkin erityisesti lemmikkien ja tuotantoeläinten suojelun kohdalla viranomaisvalvonnasta saattaa koitua intressiristiriitoja, joiden takia eläinten suojelu ei toteudu niin tehokkaasti: esimerkiksi lemmikkiään kaltoin kohteleva omistaja saattaa olla kunnaneläinlääkärin asiakas, jolloin eläinlääkärin taloudellinen etu ja eläimen etu saattavat joutua ristiriitatilanteeseen. Lisäksi viranomaiset, poliisia lukuun ottamatta, työskentelevät vuorovaikutuksessa eläinten omistajien kanssa, sillä he neuvovat heitä eläinsuojelullisten ongelmien ennaltaehkäisyssä. Siten vähäisiin ongelmiin ei välttämättä puututa henkilökohtaisten suhteiden ylläpitämisen takia. Kyseisten intressiristiriitojen takia voisi olla eläinten suojelun takia tehokkaampaa, että tietyn alueen eläinsuojelujärjestöt voisivat myös toimia eläinten suojelun puolestapuhujina ja näin tehostaa uudistuvan eläinsuojelulain sääntelyä.[85]

6. Lopuksi

Tässä raportissa olemme käyneet läpi, miten sosiaalisesti kestävä kehitys määrittyy ja miten sen tulisi määrittyä. Olemme myös tarkastelleet, miten yksi yhteiskuntamme kulmakivistä, oikeuslaitos, näkee eläimen – ja voisiko näkemystä muuttaa. Tällä hetkellä työn alla oleva eläinsuojelulain uudistustyö on selvä merkki siitä, että eläin ehkä nähdään tulevaisuudessa paremmassa asemassa kuin nyt. Täydellisen lajitasa-arvon saavuttaminen lienee utopiaa – siinä missä täydellisen ihmislajin sisäisen tasa-arvonkin. Tätä tasa-arvoa kohti on kuitenkin jatkuvasti työskenneltävä sosiaalisesti kestävän elämän toteutumiseksi. Lainsäädännöllä on tehtävä kaikki voitava lajitasa-arvon edistämiseksi sekä eläinten aseman ja hyvinvoinnin parantamiseksi. Samaan aikaan on kuitenkin myönnettävä, että pelkällä lainsäädännöllä luotavat muutokset eivät sellaisenaan välttämättä ole riittäviä. Jotta eläinten asema todella muuttuisi, täytyy muutoksen tapahtua ihmisten käsityksissä itsestään tasavertaisena osana luontoa.

[83] Marke, Helsingin Sanomien verkkosivu, 2014.
[84] Mäntylä, 2010, 87–88.
[85] Mäntylä, 2010, 124.

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Hallituksen esitykset

Hallituksen esitys Eduskunnalle oikeudenkäyttöä, viranomaisia ja yleistä järjestystä vastaan kohdistuvia rikoksia sekä seksuaalirikoksia koskevien säännösten uudistamiseksi (HE 6/1997 vp)

Lainsäädäntö

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Laki holhoustoimesta 1.4.1999/442
Suomen perustuslaki 11.6.1999/731
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3D Printing and Cultural Transformation for Sustainable Consumption

Maria Tuomia[a], Satu Tuittila[b], Anna Rantasuo[b], Ramona Pulli[c], Kristiina Paju[b], Hoa Thi Ngoc Nguye[b] & Asser Junnila[d]

[a)] University of Turku, Mathematics and Natural Sciences, Ecology
[b)] University of Turku, Turku School of Economics, Futures Studies
[c)] University of Turku, Faculty of Humanities, Comparative Religion
[d)] University of Turku; Mathematics and Natural Sciences; Computer Technology, Electronics and Communication Systems

1. Introduction

Economic growth has been continuing drastically since the industrial revolution and currently we are facing a situation where the planet is reaching its boundaries. According to Norwegian futurist Jørgen Randers, the three major future trends that are going to define our future are global population growth, stagnation of economic growth and the change of work and lifestyle (Randers 2012, J. Randers at the Sitra Megatrends seminar in Helsinki January 14, 2016). These three future trends are highly related to the consumption culture prevailing especially in the Western world. Population growth brings along increased rates of consumption, not only in the West but also in the developing countries aiming to raise their living standards, where the economic growth is still accelerating (Worldwatch 2011). At the same time monetary wealth is accumulating to an ever smaller group of people, increasing income and social inequalities both globally and in the West (Oxfam International 2015). In addition, Western world might be reaching the limits of economic growth based on old structures. According to Randers, productivity growth will slow down and productivity remain low in "mature" economies, where population growth is stagnating and most people work on service industry. This phenomenon is observable in statistics for the US where productivity growth has declined from some 3 % per year fifty years ago to current 1%. (Randers 2012, p. 6)

In the international policy arena global challenges of inequitable division of wealth and unsustainable use of resources has been acknowledged, as e.g. the UN through Sustainable Development Goals aim to steer member countries to implement measures to support sustainable development. The UN Sustainable Development Goals were revised in September 2015 and formerly existing 8 goals were transformed into 17 goals. Goal number 12 aims to ensure sustainable consumption and production patterns. (Sustainable Development Knowledge Platform 2015, United Nations 2015)

Financial downturns may and have often in the past negatively affected innovation and private sector R&D investments (Guellec & Wunsch-Vincent 2009). However, during the 2008 economic crisis, R&D investment levels may have been little affected or even increased for smaller sized companies (Golomzina 2013). As technological development and the societal context it is embedded in affect and interact with each other the prevailing Western mass-consumption and production culture creates fertile ground for technological development (Michalski 1999). Indeed, the 21st century has seen multiple technological revolutions in e.g. materials development, genetic and information technology and the rate of innovation seems to be increasing. Novel technologies can also have significant effects on lifestyles, identities, the consumption culture and sustainability. In the current report we ask how a novel,

disruptive technology, 3D printing may be linked with sustainable consumption. The possibilities of technology for either supporting or preventing sustainable consumption are examined, with consideration of the diverse attitudes and policies related to technology in sustainability discussion. Development of a novel technology can also bring negative consequences to sustainability and thus possible conflicts between various sustainability dimensions are also taken into consideration. Finally, as novel technologies alone are unlikely to promote changes in complex social systems, we aim to understand how 3D printing could play a part in and act together with a cultural transformation to promote sustainable consumption culture.

Theoretical basis and founding paradigms of the report are laid in the first part by presenting and defining concepts of sustainability, culture and cultural sustainability, consumerism and sustainable consumption. This is followed by a short presentation of methods. Then, in chapter 3, 3D printing and its relationship to ecological, social and economic sustainability as well as to consumption culture are discussed. Chapter 4 and 5 present a discussion on possibilities of 3D printing to promote sustainable consumption.

1.1 Sustainability

The terms sustainability and sustainable development are often used in parallel despite some discrepancies in their meaning. Recently the term 'sustainability' has become popular because it contests the notion of development and challenges its connections to economic growth; thus it can support values and agendas of de-growth and no growth (Dessein et al. 2015, p. 22–23.). Yet it might still able to accommodate more growth-neutral visions such as a-growth, which has recently challenged the premises of often unambiguously defined de-growth (van der Bergh & Kallis 2012). The concept of a-growth emphasizes rejection of GDP as an indicator rather than rejection of GPD growth itself. It takes an indifferent position towards DGP, consumption or physical growth, and focuses on sound environmental, social, and economic policies independently of their effects on economic growth (van der Bergh & Kallis 2012).

The concept of sustainable development has its origins in Bruntland's commission report "Our common Future" published in 1987 and is defined as "development that meets the needs of the present without compromising the ability of future generations to meet their own needs" (WCED 1987, p. 43). The definition of sustainable development refers largely to equity and fairness in intergenerational and global levels and it is used regularly to guide policies and research. Policy strategies for sustainability are diverse, and vary from individualist perspectives, stressing the responsibility and behavioral change of individuals to systemic or structural perspectives, where the focus is on governmental and organizational level governance, regulation and initiatives (Spaargaren 2011).

Sustainable development is often seen as comprising three dimensions: ecological, economic and social, yet policy and research initiatives have promoted the inclusion of a fourth, cultural dimension since early 2000's (Hawkes 2001, Soini & Birkeland 2014, p. 213). The most fundamental and researched dimension is the ecological one, not surprisingly given that coining the concept of sustainable development has its origins in environmental concerns. While all the other dimensions have gained increasing importance and interest, the cultural dimension remains elusive. Importantly, all four dimensions are currently acknowledged to be interwoven and interconnected. (Soini & Birkeland 2014, p. 213)

Despite the fact that different dimensions of sustainability are interwoven, their aims may be in conflict. Economic sustainability, broadly defined as keeping the capital intact and "living off the interests" (Goodland & Daly 1996) may support and/or even conflict with the aim of ecological sustainability - 'meeting human needs without compromising the health of ecosystems' (sensu Callicott & Mumford 1997, p. 32) - as well as with the one of social sustainability - "equity, participation and social cohesion" (sensu Murphy 2012, p. 1). There is a clear need for conceptual frameworks that can accommodate and deal with synergies and conflicts between these three dimensions. Cultural sustainability has been suggested to be able to act as this mediator (Soini & Dessein 2016). This complex and multifaceted concept along with its definitions, aims and relationship with the first three dimensions will be the topic of the following chapter.

1.2 Culture and cultural sustainability

Culture can be defined broadly to mean everything human made that is not a product of biological or natural processes without human intervention. It can be understood also in a narrower sense to incorporate only the creative practices, objects and value systems of arts, which are commonly considered as high culture, and/or objects of heritage. In the broad sense culture includes everything we have learned, values, behavior, and as such, is the starting point of all of our functions and contemplation. (Geertz 1973, p. 89) In both narrow and broader definitions, we can continue observing the culture in adversarial way - in the other pool we can then find e.g. nature (general), other culture (dividing), or uncivilized person or society (hierarchical). (Bauman 1999) When defining culture this way the definition itself is value charged and raises the question of power - what is considered valuable enough to be defined as (high) culture, and who is entitled to the power to make the decision?

Culture is highly context dependent. It is essentially a product of space and time, being connected to the concept of place and the spatial-temporal identification of home (Soini & Dessein 2016, p. 4). Different spatial and temporal factors and boundaries constitute interlinked aspects of how we understand and value culture. Some narrow and static views of culture consider cultural capital as predominantly local or spatially restricted entities, preserved through time. However, especially in its broad definition, culture can be understood as something constantly evolving, dynamic and changing, and thus e.g. any modern urban culture is a result of accumulated history specific to the location. Within any place, culture can become increasingly diverse through inclusion of items and habits, acknowledgement of heritage or establishment of new subcultures and ways of life. (e.g. Soini & Birkeland 2014) These subcultures may be formed by boundaries of language, social status, age and gender, hobbies or profession and same person may live and transform between different cultures fluently.

Mainly deriving from the narrow definitions, culture can be seen to have a self-sustaining and supportive role within sustainability. Hawkes (2001) introduced the idea of culture as the 4th pillar of sustainability, alongside the more established ecological, social and economic dimensions. This notion accommodates inter-generational preservation, development and sharing of cultural capital, i.e. tangible and intangible cultural heritage (incl. traditions and values) and arts in a rapidly globalizing world (Soini & Birkeland 2014, p. 216).

Concept and definition of cultural sustainability is elusive, as can be expected based on the diversity of definitions and meanings associated with both culture and sustainability. In policy, questions of culture have been addressed since late 1990's either separately or as part of social dimension of sustainability, and in scales ranging from local to international (Soini & Birkeland 2014, p. 213-214). Recent

research efforts have attempted to identify, conceptualize and contextualize various meanings of cultural sustainability and the roles culture can play within sustainable development (e.g. Soini & Birkeland 2014). Most importantly, culture's role in and how culture is understood in the context of sustainability varies: culture can be something that is supportive and self-sustaining, instrumental and connecting, or even transformational (Soini & Birkeland 2014, Soini & Dessein 2016). How culture is viewed in the context of sustainability is often linked with political and ideological assumptions and views (Soini & Birkeland 2014, p. 219).

However, culture can act as an instrument to sustainability too, and have a mediating role to attain the other dimensions of sustainability (Soini & Dessein 2016, p. 3). In this view culture, both in material and immaterial form can be seen as a resource for sustainable development. This can happen through e.g. branding local cultural capital for economic gain, or by using artistic activities for democracy participation and for communication between different age groups and cultures and so promoting social sustainability. In this mediator role culture's intrinsic values are seen as resources for its facilitator's role and the intrinsic and instrumental values of culture become interlinked (Soini & Dessein 2016).

Finally, deriving from the broad definitions of culture, in a third representation of culture in sustainability discourse culture's role is seen as a fundamental foundation of human behavior, our values and actions as individuals and societies. Thus it provides the means and platform for transformation towards a sustainable society. In both mediating and overarching presentations of cultural sustainability, culture can identify and enhance synergies and help to resolve conflicts between ecological, economical and social dimensions of sustainability. Development is a cultural process which may transform the society and create new policies. (Soini & Dessein 2016, p. 3–4) Depending on the case-specific context and chosen presentation and paradigm of culture and sustainability, technology and globalization may play major roles as catalysts, challenges, risks, opportunities and facilitators for cultural sustainability. The role of technology in sustainability is further discussed in chapter 4.1.

Increasing interest towards cultural sustainability perhaps implies that some overarching aims and developmental criteria are not sufficiently covered through consideration of ecological, social and economic dimensions alone. Furthermore, as already mentioned, aims and demands of these three dimensions can be in conflict. Role of culture as a mediator, common platform or an all-encompassing medium for sustainability can help to overcome some of these issues. This is reflected in some stated criteria for cultural sustainability: "the advancement of material and non-material well-being, intergenerational equity, equity within the present generation, and the recognition of interdependence" (Soini & Birkeland 2014, p. 217).

A broad view of culture and subsequent consideration of culture's role in sustainability as mediating, connecting and transformative emphasizes human behavior both as driver of sustainability and as a prime target of transformative sustainability policies (Harlow et al. 2016, p. 295). Lifestyle is a concept that can simultaneously be seen as a manifestation of human behavior as well as an aspect of culture. Lifestyle refers to a way of life that is able to meet individual goals, while at the same time being representative of one's social position as well as mental models and aspirations (Backhaus et al 2011). Modern western lifestyles equate often well-being with material wealth, and are thus strongly linked to material goods, consumption behavior and flows of material and energy (ibid. p. 9-10).

In this study we understand culture broadly and even holistically, as a way of life (e.g. Taira 2004, p. 122); it is the shared meanings and significances as well as the arts, skills, and education. Culture encompasses artifacts and knowledge and practices of making and valuing them, the so called high culture, as well as unspoken rules, place and context-specific shared significances, values and lifestyles.

However, in the present report we will adopt a focus on the latter. Consequently, we understand cultural sustainability from a holistic perspective, emphasizing the connecting and transformative roles of culture for and as sustainability (see Soini & Dessein 2016).

1.3 Consumerism and sustainable consumption

According to Arnould and Thompson, "consumer culture denotes a social arrangement in which the relations between lived culture and social resources, and between meaningful ways of life and the symbolic and material resources on which they depend, are mediated through markets." (Arnould & Thompson 2005, p. 869). The level of consumption is constantly growing and the overall size and speed of material flows is increasing. According to Douglas B. Holt the Western consumers are viewed as voracious consumers due to consumerism, which is understood as a set of values that orients our behavior and lives around consumption. These values are often described with materialism, possessive individualism, even narcissism and these guide the consumption choices and actions, leading to unsustainable consumption. (Holt 2012, p. 238)

Consumer culture does include the symbolic meanings people tend to assign to the purchasing habits, products/services and certain types consuming practices - especially when considering consumer experiences and the cultural associations and illusions added to commodities through advertising (Featherstone 2007). According to Mike Featherstone consumer culture can be perceived from three different perspectives. The first approach is premised upon the expansion of capitalist commodity production enabling vast accumulation of material culture in the form of consumer goods and sites of purchase and consumption. The growing consumption has also led into greater egalitarianism and individual freedom. Second approach is a more strictly sociological perspective of satisfaction and status deriving from goods that can be displayed as signs of social bonds or distinctions. Thirdly, consumer culture is a dimension of emotional pleasures of consumption as the dreams and desires become celebrated in consumer cultural imaginary including sites of consumption, generating direct bodily excitement and aesthetic pleasures. (Featherstone 2007, p. 13)

Two types of factors which have significant influences on buying behavior, in general, could be identified as cultural and social factors (Hoyer & MacInnis 2001). Cultural factors consist of a set of values, beliefs, customs, lifestyles and personalities which create the culture of each individual. Social factors primarily include reference group and indirect reference group. Solomon et al. (2006) defines reference groups as 'reference group influence may lead to conformity, which can be defined as "a change in beliefs or actions as a reaction to real or imagined group pressure"'. This happens as the members of the group develop norms or informal rules that specify the ideal patterns of behavior and define the group's identity. Indirect reference groups are defined as people 'with whom a person does not have direct face to face contact' such as mass media, celebrities or idols.

Sustainable consumption has been defined as "the use of goods and services that respond to basic needs and bring a better quality of life, while minimizing the use of natural resources, toxic materials and emissions of waste and pollutants over the life cycle, so as not to jeopardize the needs of future generations" (Oslo Symposium, 1994 cited on UN Sustainable Development, 2015). Sustainable consumption is thus related to the purchase, use and disposal of products and services. Sustainability in lifestyles is a broader concept and contains activities such as interpersonal relationships, leisure activities, sports and education in addition to material consumption. (Backhaus et al. 2011, p. 9) Past and current consumption and production patterns form a foundation of lifestyles and these are intricately

interwoven with people's everyday choices and practices (Mont 2007, cited in Backhaus et al 2011, p. 9). Hence not only consumption but also forms of production are highly relevant to the sustainable consumption.

Especially in the post-modern society, consumption tends to be a way of self-expression. Despite of rising awareness of the consequences of excessive production, awareness of production modes and effects of production is not a strong constituent of this self-expression, and thus production phase has little weight when making purchasing choices. Past changes in production modes combined with modern ways of life have led to unsustainable choice being cheaper, quicker and simpler and therefore favored, despite of the realization that the other choice would be a more sustainable one. In addition, as Tim Jackson states in his lecture "Prosperity without growth", during economic crises people are encouraged to consume even in debt in order to nurture economic growth (Tim Jackson explained in UEBERLEBENSKUNSTtv, Youtube 2012). This contradicts the aspiration to reach sustainable growth and sustainable consumption and thus creates a great challenge in the sustainable development.

Ingo Schoenheit poses a very relevant question by asking what can be done to make consumers want what they should. Are consumers ready to adjust their consumption into more sustainable ways by their own will? (Schoenheit 2009, p. 21) According to Mont consumers do have responsibility for the consequences of their own consumption and lifestyles as households cause 40% of overall environmental impacts in the society. However, the mass shifts in culture and consumption and production pattern are driven by governments. (Mont 2013, p. 12) This shows the power of policies and regulations in supporting the change towards sustainable consumption.

The conceptual approach to sustainable consumption can be divided into two main perspectives, which have principally different assumptions (Lorek & Fuchs 2013, p. 37-38). The first one, called "weak sustainable consumption perspective" has its roots in market approaches and technological optimism, whereas the second one, called "strong sustainable consumption" stresses social innovation as a starting point, changes in consumption levels and patterns, and has more pessimistic position toward technology.

In this study sustainable consumption is referred to as a form of consumption that takes different aspects of sustainability i.e. ecological, economic, social and cultural, into consideration. Sustainable consumption is essentially related to sustainable production as services or products require a process of production. Sustainable consumption is a relevant part of sustainable way of life and as represented in this study, also a part of sustainable culture.

2. Methods

Our methodological approach combines information from a wide spectrum of written resources and thus represents a broad, non-systematic literature review. A diverse resource base is partially necessitated by the nature of our topic - 3D printing is a rapidly developing field with tight connections to business and commercialized applications. While peer-reviewed academic publications are utilized as much as possible, much of the information on recent commercial innovations and established practices is published and accessible through other sources, such as company www-pages, 3D printing community blogs and newsletters.

Non-peer reviewed reports represent the best available knowledge on various projects and government- or other official mandated assessments. Thus, factual knowledge resides not only in scientific publications. Scientific publications, reports and information on established practices and innovations

of commercial companies are considered reliable information and specific quality criteria are not applied to these. In addition, to gain a more comprehensive and up-to-date view, we utilize news and blog articles as well as 3D printing community www-pages. We cite these with more care and consideration, and cite and check original information whenever possible. The above described use of source literature is not unlike that applied in scientific publications in the field (e.g. Gress & Kalafsky 2015).

3. 3D Printing

3.1 What is 3D printing?

3D printing is a novel manufacturing technology, in which a 3 dimensional object is printed by stacking 2 dimensional layers on top of each other layer by layer until the complete object is formed (Lipson & Kurman 2013, p. 11-12). Printing is based on a digital model, making the designs highly transferable and opening new possibilities for open-source manufacturing and design. At the moment 3D printing is superior or competitive compared to traditional manufacturing techniques when objects are complex, or when production amounts are relatively low. 3D printing is becoming rapidly more versatile in terms of materials used, as new printing technologies are being designed constantly and new materials and filaments released weekly or even daily (3D Printer News & 3D Printing News 2015).

3D printing has had a remarkable effect on consumer culture of creative design to an extent where almost everyone can turn computer assisted design to reality. 3D printing has a wide range of applications, everything from simple objects to artificial skin. However, it is debated that 3D printing might also create new threats in the society when used for example for criminal purposes such as illegally copying keys, bank cards or weapons (Hoy 2013, p. 97).

Technological development from the first stereolithography 3D printers used back in the 1980's has been dramatic, as has been the expansion of uses and purposes of the technique. The first commercial 3D printer was introduced in 2003 and currently most printers are still used for rapid prototyping for industrial purposes, but increasingly also manufacturing. However, as 3D printing is still relatively slow, it does not threaten mass-manufacturing industry. The price of consumer printers and materials have decreased significantly but still high end devices are out of reach for consumers due to device costs. However, a weak signal of the production form approaching consumers is to be seen as the Turku city library introduced this novel technology to everyone as a free service (Turku Kaupunginkirjasto, 2016).

3D printing both necessitates and inspires thoughts and visions of future of both production and consumption. An example of this would be 'Customization becomes a norm' (Savitz 2012), meaning that a product is personalized to each individual's expectation. Currently, need, appeal and advances in customization are clearly visible in the medical sector, where 3D printed artificial limbs or heart vessels, even organs, are printed based on each patient's individual body structure.

3.2 3D printing and ecological, social and economic sustainability

In general, the 3D printing seems to offer a more sustainable form of manufacturing goods and everyday items in a cleaner and greener way. 3D printing is economically and energetically superior to traditional manufacturing methods due optimized volumes (manufacture for demand), moderate to high structural complexity or when customizing products (Hausman & Horne 2014). The overall manufacturing

process gets shorter with 3D printing too, since there is no need for e.g. casting processes (Conner et al. 2014). 3D printing generates considerably less waste in the manufacturing process compared to alternative methods. Additionally, producing after demand reduces the needs for stocks and storehouses and waste of unsold items (Berman 2012).

3D printing can influence the global transportation system profoundly, for example through rearrangement, reduction and simplification of supply chains, if complex and multi-component products are manufactured in one process. Digital designs would be moving globally instead of components (Wohlers 2009). The efficiency in production and transportation of cargo can increase economical sustainability but on the other hand have considerable influence on social sustainability decreasing needs of labor.

Sustainability of 3D printing in terms of material flows depends on both the feedstock identity and cycling (recycling) of those feedstocks in the system (Fig. 1 and 2). A major challenge for sustainability of 3D printing is that currently the material base consists mainly of non-renewable materials, namely plastics and metals. Commonly used, fossil-based plastics and polymers inflict a relatively high energy cost and climate impact in terms of greenhouse gas emissions. (3D Printing Materials: Free Beginner's Guide 2015; Fig. 1). Acknowledging this, research on bio-based materials is developing rapidly and e.g. common natural biopolymers such as starch, cellulose, chitin, keratin and lignin (Niaounakis 2014) are explored as filament materials (see Fig. 2). These would allow not only waste-raw material transitions, but also waste-feedstock transitions through composting and re-growth. This difference between waste production, possible repurposing and recycling on one hand and re-growing feedstocks on the other is illustrated in figures 1-2 through concepts of "cradle-to-grave" and "cradle-to-cradle", respectively.

Although recycling many types of plastics is technically possible, high costs, insufficient recycling infrastructure and rudimentary coding framework of different polymers restrict current efforts to reduce virgin material need through recycling (Hunt et al. 2015). Economic and technological feasibility of recycling plastic might require new type of centralized infrastructure, such as the current Finnish initiative Uusiomuovi and company Ekokem (Uusiomuovi oy 2016, Ekokem 2016).

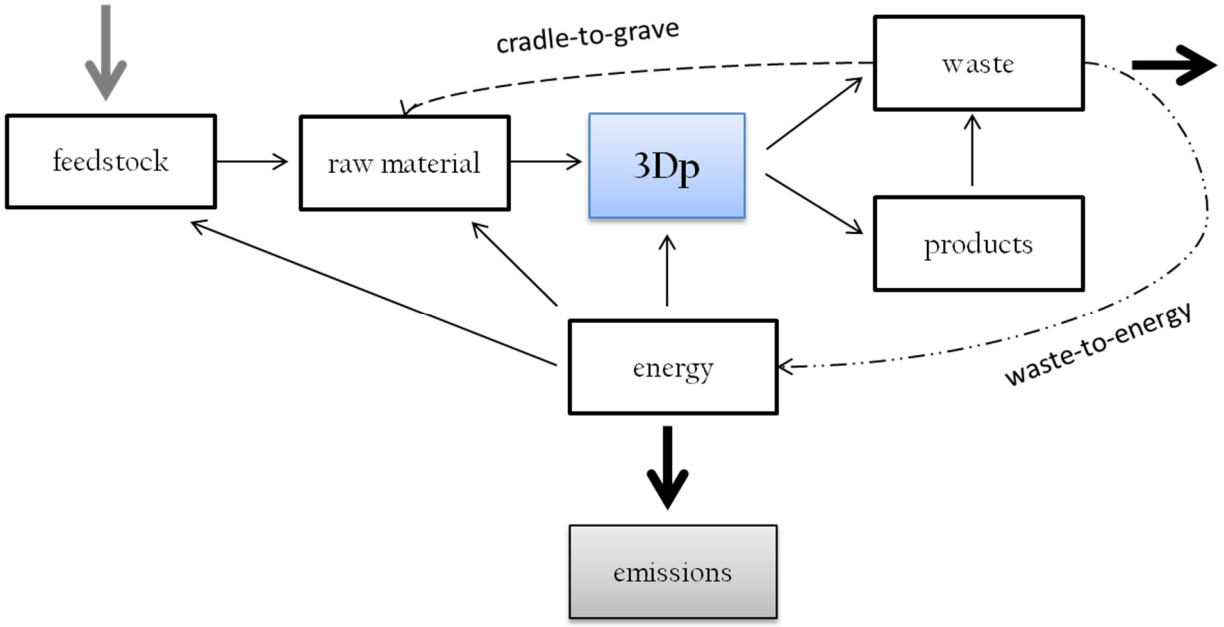

Figure 1: *Conceptual illustration of 3D printing as part of an open-circle material and energy flow framework. Bold arrows denote inputs to and exits from the system: Grey arrow indicates high prevalence of depletable resources in feedstock, and black arrows indicate GHG emissions (energy) and non-biodegradable waste and ecotoxic leaching (waste). Source: Tuomi, M. et al. 2015*

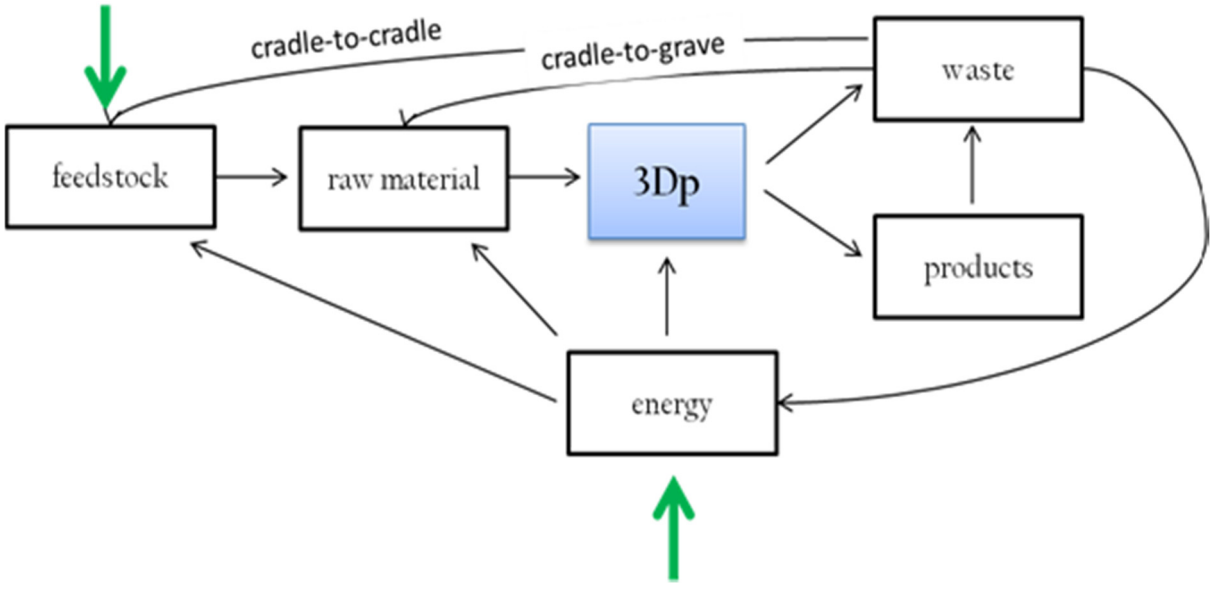

Figure 2. *Conceptual illustration of 3D printing as part of an closed-circle material and energy flow framework. Bold arrows denote inputs to the system: per definition, there are no exits. Green arrows indicates high prevalence of renewable resources in feedstock and energy systems. Source: Tuomi, M. et al. 2015*

As an alternative to the open-circle framework, the closed-circle framework (Fig. 2) of material flows in the context of 3D printing describes how original feedstock can be reused continuously in different forms and in new purposes. As opposed to the open-circle framework that expressed a linear or semi-circular (in terms of the 3R's of reduce, reuse, recycle) model, the closed-circle system will evolve towards eco-effectiveness through the use of cradle-to-cradle flow and circulation of material (Braungart et al. 2007).

For more green 3D printing 1) the printing materials should be made of locally-sourced, non-toxic and recyclable feedstocks, 2) the structural designs used in 3D printing should mimic those found in nature, imparting strength and flexibility with less material and 3) a "take-back" system should be instituted enabling the products to be reconfigured as feedstock". (Biomimicry 3.8 Founder Janine Benyus Says Biomimicry Is the Key to a Green 3D Printing Revolution" 2015) Optimally, combined with higher rates of recycling, production and distribution of commodities 3D printing would become more local, closer to the final consumer and would reduce the carbon footprint considerably (Wohlers 2009).

3D printing can have positive societal impacts on life quality and well-being by contributing innovative applications in various fields such as medicine, household work (e.g. provision of cheap water purification or solar energy) or small-scale farming. In medical sector for instance, 3DP has been implemented to make patterns of crowns and dental aligners (Lipson & Kurman 2013), to generate and transplant needed tissues and organs such as skin, bone, heart tissue and cartilaginous structures (Murphy & Atala 2014, p. 773), to manufacture prosthetic human body parts (i.e. hip, knee) (Lipson & Kurman 2013, p. 13). 3D printing technology enables production of precise body parts that fit into each unique shaped/structured body, helping people suffering from diseases or accidents, cutting down the waiting list for transplantation and even preventing the illegal organ trading in black market (Lipson & Kurman 2013).

In developing countries 3D printing has shown promising possibilities for distributed water purification systems enabling "low costs, ease of use, sustainability, low maintenance and independence of utilities" (Peter-Varbanets et al. 2008, p. 245) Anyhow, the introduction of new technology like 3D printing is socially sustainable only when the imported technology adapts to the local conditions, is adopted by local community and preferably uses locally available raw materials and capabilities (Vazquez-Brust et al. 2014, Gress & Kalafsky 2014, p. 47). With regards to local entrepreneurship and boosting development in poor rural areas, 3D printing may facilitate startups and small and micro enterprises in similar way as with distributed electric grids (Kirubi et al. 2009). For example through local entrepreneurs, 3D printing with open sourced platform is may be able to benefit local livelihoods such as organic farming in rural areas by printing simple and low-cost equipment such as shovels or apple pickers. Another useful utilization of open sourced 3D printing is mobile water quality testing platform in food processing which measures the degree of organic pollution of water. (Wijnen et al. 2014) It is also possible to empower "waste scavengers", to create local small entrepreneurship to produce (Fair Trade) 3D printing filament or small products from waste and so doing offer labor and livelihood (Feeley et al. 2014).

4. Technology and Policy for Sustainable Consumption

4.1 Technology as a driver for sustainable cultural change

According to World Business Council for Sustainable Development it is becoming apparent that efficiency gains and technological advances alone will not be sufficient to bring global consumption to a sustainable level (WBCSD 2008, 5). Past decades have witnessed significant cultural changes that have been a consequence of technological development. For example, television and its development stages have replaced radio, surpassed from black and white one channel version into current digital Internet based variety and choice. The whole realm of digitalization has lead into new cultural forms, for instance by enabling real time communication around the world changing the forms of work, human contact and everyday life.

New technologies, affordable prices and short product life spans have promoted an unsustainable culture especially in form of unsustainable consumption habits. Excessive consumption culture has become common in for example industries of textile and electrical home appliances. Cheap production has replaced and nearly destroyed the culture of repairing because purchasing new items is easier, quicker and even cheaper. Similarly, the constant technology development sustains a high turnover of mobile phones, as the constant development of technology enables new features for consumers and the obsolescence is planned in marketing supporting repeated purchases (Bulow 1986, p. 729).

The two main perspectives of sustainable consumption "weak sustainable consumption" (wSC) and "strong sustainable consumption" (sSC) have nearly opposite attitudes towards technology as solution for sustainability. The wSC perspective is founded on free market optimism and has a strong emphasis on technological solutions, creating greener alternatives of products for consumers to choose. (Lorek & Fuchs 2013, p. 37-38.) In contrast, sSC, according to Lorek & Fuchs (2013, p. 38) aims to create a fundamental change in consumption levels and patterns. A reduction of the overall resource consumption and non-material contributions to wellbeing are emphasized and attention is paid to social structures as communities instead of a single individual consumer. The sSC perspective has strong linkages to ideas of social well-being, justice, and cohesion, as well as non-monetary capital and life-cycle evaluation of ecological and social impacts, and is as such compatible with both de-growth and a-growth schemes (Lorek & Fuchs 2013, p. 36–39). There are several examples of how 3D printing would answer to these demands as will be discussed in chapter 5.

Technology can both promote and prevent emergence of a more sustainable consumption culture. Technology is a mediator, which in itself is neither evil nor good but is interlinked to economic, social and cultural practices. The suggestion by Lorek & Fuchs (2013, p. 38) of striving for the best technological innovations but simultaneously maintaining risk-averse policies sounds reasonable. Most commonly, consumption related problems have been tackled with production-related regulation and policies. Yet, if consumption is seen as the ultimate driver of consumption-production patterns, sustainability policies should address consumption as well, or even instead. (Harlow et al. 2016, p. 294)

4.2 Policy and regulation

> *Sustainable consumption and sustainable lifestyles strategies need to accompany efficiency strategies and could include such sufficiency strategies as e.g. shifting from products to consumption of services and sharing products instead of owning them, utilizing the idling capacity of goods, and promoting a culture of creativity in upcycling and product repair.*
> *- Mont et al. (2013, p. 120).*

Technology is an important driver of change, and it can play a part in transforming cultures and identities, if given the opportunity (e.g. in the case of television, see 4.1.). Yet the ability of disruptive technologies such as 3D printing alone to bring about sustainable lifestyles can be questioned. According to Backhaus and others (2011 p.15), policies combining technological advances and social innovation are necessary to meet goals of lifestyle transformation.

The policy strategies for increased sustainability vary and have had two main paradigms: 1) individualist, stressing the responsibility and behavioral change of individuals and 2) systemic or structural, stressing the responsibility of institutions as states, communities and producer organizations. Multi-approach and multi-stakeholder interventions combining both paradigms are likely to be necessary (Spaargaren 2011). Moreover, merging both top-down and bottom-up forces of change would benefit the aims of both ecological and social sustainability (Spaargaren 2011), such as equity, social cohesion and participation (cf. Murphy 2012). There should be a change in all levels of practices argues Spaargaren (2011 p. 815), from consumption routines in everyday life to practices in the markets, policies and civil society. Additionally, more sustainable practices should be implemented across the different segments of production-consumption chains and networks.

Aspiring perhaps a top-down lead, yet joint perspective approach, Mont et al. (2013, 8) urge governments to lead the shift towards sustainability by creating societal structures that make sustainable living the default option. In order to create sustainable options, innovation in technology and infrastructure, regulation, pricing, marketing and new social norms can be used in combination to create a "sustainable choice architecture". Designing policies for transformations in lifestyles or their aspects, e.g. sustainable consumer behavior and consumption culture, necessitates identification and mapping of key behavioral triggers, motivators and influences (Backhaus et al. 2011, p.10&13, Dessein et al. 2015 "cultural mapping"). This involves identification of underlying social norms as well as key structures ("infrastructure and systems of provision", Backhaus et al 2011, p. 14) of production and consumption. For example, how much of the unsustainable consumer "choices" are made due to lack of tangible or intangible alternatives? Examples include e.g. lack of choice between closed material flows instead of only open ones, or choosing local scale social participation and community "ownership" of production and design instead of global privatization, externalization and homogenization. Cultural and structural understanding would act as source of self-awareness for consumers as well as help identification of leverage points for industry and policy. Creating environments that promote and stimulate behavioral change towards sustainable ways of life that also incorporate local identities and cultural diversity, is clearly a key challenge for devising policies for sustainability (Backhaus et al 2011, p. 13).

National-level taxation, regulation and economic instruments are powerful top-down tools in a market economy, and can be used to achieve goals of sustainability policies as part of multi-level ensemble approaches. Changing mainstream attitudes and consumption patterns requires multi-stakeholder involvement; focus on end-users as well as alignment and combination of various tools from regulation to economics to communication (Harlow et al. 2016). This enables adaptation to cultural and economic

context dependencies and targeting key stakeholder groups. Moreover, without structural adjustments, unsustainable operations and behaviors might be impossible to transform due to existing infrastructure, provisioning and material flows. Changes in policy sector are needed, given that contemporary policies around sustainable lifestyle and consumption have focused strongly on environmental impacts of production and consumption or providing product information, rather than on cultural or "lifestyle" drivers of consumer choices (Backhaus et al. 2011, p. 10). Without addressing root causes and behavioral drivers of western consumption and material flows and their context dependencies, and combining this with understanding of structural "leading lines" and lock-ins, policies are bound to fall short (Backhaus et al 2011, p. 10, 13).

Context dependencies in consumption and lifestyle policies are not only place-specific, but need to heed the needs and material and mental resources of different cohorts and socio-economic groups (Backhaus et al 2011, p. 13). However, consumption patterns are thought to contain "default" settings. Thus, a suggested solution would involve making the sustainable alternative more economically and socially appealing than the old one – or at least not less appealing. This means harnessing the appeal of the "default" option, where the consumer does not need to actively choose in a practice called "nudging" (Harlow et al. 2016, p. 296). Nudging and switching the default alternative is an example of non-coercive and suggestive policies that incentivize sustainable behavior.

5. Discussion: 3D Printing and Sustainable Consumption Culture

The UN Sustainable Development Goals (SDGs) aim at improving living standards of people all around the world. SDG no. 12, sustainable consumption and production, takes on a systemic approach to consumption and production patterns. While it focuses primarily on resource and energy efficiency in production, it also emphasizes multi-stakeholder involvement and education of consumers as well as removal of environmentally harmful subsidies (United Nations 2015). Thus, the rhetoric complies with ideas of strong sustainable consumption, rather than wSC, as well as that of a-growth, or GDP-indifference. Specific aims of the SDG include "substantially reduce waste generation through prevention, reduction, recycling and reuse" by 2030, as well as ensuring that "people everywhere have the relevant information and awareness for sustainable development and lifestyles in harmony with nature". These challenges are shared between developed and developing world. For example, in addition to problems associated with use of non-renewable feedstocks, the aggregate level of municipal waste in Europe has reached 258 million tons per year and waste generation imposes serious environmental impacts, such as methane emissions from landfills, hazardous substances from incineration facilities, land contamination and pollution of ground and open waters with for example pharmaceuticals. (Backhaus et al. 2011, p. 22)

As the SDG aims imply, it is unlikely that the sustainability challenge arising from current production-consumption patterns can be met with approaches consistent only with weak sustainable consumption (Lorek & Fuchs 2011). Nor is it likely that individual responsibility, however much consumers are educated, will suffice, and various policy instruments are necessary. With policy and regulation it is reasonable to support structures assisting sustainability in communities, corporations and organizations, and also help and urge individuals to act in a more sustainable manner.

There are many ways how 3D printing could promote more sustainable consumption whether observed from "weak sustainable consumption perspective" or from "strong sustainable consumption perspective". On one hand, 3D printing meets the ideology and needs of "weak consumption culture"

by offering resource and cost-efficient solutions, and promoting especially local economic growth and startups. It is a cost effective way to create complex products that reduce weight, last longer, and need less assembly. This in turn minimizes energy consumption, GHG emissions and manufacturing costs. (Meyer 2015, p. 35) For example, the possibility of building biomimetic, light-weight but strong complex structures can be used in airplanes to reduce significantly the fuel consumption and operating costs (Aerospace Technology 2015). Energy efficiency can be increased also by 3D printed solar-cells for panels or windows, thermoelectric generators and other "intelligent" construction materials under development (The mind unleashed.org 2015, Digital trends 2015). However, it is worth noting that these applications will not be available for household consumers in the immediate future. Nevertheless, energy efficiency and functional design may play an essential part in competitiveness against other modes of production as the technology will be further developed to answer the needs of consumers. 3D printing and the potential it holds in terms of resource efficiency can act as a mediator towards sustainable consumption culture as consumers want to continue consuming but wish to do so in a more sustainable way. Moreover, 3D printing already has an inbuilt customer and customization focus, and is able to revolutionize e.g. spare part markets enabling longer usage of consumer goods by a longer life cycle thanks to spare parts. In addition, policy instruments and marketing can "nudge" consumers towards accepting more ecological, locally 3D printed products as the new default.

On the other hand, 3D printing has good potential to support "strong sustainable consumption" as well, by e.g. promoting production-on-demand, recycling and use of recycled or bio-based printing material. Various 3D printing technologies and development in materials are starting to allow for reuse of objects as feedstock for new items. Reuse of the material can readily be taken into account when producing items. An interesting example is an American company Lyf Shoes producing shoes by 3D printing: using printed components to make on-demand shoes, the company buys back used shoes for reuse, they have created the first closed loop "cradle-to-cradle" shoe (Lyf Shoes: The Digital Cobbler's Revolution). Another example of 3D printing supporting circular economy is RecycleBot combined with open source 3D printers (e.g. RepRap), which enables recycling of plastics at home to produce filament for 3D printing (Baechler el al. 2013).

Some examples how official solutions could promote sustainability in the case of 3D printing are support of recycling structures in communities and a development of effective separation system for polymers, either through coding (Hunt et al, 2015) or use of spectroscopy. With this, local entrepreneurship could be encouraged to collect waste and produce filament or new products from it. This could promote circular economy where the filament materials, production, consumption and waste would all circle locally and at the same time offer labor and livelihood for local people. (Feeley et al 2014.) However, if 3D printers become common equipments in households before the recycling of printing materials and/or bio-based materials becomes the norm there is a great danger that unsustainable consumption patterns together with 3D printing would increase waste and excessive material production. In addition, 3D printing may also threaten the handicraft professions and associated cultural values and evidently changes the professional design practices. From the perspective of cultural evolution however, 3D printing might also act as a vessel for transferring the cultural know-how of handicrafts and artwork to the new generations with ways that have not been possible before. This part of culture, sustainability and the possibilities of 3D printing should not be ignored.

All in all, 3D printing holds a great possibility to be used as means for cultural sustainability when cultural sustainability is understood in a holistic way - the sustainability practices should penetrate the

whole society as integrated part of culture. (Spaargaren 2011) 3D printing enables wide re-use of materials, more efficient use of materials, and different, innovative solutions for both every day and more luxurious goods. A critical factor for increased sustainability is the possibility to re-use different types of (waste) materials, to reach circular material flows and energy efficiency in production and during the entire product life-cycle. Otherwise there is a great danger the 3D printing ends up being a way to create more unnecessary, fossil-based material. Fortunately, in our view, a weak signal towards green awareness and focus towards ecological sustainability among 3D printing industry and innovators exists.

We find that 3D printing can play a role in promoting sustainable consumption, either one that is founded on premises of technological optimism and market liberalism, or one that takes a holistic social-environmental approach to human well-being and planetary health, beyond economic growth. Regardless of the chosen perspective, 3D printing can act as a mediator of increased energy and material efficiency in production, and thus contribute to sustainable consumer culture with help of policy and regulation. Adopting ideas presented in SDG 12 and the strong sustainable consumption perspective, novel technologies or free market forces will, however, be not enough for reaching ecological or social sustainability. Instead, a systemic approach and multi-stakeholder initiatives consistent with ideas of cultural transformation (culture as sustainability, Soini & Dessein 2016) are called for. In this context, 3D printing as disruptive technology with booming R&D activities and potential to support local closed material cycles, has a potential to create entirely new modes of production and consumption. With 3D printing combined with a change in consumption culture and appropriate policy measures, customized on-demand production using local, biological or recycled materials could challenge rampant mass-production of non-necessary items, focus on ownership and eventually Western materialism.

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TUTU2 TULEVAISUUDENTUTKIMUKSEN PERUSTEET

TUTU2 Tulevaisuudentutkimuksen perusteet -opintojakson (5 op) hyväksytysti suoritettuaan opiskelija ymmärtää tulevaisuustiedon ainutlaatuisuuden ja siitä johtuvan filosofisen perustan ja tieteelliset lähtökohdat (mm. systeemi-ontologia, holistisuus, normatiivisuus ja arvot) sekä tunnistaa oppiaineen historialliset merkkipaalut ja eri aikakausien tavat hahmottaa tulevaisuutta sekä tiedonalan omat menetelmät ja keskeiset teoriat. Lisäksi opiskelija on tutustunut tulevaisuudentutkimuksen tehtäviin ja merkitykseen yhteiskunnassa.

Tulevaisuudentutkimuksen 25 op:n suomenkielisestä sivuaineesta on tähän kokoelmaan valittu kahdelta opintojaksolta kolme esimerkkiharjoitusta. TUTU2-jakson esseet on arvioinut Tulevaisuudentutkimuksen Verkostoakatemian koordinaattori Sari Söderlund.

Rami Kangas

Esseessä opiskelija on oivaltanut tulevaisuudentutkimuksen erityispiirteet, joista kumpuaa selkeä tarkastelun kohde (tutkimuskysymys). Sisältö hyödyntää taitavasti opiskelijan historian ja digitalisaation osaamista pureutuen Bellin tulevaisuudentutkimuksen tehtäviin syvällisen ymmärtävästi. Lopuksi digitalisaation arvoväittämä viedään Keekok Leen "mankelin" läpi. Historia, tulevaisuudentutkimus ja digitalisaatio kytkeytyvät toisiinsa harvinaisen taitavasti. Tulevaisuudentutkimuksen ja digitalisaation yhtymäkohtia ja eroja etsitään syvältä tarkoitus- ja tehtävämaailmasta. Aiheen käsittelyä siivittävät tieteen kritiikki ja pohdiskelevat kysymykset, ja sisältö antaa lukijalle runsaasti ajattelun aineksia.

Kati Pitkänen

Esseessä opiskelija vertailee kahden tieteenalan – tulevaisuudentutkimuksen ja kasvatustieteen – suhtautumista arvoihin ja arvottamiseen. Viitekehyksenä on tulevaisuudentutkimuksen Keekok Leen epistemisen implikaation malli, jonka mukaan arvot on mahdollista asettaa kriittisen tarkastelun kohteeksi. Aihevalinta on rohkea ja haasteellinen. Sisältö on teoreettinen ja lauseet tarkkaan harkittuja. Lopputulos on onnistunut kuvaus tulevaisuudentutkimuksen erityispiirteistä tieteenalan kenties kiistellymmällä aihe-alueella: suhtautumisessa arvoihin.

Digitalisaatio ja tulevaisuudentutkijan ammattietiikka – Tulevaisuudentutkijan rooli ja vastuu digitalisaation aiheuttamissa kulttuurisissa muutoksissa

Rami Kangas
Turun yliopisto, avoin yliopisto

1. Johdanto

Todellisuuden pohtiminen on moniulotteista. Kuitenkin perinteiset tieteet ovat luonteeltaan yhteen asiaan keskittyviä ja syventyviä. Luonnontieteissä piirre korostuu, mutta pitää paikkansa myös humanistisissa tieteissä, kuten historiantutkimuksessa. Historia on tulevaisuudentutkimuksen ohella tiede, jota on tietyistä lähtökohdista vaikea aina edes mieltää tieteeksi. Kummatkin pitävät sisällään tarvittavia elementtejä tieteistä ja taiteista, jotka auttavat mielekkään kokonaisuuden, tarinan tai narratiivin luomiseen. Kumpaakin yhdistää kuitenkin tieteelle ominainen painotus puhua totta, tai vähintään pyrkimys siihen.

Tulevaisuudentutkimus on kuitenkin oma lajinsa. Se yhdistelee asioita, käyttää monitieteisesti hyväkseen erilaisia metodeja, ja koettaa synnyttää tulevaisuudesta erilaisia vaihtelevia näkemyksiä, joita useimmiten kutsutaan skenaarioiksi. Ne eivät ole varsinaisia ennusteita, pikemminkin malleja tulevaisuuksista jotka ovat jollain tavoin mahdollisia, toivottavia tai todennäköisiä. Tulevaisuudentutkimus on siis moniulotteista, ja sellaiseksi se on tutkimusperinteenä vuosien myötä myös kehkeytynyt.

Tämän kirjoituksen pohjavireenä kulkee kolme asiaa: kirjoittajan ajatukselliset lähtökohdat historioitsijana ja ajan tarkkailijana, toisaalta Wendell Bellin kaksiosaisen perusteoksen (Bell, vol 1 ja 2) käyttäminen ajatuksellisena inspiraationa sekä digitalisaation tuomat haasteet ajan ymmärtämiselle nyt ja jatkossa. Tarkoitus on pohtia ja asettaa kysymyksiä tulevaisuudentutkijan roolista ja eettisestä vastuusta suhteessa digitalisaation tuomiin haasteisiin. Ennen kaikkea tämän tekstin keskeisin kysymys on: mikä on tulevaisuudentutkijan vastuu, kun puhutaan digitalisaatiosta?

Historioitsijan lähtökohdat

Kasvoin koulukuntaan ja ajatusmaailmaan, jossa vielä näkyi osittain saksalaisen perinteen mukainen historismi. Comtelainen positivismi nähtiin vieraana ja liian systemaattisena ymmärrysmekanismina, joka ei pystynyt tavoittamaan kullekin ajalle omimaisia, historiasta lähtöisin olevia piirteitä. Samaan aikaan tuli uutena käsitteenä mikrohistoria, joka alkoi kartoittaa aktiivisesti arkeen kuuluvia tapahtumia, tavallisten ihmisten historioita. Voi kuulostaa itsestäänselvyydeltä nyt, mutta vielä 1990-luvun alussa historiat olivat suurmaiden, kansallisvaltioiden ja voittajien sekä suurten tapahtumien ja käänteiden historioita. Suuria tarinoita. Arjen pieniä kuvauksia isossa mittakaavassa vasta aloiteltiin.

Nykyvalossa historismin perintö voidaan tulkita hyvinkin relativistiseksi tavaksi ymmärtää – tai olla ymmärtämättä jotain tiettyä aikaa. Suosittua olikin puida asioita gadamerilaisittain hermeneutiikan näkökulmista ja pohtia todellisuuksia dialektisina suhteina. Aika suhteutettiin nykyhetkeen, mutta pääosin peilaten menneeseen. Toki nykyisyys muistettiin jakaa kolmeen; menneeseen, nykyhetkeen ja tulevaan,

kirkkoisä Augustinusta mukaillen. Sisäänrakennettuna tässä voidaan havaita kristillis-teologinen lineaarisuus, joka yleensä on kaltaisilleni, ja tätä kulttuuriperimää edustaville, kovalevylle valmiiksi asennettuna.

Bellin vaikutus

Tuossa samassa ajassa, 1990-loppupuolella amerikkalainen sosiologi Wendell Bell julkaisi, nyttemmin klassikon asemaan nousseen kaksiosaisen Foundations of Futures Studies -kirjan, jossa hän käsittelee tulevaisuuden tutkimusta sen historiasta, tarkoituksista ja tietoteoreettista (vol.1) kuin arvoista ja hyvän yhteiskunnan puolesta tehtävien tutkimusten puolesta (vol.2). Leimaavinta Bellin ajatuksille on tulevaisuudentutkimuksen luonne paitsi osallistuvana, myös vahvasti arvosidonnaisena tieteenlajina. Bellin arvot korostavat tutkimusta, joka edistää vapautta, kestävää kehitystä ja hyvinvointia – myös tuleville sukupolville, koko maapallon tasolla. Hän halusi myös laajentaa Harold Lasswellin näkemystä tulevaisuuden viisjaosta yhdeksään perustehtävään: 1) Mahdollisten tulevaisuuksien tutkimukseen, 2) todennäköisten tulevaisuuksien tutkimukseen, 3) tulevaisuudenkuvien tutkimukseen, 4) tulevaisuudentutkimuksen tiedollisten perusteiden tutkimukseen, 5) eettisten perusteiden tutkimukseen, 6) menneen tulkintaan ja tulevaisuuteen orientoitumiseen, 7) tiedon ja arvojen yhdistämiseen sosiaalisen toiminnan suunnittelussa, 8) demokraattisen osallistumisen lisäämiseen tulevaisuuden hahmottamisessa ja suunnittelussa sekä viimeisenä 9) erityisen tulevaisuuskuvan kommunikointiin ja edistämiseen (Bell 2003, 75–97, 111). Näiden yhteinen nimittäjä on prospective thinking – suomeksi muotoiltuna se tarkoittaa tulevaisuuden luotaamista, ei niinkään tulevaisuuden tietämistä. Luotaamiselle on ominaista oman toiminnan vastuullisuus ja suunnittelu tieteellisen tutkimuksen avulla.

Tulevaisuudentutkimuksen tehtävien ohella Bell kehitti yhdeksän olettamuksen joukon, jonka taustalla on ajatus meistä ihmisistä aikakoneen matkustajina. Ensimmäiseksi Bell nostaa ajatuksen ajan tarkoituksesta ja luonteesta lineaarisena jatkumona, joka on peruuttamaton ja yhdensuuntainen. Toisena nousee singulariteetin ajatus, joka pitää sisällään ajatuksen siitä, että tulevaisuudessa voi esiintyä jotain, jota ei ole aiemmin esiintynyt. Historioitsijalle ajatus voi olla outo, mutta tulevaisuuteen liittyen moni asia joka tapauksessa on. Kolmas olettamus liittyy tulevaisuuden aktiiviseen luonteeseen: tulevaisuuden pohtiminen ja suunnittelu kun ovat ihmiselle ominaista. Neljäs ominaisuus tiivistyy tulevaisuustiedon hyödyllisyyteen. Viides puolestaan faktoihin. Toisaalta, miten saada faktoja asioista, jotka eivät vielä ole tapahtuneet, ruumiillistuneet? Arvausperäiseen tietoon, vastaa Bell. Tulevaisuus on avoin, on kuudes kohta. Sen ydinsisältö on arvoviritteinen, ja sen avoimuus koostuu vapaudesta, toivosta ja toteutumattomista unelmista. Seitsemäs kohta muistuttaa, että tulevaisuuden tekevät paitsi systeemit ja odotukset, niin ihmiset itse. Koska ihmiset ja jopa systeemit ovat keskinäisesti riippuvaisia, siitä seuraa jonkinlainen holismi. Bellin viimeinen erikseen määritelty kohta muistuttaa jälleen paremmasta huomisesta, ja alleviivaa hänen arvolatautuneisuuttaan tulevaisuutta tarkasteltaessa. (Bell 2003, 162–163.)

Digitalisaation dilemma

Kukaan ei voi välttyä d-sanalta. Se on aiheena joka toisessa kolumnissa, blogissa tai sosiaalisen median business-parahduksessa. Sen varaan lasketaan ainakin retorisella tasolla koko Suomen tulevaisuus aina terveydenhoidon järjestelmistä uusiin luoviin liiketoimintoihin ja sosiaalisten suhteiden ylläpitoon.

Valtiovarainministeriö on ottanut digitalisaation yhdeksi ydinhankkeistaan. Näin se määrittyy: "Digitalisaatio on sekä toimintatapojen uudistamista, sisäisten prosessien digitalisointia että palveluiden sähköistämistä. Kyse on isosta oivalluksesta, miten omaa toimintaa voidaan muuttaa jopa radikaalisti toisenlaiseksi tietotekniikan avulla. Käyttäjälähtöisyys on olennainen osa digitalisaatiota. Hallintoa on kehitettävä asiakkaan näkökulmasta, oli sitten kyse ulkoisesta tai sisäisestä asiakkaasta. Käyttäjälähtöiset digitaaliset julkiset palvelut ovat myös Suomen kilpailukyvyn edellytys."(http://vm.fi/digitalisaatio).

Digitalisaation tehtävä on siis auttaa, tehostaa ja tehdä prosesseista mielekkäämpiä. Digitalisaatio kuitenkin usein mielletään uudeksi tavaksi digitoida vanha analoginen prosessi. Siitä ei kuitenkaan ole kyse: digitaalisuus tuo mukanaan kosolti uutta pohdittavaa – parhaiten digitalisointi sujuu, kun prosessit suunnitellaan lähtökohdiltaan puhtaalta pöydältä. Jos tehdään vain siirtymä analogisista prosesseista digitaalisuuksiin voi käydä hassusti. Erinomaisia esimerkkejä kulttuurin puolelta ovat esimerkiksi musiikki- ja mediateollisuus. Digitaalisten jakelutapojen ja kulutuskäyttäytymisten myötä perinteiset tulonlähteet hävisivät alta ja ansaintamekanismit pitikin miettiä kokonaan uusiksi. Media ei ole siinä oikein onnistunut vieläkään. Siksi puhutaan murroksesta, näivettymisestä ja romahduksesta. Digitaalisia medioita kuitenkin kulutetaan enemmän kuin koskaan. Kuinka monta skenaarioita näistä ymmärrettiin aikoinaan tehdä?

Digitaalisuus on kuitenkin yleisesti ottaen helpottanut lukuisia asioita, joista yksi merkittävimpiä on Internetin vaikutus ja tiedon saanti, ja sitä myötä demokratian, ainakin näennäinen, mahdollisuus levitä uusien ihmisryhmien tietoisuuteen. Mutta esiin on nostettu myös uhkia: olemmeko miettineet esimerkiksi digitaalisaation vaikutuksista kulttuuriin ja sen monipuoliseen kehittymiseen?

2. Kun kulttuuri muuttuu eli miten käsitellä digitalisaatiota

Digitalisaatio itsessään on jo jonkinlainen viesti. Tai vähintään käänteisesti niin päin, että jos joku asia ei ole digitaalinen, on sekin viesti: taantumuksellisuus, suvaitsemattomuus ja tahallinen jarruna oleminen kätkeytyy ainakin orastavasti siihen, mistä välineestä luen uutiseni tai romaanini. Jos haluat kuulua edistyksen joukkoon, tee se digitaalisesti, kuulu päivän manifesti. Kanadalainen informaatiofilosofi ja mediatutkija Marshall McLuhan tuli kuuluisaksi väline on viesti -sanomastaan, jolla hän viittasi medioiden sisältöjen vähempään merkitykseen kuin itse välineen vaikutukseen. McLuhan on monesti tyrmätty, mutta edelleen välineellä on merkitystä. McLuhanin mielestä ihmiset ovat aina viehättyneet oman itsensä laajentumista, jotka ovat muuta materiaalia kuin he itse. (McLuhan 1984, 68–69). Mitä siis ovatkaan ne digitaaliset laajentumat, joita edustavat nykyisin niin softa- kuin rautapuolenkin edustajat (software-hardware). Tämän syksyn kovimpia villityksiä on ollut sosiaalisen median sovelluksista raw stream -livevideoita tukeva Periscope, ja toisaalta Oculus-maskit, joilla voi katsoa 360-asteisia videoita virtuaalisessa, lähes hallusinatorisessa tilassa.

Yhdysvalloissa keskustelu digitalisaatiosta on ottanut jo askeleen huolestumista kohti, kertoi digitaalisen työn asiantuntija Esko Kilpi eräässä tilaisuudessa. Automaatio, robotiikka ja varsinkin keinoäly aiheuttavat epätietoisuutta. Singulariteetin aikakautta lasketaan jo lähivuosissa. Singulariteetilla tarkoitetaan tässä kontekstissa tilaa, jossa laskentatehon mahdollistama tekoäly on mennyt ohi ihmiskunnan teknologisen kehityksen ja sosiaaliset muutokset ovat lähteneet lapasesta. Tulevaisuudentutkimuksen kannalta se tarkoittaa sitä, että ihmiset eivät enää kykene ymmärtämään tai ennakoimaan tulevaisuuksia. Tässä avautuu jälleen eettinen aukko tulevaisuudentutkijalle: voidaanko digitaalisia prosesseja ennakoida paremmin ja mitä ne tarkoittavat kulttuurisista lähtökohdista?

Jos ja kun valitsemme tiennäyttäjäksemme Wendell Bellin, valitsemme toivon ja ihmisyyden. Digitalisaatiossa voidaankin valita keskiöön ihminen järjestelmänäkökulman asemesta, ja rakentaa digitalisaatiosta ihmisennäköinen ja ihmiskeskeinen prosessi. Silloin laskentatehosta tulee assistenttimme, dokumenttikeskeisyys vaihtuu access-ajatteluun ja inhimilliset epärationaalisuudet saavat laskentatehosta kaiken tarvittavan avun. Laskentateho antaa siis meille teoreettisesti enemmän mahdollisuuksia reagoida mahdollisuuksiin. Ihmisnäkökulmaa tässä edustaa se, että teknologia ei enää sanelekaan tulevaisuutta, vaan uudet mahdollisuudet tulevat paremmin näkyviksi.

Edellinen oli kenties ajatelmia lähitulevaisuudesta, mutta miten on digitaalisuuden laita tänään? Digitaalisuuden yksi keskeinen muoto ja todellisuus on big data. Se on kaikista digitaalisista toimistamme jättämämme jälki: käyntimme Facebookissa, hakumme Googlessa, käyttämämme digipohjaiset laitteet ja niiden antureiden piirtämät kuviot, lenkkeilysoftat ja tietomme valtiollisissa järjestelmissä ja rahamme pankissa. Big data on siis eräänlainen jättimäinen kartta, joka ei kuitenkaan johda minnekään. Uusimissa keskusteluissa korostetaankin polkujen ja toimintaohjeiden merkityksiä. Näitä kutsutaan algoritmeiksi. Niihin perustuvat musiikkipalvelut, sosiaaliset mediat ja verkkokaupat. Tähän sisältyy kuitenkin uhka ja kulttuurinen haaste. Ihmiset ovat osittain tiedostamattaan algoritmiensä vankeja. Ovatko valinnat siis enää vapaita? Saako ihminen jatkossa vain sitä "mikä häntä kiinnostaa"? Väistämättä ajaudutaan tilanteeseen, jossa ihmisille tarjotut sisällöt ovat rajoittuneita, ja joiden takana on useimmiten jonkun tahon intressi. Kuka datan omistaa? Kuka siis päättää, mitä kukin haluaa, onko tämä digitalisaation piirre uhka demokratialle? Tästä samasta valmiiksi ajateltujen polkujen piirteestä oli huolissaan myös Bell, kun hän nostaa esiin rinnakkain fasismin ja tulevaisuudentutkimuksen: voiko liian pitkällinen kollektiivinen suunnittelu johtaa oikeasti epäluonnollisiin ja vapautta riistäviin malleihin? (Bell 2003, 107). Fasismilla viitataan tässä autoritäärisyyteen, joka yhdistyy korporatiiviseen järjestelmään. Väistämättä tulee mieleen ylisuuriksi kasvaneet verkkoyhtiöt, jotka käytännössä sanelevat elintapamme. Uhka moniääniselle vapaalle kulttuurille? Epäilemättä.

Big data on toisaalta avannut myös kokonaan uusia tieteenaloja, jotka käyttävät hyväkseen dataa. Koska digitaalista dataa on saatavilla paljon, muodostuu havaintojoukoista jättimäisiä kokonaisuuksia. Näistä joukoista voidaan tulkita aivan uudenlaisia kuvia ja käsityksiä sosiaalisen ympäristön tapahtumista. Tätä kutsutaan sosiaalifysiikaksi. Yksi havainto liittyy sosiaalisten suhteiden ja tiedon luotettavuuteen – asia, joka askarruttaa digitaalispainotteisen infotulvan aikana. Sosiaalifysikaalisesta näkökulmasta lisääntynyt luottamus tuottaa enemmän ideoita ja parempaa tuottavuutta. (Pentland 2014, 116).

Historiattomuus luo visiottomuutta

Historiattomuuden tunnetuin siteerauskohde on pitkään ollut Francis Fukuyama. Hänen kuuluisa historian loppu viittasi postmodernin todellisuuden stabiliteettiin demokratian voittaessa ja hallitessa. Tapahtumille jätettiin toki merkitys jatkossakin, mutta demokratia voittaneena järjestelmänä asetti ajalle uudenlaisen muodon. (Fukuyama 1992, 9). Samaa ajatusta voisi piirtää myös analogisuuden ja digitalisaation suhteesta. Onko digitalisaatio kuin demokratia, joka on toimivampana järjestelmänä ajanut voittoon ja muuttanut aikaa demokratian tavoin tilaksi, joka ei olekaan enää samaan tapaan lineaarinen, vaan tapahtumista koostuva tila? Ei kovin belliläinen eikä kovin toivoa herättävä ajatus, mutta sitä voisi tovin pohtia.

Digitaalisuuden yksi piirre on sen kontekstia kunnioittamaton perusluonne. Koska kaikki tieto säilyy, voidaan vuosienkin takaisia asioita nostaa yllättäen esiin ja siirtää ne arvaamattomiin ja yllätyksellisiin konteksteihin. Itse jäljet voivat olla muuttumattomia: kuvan ja äänen laatu ovat digitaalisessa muodossa helpostikin muuttumattomia, ja kun varsinaista alkuperäisteosta ei käytännössä ole, on toisintamisella

käytännössä sama rooli kuin alkuperäishetkelläkin. Vain alkuperäinen konteksti ja sen tunnetila on joskus ollut merkityksellisempi kuin toinen. Huolestuttavia piirteitä tällä asialla alkaa olla silloin, kun kontekstiin nostettavat asiat aiheuttavat ongelmia - tai jos jo sovitetut rikkeet nostetaan yhä uudelleen esiin. Muistin hataruuden armahtavaa voimaa ei digitodellisuudessa ole. Myös ymmärrys menneestä alkaa hämärtyä kontekstien muuttuessa. Voidaanko sellaisessa tilassa suunnitella tulevaa?

Edellinen on ollut omiaan luomaan uusia ajattelutapoja ja selviytymiskeinoja. Digitalisaatioon leimallisesti kuuluvia ilmiöitä ovat läpinäkyvyys ja rehellisyys. Vain rehelliset verkkokaupat menestyvät, sanotaan. Vain läpinäkyvät bloggaajat menestyvät ja heitä luetaan. Digitaalisesti ajattelevat organisaatiot vannovat läpinäkyvyyden nimiin. Jeff Jarvis listaa yksityisyyden ja julkisen eettisiä piirteitä: älä varasta informaatiota, ole läpinäkyvä siinä, mitä teet tiedolla ja suojele sitä; anna tunnustusta niille, joille se kuuluu. Salli ihmisille pääsy tietoihin, joihin heillä on oikeus, äläkä käytä saamaasi tietoa ihmisiä vastaan; konteksteilla ja motiiveilla on merkitystä, arvon lisäämisestä puhumattakaan. (Jarvis 2011, 111–112). Mutta tämäkin ajattelumuoto on ollut viime aikoina uhattuna. Infotulva ja sen myötä disinformaation määrä on lisääntynyt voimakkaasti. Mukaan ovat tulleet systemaattiset väärän tiedon levittäjät, niin kutsutut trollit. Olisko Jarvisin läpinäkyvyyden toimintamalli sittenkin vain ohimenevä digitalisaation vaihe?

Tulevaisuudentutkijan eettiset valinnat kulttuurin muutoksessa

Tulevaisuudentutkimus on kaikesta huolimatta toiveikas laji. Ainakin, mikäli on uskominen Wendell Belliä. Yksi keino selättää historiattomuuden kokemukset ja ajalliset tyhjiöt, on luoda kuva tulevaisuudesta tässä hetkessä. Se kertoo paitsi omasta ajastamme, myös todellisesta pluraliteetista, joka vallitsee. (van der Duin 2007/Voros 73). Tällä viitataan myös Bellin ajatuksiin mahdollisiin ja haluttaviin tulevaisuuksiin nimenomaan tässä ajassa. Tulevaisuuskuvan luominen on paitsi toivoa luovaa, myös vastuullista toimintaa.

Nykyisyyden ymmärtäminen on vastuullista, koska kuvat tulevasta pitää ottaa ainakin tieteellisessä mielessä vakavasti ja vastuullisesti. Tieteellisyydellä viitataan tässä myös ammatillisuuteen. Bell muistuttaa, että kaikenlaisiin ammatillisuuksiin ja professioihin kuuluu erilaisia eettisyyksiä, kuten Hippokrateen vala lääkäreillä, vaitiolovelvollisuudet juristeilla ja psykologeilla ja niin edelleen. Varsinkin tulevaisuudentutkijoihin kuuluu jo sen monitieteisyyden nimissä monia erilaisten professioiden edustajia, joten eettiset kysymykset on syytä käydä läpi.

Yleisimpinä ja helppoina arvoina voidaan nostaa rehellisyyden, kunnioituksen ja luotettavuuden vaateet, mitkä ovat minkä tahansa tiedettä tekevän yhteisön perusedellytyksiä. Bell myös muistuttaa eettisyyspohdinnoissaan tulevaisuudentutkijan tehtävästä yleisen hyvän ja kestävän kehityksen edistämiseksi aina tulevien sukupolvien puolesta. (Bell 2004, 158–159).

Konsultatiivisille ja tulevaisuustiedon kaupallistaville tulevaisuudentutkijoille ja tahoille Bellillä on tarjota muutama varoituksen sana, koska silloin on vaarana ajautua hakoteille. Hän varoittaa ajamasta omaa etua asiakkaan tai tilaajan edun ohi. Jos tutkimustyö tehdään huolimattomasti tai puutteellisesti valmistautuen, voidaan keskittyä vääriin asioihin ja ajautua huonoihin lopputulemiin. Tietoa ei myöskään pitäisi pantata, eikä varsinkaan käyttää sitä tilaajaa vastaan. Tulevaisuudentutkija voi myös ajautua tilanteisiin, jossa hän tulee paljastaneeksi jonkin tuotteen kärsimystä ja tuskaa aiheuttavan luonteen. Bell tarjoaa yhdeksi keinoksi terveen skeptisyyden. (Bell 2004, 166).

Mikä on siis tulevaisuudentutkijan eettinen latautuneisuus ja riittävän skeptisyyden määrä digitalisaation haasteen edessä? Onko tulevaisuudentutkijalla riittävä uskottavuus, jotta hän voi ylittää kirkasotsaiset ja liian lyhyen aikavälin vaikutukset digitalisaation kulttuurisissa kysymyksissä? Mielestäni on. Ja belliläisittäin tulevaisuudentutkijalla on tässä aktiivinen rooli.

3. Näkemykset ja toimenpiteet

Koska alussa määrittelin itseni historiallisista lähtökohdista ponnistavaksi toimijaksi, joka tässä kontekstissa tukeutuu Bellin oppeihin digitalisaation aiheuttamia eettisiä haasteita pohtiessa, päädyn seuraavaan. Tulevaisuudentutkimus ei ole arvoista vapaata tiedettä. Siihen liittyy hyvän ja toden palveleminen (Bell 2004, 319). Digitalisaatiota on syytä tarkastella skeptisesti, mutta muistaa myös sen tarjoamat mahdollisuudet. Digitalisaation penetroituessa mitä moninaisimpiin prosesseihin, on skenaariotyötä syytä tehdä paljon. Se on suorastaan eettinen velvollisuus.

Tehdään lopuksi vielä testi. Otetaan digitalisaatioon liittyvä arvoväittämä ja heitetään se Bellin arvostaman ja parhaaksi pitämän Keekok Leen episteemisen implikaation mallin läpi ja katsotaan mitä tapahtuu.

Keekok Leen mukaan tieteellinen todentaminen eli falsifiointi perustuu viiteen vaiheeseen, joissa testataan arvoväittämän taustalla olevaa tietoa ja sen perusteluita. Arvolauseita voi arvioida seuraaavasti: 1) arvolauseen tulee olla objektiivisesti varteenotettava, 2) arvolauseen perustelujen tulee olla viittauksellisesti merkityksellisiä, 3) arvolauseen tulee olla kausaalisesti relevantti, 4) arvolauseen tulee olla kausaalisesti itsenäinen ja 5) arvolauseen väittämä tulee voida testata empiirisesti. Lisäksi sen on oltava objektiivisesti varteenotettava. (Bell 2004, 87-91).

"Digitaalisuus muuttaa tuntemamme länsimaisen kulttuurin perusteita."

1. Lause on objektiivisesti varteenotettava, koska olen edellä esittänyt digitaalisaation keskeisiä, yleisesti tunnettuja ominaispiirteitä. Kulttuuri on käsitteenä moninainen, mutta voimme paikantaa sen keskeiset piirteet
2. Digitaalisuus muuttaa kulttuuria, jonka fundamentit ovat lähtöisin analogisesta perinteestä
3. Digitaalisuus muuttaa kulttuuria, koska sen vaikutukset ovat erilaisia kuin analogiset prosessit
4. Länsimaisen kulttuurin perusteet muuttavat digitalisaatiota ei päde, koska digitaalisuus lähtökohdiltaan teknologinen ilmiö
5. Digitaalisuus voidaan todentaa (teknillis)tieteellisesti. Kulttuuri tai länsimainen kulttuuri on jo vaikeampi kokonaiskäsite, mutta tieteen nimissä sen voi rajata käsittämään tiettyjä alueellisia kulttuureita tai konventioita

Koska väittämä näyttää menevän myös Keekok Leen mankelin läpi, voidaan esittää jatkotoimenpiteitä. Digitalisaation osalta tulevaisuudentutkijan on otettava aktiivinen rooli eettisenä toimijana ja viedä eteenpäin Wendell Bellin missiota kohti haluttua tulevaisuutta.

Mikä haluttu todellisuus sitten on? Mielestäni tulevaisuudentutkimuksella voidaan osoittaa digitaalisuuden positiiviset vaikutukset kulttuurisiin muutoksiin, mutta samalla voidaan esittää ne kehityspolut, jotka eivät edistä esimerkiksi demokratiaa tai jotka eivät vie ihmisyyttä eteenpäin. Datan käyttäminen väärin, totuuden manipulointi on helpompaa kuin koskaan, mutta samalla luotettavuus ja läpinäkyvyys edistävät luovuutta ja menestystä. Vaikka digitalisaatio on lähtökohdiltaan teknologinen prosessi, se voidaan valjastaa inhimillisiin tarpeisiin ottamalla huomioon sen perustat ja luonne. Tässä tulevaisuudentutkimuksella ja ammattietiikalla on keskeinen rooli.

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Keekok Leen episteemisen implikaation malli

Kati Pitkänen
Oulun yliopisto, Kasvatustieteiden tiedekunta

1. Johdanto

Tässä esseessä käsitellään filosofi Keekok Leen episteemisen implikaation mallia Wendell Bellin kuvaamana. Mallia peilataan niihin tieteenteoreettisiin ja tieteenfilosofisiin periaatteisiin, joihin olen törmännyt kasvatustieteen opinnoissani. Leen mallissa on kyse arvoja ilmaisevien väitteiden kytköksistä todellisuuteen, jonka avulla arvojen hyväksyttävyyttä on mahdollista arvioida. Sekä filosofiassa että yhteiskuntatieteissä on nähty tarpeelliseksi tuoda arvoarvostelmia objektiivisen, kriittisen keskusten kohteeksi, esimerkiksi pelkän keino-päämäärämalliin pohjautuvan, arvolauseen ja sen perustelun välisen analyysin sijaan. Kasvatustieteelliset yhteydet löytyvät kriittisen realisimin ja yleisemmin empiiris-analyyttisen kasvatustieteen kentästä.

Arvo voidaan nähdä konkreettisista arvostuksista johdettuna ideaalina. Yksilön näkökulmasta arvo on symboli, joka määrittää käyttäytymistä, valintoja ja arviointeja erilaisissa tilanteissa ja päätöksenteossa. Yhteiskunnan näkökulmasta arvot voidaan nähdä yhteisöjen toimintaa yhdenmukaistavina ja niiden säilymistä turvaavina tekijöinä. Arvo voidaan nähdä myös suhdekäsitteenä, joka määrittelee aina jonkin paremmuusjärjestyksen. Arvoarvostelma on siten arvostusta ilmaiseva, jonkin asian arvottava lause. Normi puolestaan on säännön, käskyn, kiellon, suosituksen tai vaatimuksen esittävä toimintaohje, joka määrittelee mikä on kiellettyä, sallittua, suositeltavaa tai vaadittua. (Siljander 1991; Nurmi 1995; Rubin 2005.)

Arvoteoriat ovat tulevaisuudentutkimuksen perustana erittäin merkityksellisessä asemassa. Tulevaisuudentutkimus on yhteiskunnallisen muutoksen arvorationaalisten visioiden luomista sekä uusien, erilaisten tulevaisuuden vaihtoehtojen, uhkien ja mahdollisuuksien näköalojen avaamista ja ymmärrettäväksi tekemistä. Sen eräs keskeinen tehtävä on laajentaa ihmisten globaalia tietoisuutta ja tuot-taa ymmärrystä ja vastuullisuudentunnetta siitä, että tulevaisuus ei suinkaan ole ennalta määrättyä vaan siihen on mahdollista vaikuttaa ihmisten tekemien valintojen ja toiminnan kautta. Tarkoituksena on saada ihmiset näkemään omaa, kuluvaa aikaa laajemmalle – omaan sekä tulevien sukupolven huomiseen ja toisaalta menneisyyteen. Toinen merkitys on saada ihmiset näkemään itsensä ympärille – muut aikalaisensa, kuten perheensä, kyläyhteisönsä tai kaupunkinsa ja aina maailmanyhteisöön saakka, ja edelleen esivanhempiinsa ja kulttuuriperimäänsä. Kolmas merkitys on saada ihmiset tiedostamaan ympäristönsä ja maapallomme luonnon kokonaisuus ja toimivuus. Tässä kontekstissa arvioinnin kohteena ovat tulevaisuudentutkimuksen tuottamien ennusteiden ja mahdollisten vaihtoehtoisten tulevaisuuksien taustalla olevien arvolauseiden perusteet. (Malaska 1993.)

2. Keekok Leen arvoteoria kasvatustieteen kentässä

2.1 Keekok Leen episteemisen implikaation malli

Leen malli yhdistää paitsi arvolauseen ja sen perusteluina käytettyjen väitteiden välisen suhteen tarkastelun myös arvolauseen perusteiden oikeellisuuden testaamisen. Malli ei vaadi täydellistä loogista pääteltävyyttä mutta lähestyy kyllä sekä kriittisen realismin perusolettamusta totuudenkaltaisuudesta, jonka mukaan todellisuudesta voidaan saavuttaa totuutta lähestyvää tietoa että sen tärkeimmän vaikuttajan, Karl Popperin fallibilismia, jonka mukaan tiedon on mahdotonta saavuttaa absoluuttista totuutta, koska ihminen on erehtyväinen ja siten kaikki tieto on periaatteessa aina epävarmaa, parannettavissa ja täsmennettävissä (Pihlström 1997). Popperin mukaan teorian totuudenmukaisuutta ei siis ole mahdollista koskaan todistaa täydellisesti, vaan ainoastaan yrittää kumota se. Leen malli edellyttää lisäksi arvolauseiden relevanttiuden kriteereitä. (Bell 1997; Siljander 2014.)

Keekok Leen episteemisen implikaation mallia hyödyntämällä on mahdollista asettaa arvoväitteet kriittisen tarkastelun ja testauksen kohteeksi, mukaan lukien empiirisen testauksen, jonka avulla voidaan arvioida arvoväitteiden perusteiden pätevyyttä. Täten voidaan kehittää johdonmukaista, yhtenäistä, rationaalista ja objektiivista moraalia. Leen mukaan arvoväitteen perusteena esitettävää totuusaineistoa voidaan arvioida tarkastelemalla, täyttääkö se seuraavat viisi kriteeriä: arvolauseen

1. tulee olla objektiivisesti varteenotettava
2. perusteluiden täytyy olla viittauksellisesti relevantteja
3. tulee olla kausaalisesti relevantti
4. tulee olla kausaalisesti riippumaton ja
5. väittämä täytyy voida testata empiirisesti. (Bell 1997; Kamppinen, Malaska & Kuusi 2003.)

Objektiivisen varteenotettavuuden mukaan arvolauseet eivät voi perustua yksittäisen yksilön mieltymyksille tai uskomuksille vaan todistusaineiston on viitattava todellisiin, objektiivisesti koeteltavissa oleviin piirteisiin. Viittauksellisen asiaankuuluvuuden mukaan arvoväitteen ja siihen viittaavan, sen todistusaineistoksi tarkoitetun väitteen on käsiteltävä keskenään samaa asiaa tai aihetta. Kausaalisella asiaankuuluvuudella tarkoitetaan, että arvoväitteen perustelulla täytyy olla yhteys arvoväitteeseen, eli sen täytyy ilmentää syy arvoväitteen ilmaisevalle asiantilalle. Kausaalisen riippumattomuuden mukaan arvoväitteen perustelu ei saa muodostua arvoväitteestä vaan sen täytyy olla itsenäisesti, vasta väitteen esittämisen jälkeen muodostunut todistusaineisto. Viimeisin, arvolauseen empiirinen testattavuus merkitsee, että arvoväitteen ehtoja ja seuraamuksia on voitava testata tieteellisesti, eli tarkastella havaintoja vasten ja yrittää kumota niitä, ja muodostettujen havaintojen on oltava keskenään yhteneviä. (Bell 1997; Kamppinen, Malaska & Kuusi 2003.)

2.2 Empiiris-analyyttisen kasvatustieteen arvolauseet tulevaisuudentutkimuksessa

Tieteellisen realismin mukaan tieteen ensisijainen tehtävä on tuottaa uutta tietoa tutkittavasta ilmiöstä. Teorian on oltava yleispätevää, empiirisesti koeteltavaa ja loogisesti ristiriidatonta. Empiiris-analyyttisen kasvatustieteen mukaan teorian tehtävä on selittää, ennustaa ja toimia ratkaisuvälineenä siinä, mitä tietyn tavoitteen saavuttamiseksi on tehtävä. (Siljander 1995.)

Empiiris-analyyttisessä kasvatustieteessä tutkija ei voi ottaa kantaa arvoasioihin eli siihen, miten asioiden pitäisi olla taikka mitä kannattaa tai ei kannata tehdä, vaan hänen tulee välttää kaikkien subjektivististen uskomusten, ennakko-oletusten ja mielipiteiden välittymistä tieteen tutkimustuloksiin. Mahdollista on ainoastaan esittää kasvatustodellisuutta koskevia tosiasioita: säännönmukaisuuksia, riippuvuussuhteita siitä miten jokin a vaikuttaa johonkin b, kuvailla todellisuutta ja esittää siitä teoreettisia näkemyksiä. Arvovapausvaatimus ei sulje pois sitä, etteivätkö arvostukset ja normit voisi olla tutkimuksen kohteena, kunhan tutkimustulokset on esitetty tosiasialauseina, tutkittavan yksilön tai yhteisön arvostuksia tai sääntöjä kuvaavina deskriptiivisinä arvo- tai normilauseina. Humen giljotiiniksi kutsutun periaatteen mukaan tosiasioista ei voida johtaa moraalisääntöjä, arvoja tai loogisia päätelmiä. Toisin sanoin siitä, miten asiat ovat, ei voida johtaa päätelmiä, miten niiden pitäisi olla. Empiiris-analyyttisen tiedonkäsityksen mukaan siitä, miten asiat ovat, on mahdollista saada tieteellistä tietoa, kun taas siitä miten niiden pitäisi olla, ei voida. (Siljander 1991; 2014.)

Wolfgang Brezinka (1976, Pikkaraisen 2010 mukaan) näkee empiiris-analyyttisen kasvatustieteenkeskeisenä tehtävänä kasvatuspäämäärien saavuttamisen edellytysten tutkimisen. Tällöin kasvatustiede ei näyttäydy vain tosiasioita kuvailevana tieteenä vaan toisaalta tarkoituksia, syitä ja päämääriä pohtivana, toisaalta syy-seuraussuhdetta haarukoivana tieteenä. Kasvatustieteen teoriaa puolestaan voidaan soveltaa ja käyttää työkaluna käytännön kannalta relevantteja ilmiöitä tieteellisesti selitettäessä. Nimenomaan kasvatuskäytännön ongelmia koskien Brezinka näkee kasvatustieteen ensisijaisesti teknologisena tieteenä, joka muuttaa empiirisen kasvatustieteen tuottaman, kausaalisuhdetta ilmaisevan, syy–seuraus suhteen sisältävän väitteen ”jos A, niin B” päämäärä-väline-mallin mukaiseen, käytännön kasvatusta ohjaavan suosituksen tai toimintaohjeen eli teknisen normin muotoon ”jos haluat, että B, tee A”. Teknisen normin totuusarvoa arvioidaan totuuskriteereillä: ”jos A johtaa B:hen”, tekninen normi on tosi. Täten tekninen normi on se, joka määrittää tieteen teorian ja käytännön välistä suhdetta ja jonka avulla voidaan ottaa välillisesti kantaa myös kasvatuspäämääriin. (Peltonen 2009; Pikkarainen 2010; Siljander 2014.)

Empiiris-analyyttisessä kasvatustieteessä teoria–käytäntö -suhdetta määritetään kahden periaatteen: arvovapausvaatimuksen ja edellä jo alustavasti kuvatun teknologisen mallin avulla. Arvovapausvaatimus koskee tieteen esittämiä tuloksia ja määrittelee vahvasti, minkä tyyppistä teoriaa tiede voi tuottaa. Teknologinen malli mahdollistaa tieteen teorioiden soveltamisen sekä tulevien tapahtumien ennustamisessa että kasvatustodellisuuden kasvatustoimenpiteiden ja päämäärien suunnittelemisessa. Siten kasvatustieteen tärkein tehtävä teorian ja käytännön suhteessa näyttäytyy teorioiden avulla tapahtuvana ilmiöiden selittämisenä ja teknisten ongelmien ratkaisemisena. Koska kasvatustieteen muotoilemat tekniset normit voidaan testata joko epätodeksi tai todeksi, voidaan niiden nähdä ole-van arvovapaan tieteen tuloksia ja täten empiiris-analyyttisestä kasvatustieteestä tulee arvovapaan ohella myös tulevaisuutta luotaavaa ja käytännöllistä. (Peltonen 2009; Siljander 2014.)

Empiirisessä kasvatustutkimuksessa teorian falsifiointi, eli teoreettinen koeteltavuus tai vääräksi osoittaminen esimerkiksi vastaesimerkkejä etsimällä, on yksi tutkimuksen välttämätön osa. Popper on ilmaissut asian demarkaatio-ongelmana. Hänen mukaansa tieteelliset väitteet tulee voida osoittaa vääriksi ja teoriat, joita ei voida kumota, eivät siten ole tieteellisiä. Teorioiden falsifioinnilla varmistetaan tieteen eteenpäin suuntautuminen: tiede kehittyy vain, mikäli ilmiöt saatetaan uudelleen kriittisen tarkastelun kohteeksi ja tuodaan esiin uudenlaisia näkökulmia tutkittavasta asiasta. Kun teoriaa testataan empiirisesti havaintoa vasten saaden esiin todellisuus, joka voi joko falsifioida eli kumota hypoteesin tai konfirmoida eli todentaa, antaa tukea sille. Konfirmoinut hypoteesi voidaan hyväksyä toistaiseksi ja altistaa uusille empiristisille testeille. Falsifikaation merkitys empiiriselle tutkimukselle merkitsee, että

mitä useampia falsifikaatio-yrityksiä hypoteesi kestää, sen vahvempana ja toimivampana se näyttäytyy. Hypoteettis-deduktiivisen menetelmän periaatteen mukaan tarkoituksena ei kuitenkaan ole yrittää todentaa hypoteesia koskaan lopullisesti, vaan löytää siitä ristiriita. On kuitenkin huomattava, että teorian falsifioituminen ei vielä tee teoriasta väärää vaan tarkoittaa, että se on mahdollista osoittaa tieteellisten testien ja havainnon avulla vääräksi. Deduktiivis-nomologinen selitysmalli perustuu nomologiseen hypoteesiin, jonka mukaan luonnossa tai ihmisen toiminnassa esiintyy myös joitain suhteellisen pysyviä lainalaisuuksia. Mallin ideana on, että selitysperustasta, joka käsittää yksittäiset tapahtumat tai asiaintilat sekä yleiset lait, on loogisesti pääteltävissä toiminnan tai tapahtuman selitys. (Pihlström 1997; Wulf 2003; Pikkarainen 2010; Siljander 2014; Pitkänen & Pyörä-lä 2015.)

3. Pohdinta

Keekok Leen episteemisen implikaation mallissa tutkimuksen kohteena ovat tulevaisuutta koskevien ennusteiden pohjalla olevien arvolauseiden perusteet. Malli on yhteneväinen empiiris-analyyttisen kasvatustieteen käyttämän, Karl Popperin kehittämän falsifikationismin kanssa, mutta lisää sen ohelle verifikationismin, oikeaksi todistamisen. Leen malli ei edellytä ehdotonta totuudellisuuden kriteeriä aina ja kaikissa olosuhteissa, sillä niin Lee kuin Bellkin hyväksyvät arvojen kulttuurisidonnaisuuden ja ajan myötä muuttumisen. Tällöin kulloinkin olemassa olevaa arvolausetta, jota on objektiivisesti ja parhaan mukaan pyritty perustelemaan ja näitä perusteita falsifioimaan siinä onnistumatta, voidaan pitää uskottavana, parhaana mahdollisena nykyhetkessä saatavilla olevana tietona.

Empiiris-analyyttinen kasvatustieteessä tutkija ei voi ottaa kantaa arvoasioihin, minkä lisäksi hän välttää tarjoamasta toimintaohjeita yhteiskunnallisten käytäntöjen muuttamiseksi. Tiedesuuntauksessa onkin tärkeää tehdä ero ei-normatiivisen, faktoissa ja tosiasioissa pysyvän, arvovapaan kasvatustieteen sekä suositeltaviin kasvatusmenetelmiin ja -päämääriin kantaa ottavan, normatiivisen, arvo-sidonnaisen kasvatusopin eli pedagogiikan välillä. Jälkimmäisessä tieteen teorioita voidaan soveltaa paitsi kasvatustodellisuuden kasvatuspäämääriä suunniteltaessa, myös tulevia tapahtumia ennustettaessa. (Siljander 1991; 2014.)

Tulevaisuudentutkimus on arvorationaalista toimintaa, jossa otetaan huomioon arvot ja arvostukset sekä tunnustetaan niiden yksilöllinen syntyminen ja esiintyminen. Se on vision toivottavuuden, haluttavuuden tai torjuttavuuden motivaatioperustan arviointia. Se on perehtymistä siihen, millaisin mahdollisuuksin, toimenpitein ja ehdoin on mahdollista saavuttaa ja toteuttaa eri visioita. Se on myös sen vision kuvaamista, millaisena tulevaisuus tulee todennäköisesti näyttäytymään, mikäli sen eteen ei tehdä mitään ja edelleen sen näkymän kautta muodostettuja näkemyksiä siitä, millaisiin toimenpiteisiin olisi ryhdyttävä asetettujen tavoitteiden saavuttamiseksi. Tulevaisuudentutkimus ei siten ole kiinnostunut ainoastaan totuudesta tai siitä mitä totuudesta on johdettavissa vaan yhtä lailla myös siitä, mikä on hyvää, kaunista ja oikein. Siten tulevaisuutta hahmottava, arvorationaalinen tutkija ei voi valita vain kaikkein järkevimpiä keinoja ulkopuolelta annetun päämäärän saavuttamiseksi, vaan hänen on itse osallistuttava valitsemaan päämäärää, joka perustuu ajatukseen hyvästä elämästä. Tuolla päämäärässä siintää uusi nykyisyys, jossa haluttu tila ja saavutetut tavoitteet, tai mahdollisesti toivottuina nähdyt mutta saavuttamatta jääneet tilat näyttäytyvät aistein havaittavina ilmiöinä.

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TUTU4 TULEVAISUUDENTUTKIMUKSEN MENETELMÄT KÄYTÄNNÖSSÄ

TUTU4 Tulevaisuudentutkimuksen menetelmät käytännössä -opintojakson (5 op) tavoitteena on tulevaisuusajattelun syventäminen ja tulevaisuusnäkökulman soveltaminen tutkimuskohteeseen, aiempien kurssien teemojen (tieteenfilosofinen teoria, ontologia, epistemologia ja metodologia) syventäminen, tieteellinen kirjoittaminen, argumentointi sekä tutkijan ammatti professiona. Opintojaksolla perehdytään tieteellisen tulevaisuudentutkimuksen menetelmiin ja työskentelytapoihin sekä tieteelliseen argumentaatioon ja tutkimuksenteon perusteisiin. Opintojakson suoritettuaan opiskelija osaa soveltaa valitsemaansa tulevaisuudentutkimuksen tutkimusmenetelmää omassa tutkimuksessaan.

TUTU4-jakson esseen on arvioinut Tulevaisuudentutkimuksen Verkostoakatemian koulutussuunnittelija Hanna-Kaisa Aalto.

Max Stuckin työn "Tarkastelussa Causal Layered Analysis – tausta-ajatukset, rakenne, mahdollisuudet ja rajoitukset" otsikointi, aiheen rajaus ja jäsentely on tehty selkeästi ja loogisesti ja käsittelytapa on analyyttinen ja ongelmakeskeinen (mm. kriittinen ja problematisoiva). Suoritus luo aiheesta yhtenäisen kokonaiskuvan ja lähteitä on käytetty oikein ja monipuolisesti. Kirjoittaja on todella sisäistänyt lukemansa eikä vain kääntänyt.

Pidin erityisesti kirjoittajan näennäisen vaivattomasta tyylistä kuljettaa monen tasoisia asioita selkeästi ja ymmärrettävästi ja kuitenkin partaveitsen terävästi analysoiden. Kyky keskustella lähdeaineiston kanssa ja jatkojalostaa luettua osoittaa oivaltavaa osaamista ja laaja-alaista ymmärtämistä.

Tarkastelussa Causal Layered Analysis – Tausta-ajatukset, rakenne, mahdollisuudet ja rajoitukset

Max Stucki
Turun yliopisto, Yhteiskuntatieteellinen tiedekunta, filosofia

1. Johdanto

Tutkielmassani käsittelen Sohail Inayatullahin kehittelemää Causal Layered Analysis (CLA) -tulevaisuudentutkimuksen tutkimusmetodia. CLA nojaa lähestymistavassaan jälkistrukturalismiin. Tavoitteena CLA:ta käytettäessä ei niinkään ole luoda tulevaisuutta koskevia ennusteita, vaan sekä nykyisyyttä että menneisyyttä koskevan ymmärryksen lisääminen, jotta aidosti vaihtoehtoisten tulevaisuuksien luominen olisi mahdollista. CLA:ta käytettäessä huomion keskipisteessä ovat eri analyysien tasot, joiden kautta pyritään luomaan vaihtoehtoisia skenaarioita.[1] Tavoitteena CLA:ssa on yhdistää empiristisiä, tulkitsevia, kriittisiä ja toiminnalliseen oppimiseen perustuvia tietämisen tapoja. Metodina CLA:n vahvuus on nimenomaan vaihtoehtoisten tulevaisuuksien rakentamiseen tarvittavan luovan tilan mahdollistamisessa. Tästä syystä CLA:n lähtökohtana on eri tulevaisuuksien kyseenalaistaminen.[2] Perimmiltään CLA vastaa kysymyksiin: "Kuka voittaa?", "Kuka häviää?" ja "Kuka sanelee mitä tehdään?". CLA ei ole itsessään tulevaisuutta koskeva metodologia sinänsä, vaan väline, jonka avulla tulevaisuutta koskevia keskusteluja voidaan käydä avoimemmin. Avoimuus seuraa CLA:n mahdollistamasta puolueellisuuden, voittajien, häviäjien ja muiden eriarvoisten asemien ja oletusten paljastamisesta.[3]

Päämääränä tutkielmassani on tarkastella CLA:n rakennetta erityisesti sen analyysitasojen kautta, CLA:n taustalla vaikuttavaa jälkistrukturalistista ajatusmaailmaa, metodin mahdollisuuksia tulevaisuustutkimuksessa, sekä myös sen käyttäjilleen luomia rajoituksia ja haasteita. En tarkastele niinkään itse metodin toimintaa, vaan niitä palasia ja sitä maailmankuvaa, joista käsin CLA rakentuu kokonaisuudeksi.

Ensimmäiseksi tutkielmassani käsittelen CLA:n taustalla olevan ajatusmaailman ja jälkistrukturalismin suhdetta, joka on keskeinen tekijä CLA:n ymmärtämisen kannalta. Tämän jälkeen tarkasteluni kohdistuu CLA:lle keskeisiin analyysitasoihin. Tästä siirrytään käsittelemään CLA:n vahvuuksia ja sen kohtaamia rajoituksia ja haasteita. Lopuksi esitän yhteenvedon käsitellyistä asioista.

2. CLA ja jälkistrukturalismi

CLA on jälkistrukturalismin kehityksen tuote. Ilman jälkistrukturalismin ainakin pinnallista tuntemusta, CLA:n toimintatavat voivat tuntua vierailta uudelle käyttäjälle.

[1] Inayatullah 1998, 815.
[2] Inayatullah 2004, 1.
[3] Barber 2009, 171.

CLA kiinnittää erityistä huomiota siihen tosiasiaan, jonka mukaan tulevaisuustutkimuksen lähtiessä kritiikittömästi nykyhetken tiedostamattomista oletuksista käsin, se ainoastaan vahvistaa sitä ajattelumallia, joka on jo nykyhetkessä läsnä [4]. CLA pyrkii kriittisenä tulevaisuudentutkimuksen metodina välttämään tätä. Inayatullah on tuonut jälkistrukturalistisen tarkastelutavan mukanaan tulevaisuudentutkimukseen, jotta skenaarioiden luomisessa ei keskityttäisi pelkästään heijastamaan jo olemassa olevaa tulevaisuuteen, vaan voitaisiin vapautua käyttämään uudenlaisia ajatusmalleja pohdittaessa vaihtoehtoisia tulevaisuuksia.

Kaikki tulevaisuutta koskeva tutkimus liittyy kiinteästi niihin filosofisiin oletuksiin, mitä pidetään muuttumattomana ja mistä taas voidaan neuvotella: merkityksellisenä ja triviaalina. Näin ollen jokainen yritys tulevaisuuden suunnitteluun on suuressa määrin todellisuuskäsitysten ja politiikan vaikutuksen alla. Jälkistrukturalismi liittyy olemassa olevien tietämisen tapojen ja oletusten tiedostamiseen. Se auttaa ymmärtämään niitä tietämisen tapoja, jotka ovat etuoikeutetussa asemassa. Samoin se pyrkii avaamaan tietyn aikakauden/trendin vaikutusta tietämiseen. Yksi aikakausi ei välttämättä hyväksy toisen aikakauden tietoa tiedoksi. Tämä pyritään tarkastelussa huomioimaan. [5]

Inayatullahin mukaan on tärkeää tutkia kuinka virallinen näkemys nykyisyydestä ja tulevaisuudesta on tullut luoduksi. Tämä on välttämätöntä, mikäli halutaan todella luoda vaihtoehtoisia tulevaisuuksia. Kriittinen näkökulma tulevaisuudentutkimukseen auttaa purkamaan ja jälleenrakentamaan sekä nykyisyydessä käsillä olevia ongelmia että sitä kautta erilaisia tulevaisuuksia koskevia skenaarioita[6] Poststrukturalistisesta lähestymistavastaan käsin CLA problematisoi olemassa olevia rakenteita, luo vaihtoehtoisia näkökulmia ja pyrkii ottamaan huomioon ne, jotka on eristetty vallan piiristä[7]. CLA pyrkii problematisoimaan olemassa olevaa tulevaisuusajattelua: tutkimaan sen taustalla olevia oletuksia, ideologioita, maailmakuvia, myyttejä ja metaforia, jotka löytyvät tulevaisuutta koskevista tutkimuskäytännöistä. Näistä tietoiseksi tulemalla CLA pyrkii luomaan tilan vaihtoehtoisten tulevaisuuksien luomiselle, jotka eivät perustu trendiekstrapolaatioon tai systeemisten mallien oletusten virittämiseen, kuten tavallisissa skenaarioissa, vaan kriittisten maailmankuvaa koskevien huomioiden de- ja rekonstruointiin. Vaihtoehtoisten tulevaisuuksien esittäminen onkin määrätyllä tavalla CLA:n tulos, ei sen päämäärä itsessään[8]

Inayatullah on jakanut tulevaisuutta koskevan diskurssin kolmeen toisiinsa liittyvään ulottuvuuteen: ennustavaan, kulttuuriseen ja kriittiseen. Inayatullahin mukaan ensimmäinen lähestymistapa yksinkertaisesti kuvailee nykyhetken uudelleen ja heijastaa sen tulevaisuuteen; toinen lähestymistapa suhteellistaa tulevaisuuden kulttuurien välisessä diskurssissa politiikan kustannuksella; kolmas lähestymistapa luo uusia tiedollisia tiloja dekonstruoimalla tulevaisuuden, mitä kautta voidaan luoda vaihtoehtoisia tulevaisuuksia. Nämä kolme tapaa ovat yhdistetyt kolmeen tiedolliseen positioon: empiiriseen, selittävään ja jälkistrukturalistiseen..[9]

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[4] Inayatullah 1990, 120.
[5] Inayatullah 1990, 116-119.
[6] Inayatullah 1990, 137-138.
[7] MacGill 2015, 56.
[8] Ramos 2003, 33.
[9] MacGill 2015, 115.

Ottamalla etäisyyttä itselleen tuttuun kulttuuriin ja sen taustalle oleviin oletuksiin, vanhoilla metodeilla luodut tulevaisuuskuvat muuttuvat suhteellisiksi. Erilaiset tavat, joilla aika, historia ja edistys voidaan kulttuurissa konstituoida tulevat näkyville. Tulevaisuudesta tulee ennen kaikkea avoin, neuvoteltavissa oleva ja jopa arvaamaton. Nykyisyyttä ei enää nähdä ikuisena tilana, jonka rakenteet heijastetaan tulevaisuuteen, vaan väliaikaisena olosuhteena.[10] Muilta kulttuureilta ja sivilisaatioilta lainattujen tietämisen tapojen käyttäminen auttaa ottamaan etäisyyttä omaan nykyisyyteen ja käsityksiin siitä. CLA jälkistrukturalistisena metodina onkin kiinnostunut etäisyyden luomisesta nykyisiin kategorioihin. Etäisyys antaa mahdollisuuden huomata sosiaaliset käytännöt hauraina ja partikulaarisina, ei universaaleina ajattelun kategorioina. Ne nähdään diskurssina, joka on käsitteenä samanlainen kuin paradigma, mutta ottaa huomioon tiedolliset oletukset. Post-strukturalistisessa kriittisessä lähestymistavassa tarkoituksena ei ole tehdä ennusteita tai vertailuja, vaan problematisoida analyysin yksiköt. Päämääränä ei ole määritellä tulevaisuutta tarkemmin, vaan tietyssä mielessä "epämääritellä" se. [11]

Esimerkiksi edellisen kaltaisesta lähestymisestä Inayatullah tarjoaa seuraavan huomion: väestöennusteet eivät ole CLA:ssa tärkeitä, vaan se miten "väestön" kategoria on tullut historiallisesti tärkeäksi osaksi diskurssia; miksi väestö, eikä esimerkiksi yhteisö, tai kansa ole keskustelun keskipisteenä? Laajemmassa tarkastelussa voitaisiin myös kysyä miksi väestön määrää ennustetaan? Miksi väestönkasvu on tärkeämpää kuin vaikkapa kulutuksen taso? Eri vallan muotojen rooli virallisten diskurssien luomisessa on keskeistä sen ymmärtämiselle, miten tietyt tulevaisuudet ovat tulleet hallitseviksi. Tarkoituksena ei ole ainoastaan selvittää, mitkä trendit tai tapahtumat on asetettu etusijalle toisiin nähden, vaan myös miten erilaiset asiat on ensinnäkään konstruoitu trendeinä tai tapahtumina. [12]

Tulevaisuudentutkimukselle tästä perspektiivistä tarkasteltuna on olennaista tehdä nykyisyydestä merkittävä, ei löytää parempia tapoja ennustaa tulevaisuutta. Päämääränä tässä on huomata, että todellisuus on tullut monista syistä, ja että tietyn nykyisyyden tuleminen tarkoittaa toisten nykyisyyksien olemattomuutta. *Jokaisen*a hetkenä 'se mikä on' hiljentää useat siitä poikkeavat ajattelemisen ja tekemisen tavat. Tästä kriittisestä perspektiivistä käsin tulevaisuudentutkijan tehtävänä on tehdä nykyisyydestä merkittävä tutkimalla esimerkiksi sitä, miten "väkiluvun" kategoria on syntynyt, ei niinkään pelkästään sitä, miten jokin trendi vaikuttaa väkilukuun. Väkiluvun käsite ymmärretään näin osaksi määrättyä tapaa konstruoida maailma, eikä vain neutraaliksi ja tekniseksi määreeksi. Erilaisia haasteita voidaan myös tutkia tätä kautta havainnoimalla miten nämä "haasteet" on ylipäätään ymmärretty haasteiksi. Mikä on se kehys, joka on tehnyt niistä ongelmallisia. [13]

Problematisoimalla tuttuja, mutta tiedostamattomia rakenteita ja lähtökohtia, CLA nojaa jälkistrukturalismin perintöön. Hiljennetyt ja huomaamatta jäänet äänet pyritään nostamaan esiin ja samalla ymmärtämään, että nykyisyys ei ole ikuinen olotila, vaan muutoksen kohteena. Tulevaisuus ei ole uusi nykyisyys, vaan siinä pitää olla rohkeutta nähdä myös erilaisuutta. CLA:n kautta voidaan pyrkiä siis paitsi luomaan vaihtoehtoisia tulevaisuuskuvia, myös havahtumaan nykyhetken tiedostamattomiin rakenteisiin ja oletuksiin.

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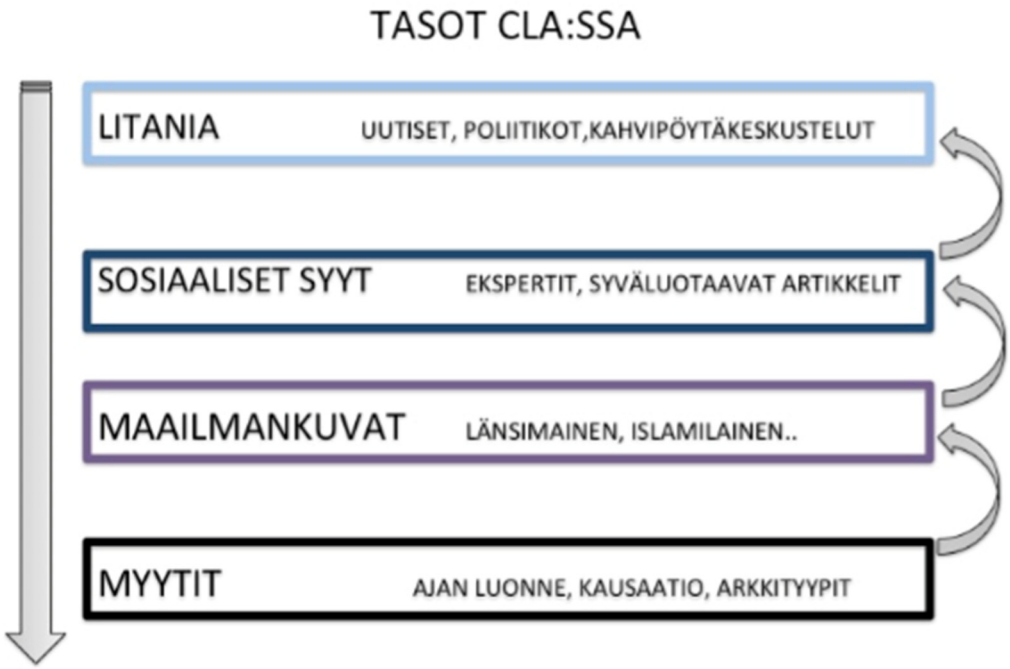
[10] Inayatullah 1990, 126.
[11] Inaytullah 1998, 816-817.
[12] Inaytullah 1998, 816-817.
[13] Inayatullah 1990, 129-130.

3. CLA ja analyysitasot

Tässä luvussa tarkastellaan CLA:n metodia sen analyysitasojen kautta. CLA perustuu oletukseen, jonka mukaan se, miten ongelma kehystetään, muuttaa sille löydettyä ratkaisua [14]. CLA perustuukin siten lähestymistapaan, jossa ongelma tai asia puretaan neljään eri tasoon ja jokainen taso antaa mahdollisuuden saada syvempää ymmärtämystä tutkittavaa kohdetta kontekstualisoivista vaikutteista [15]. Ensimmäinen taso on litania, joka on virallinen ja kyseenalaistamaton kuva todellisuudesta. Toisena tasona ovat sosiaaliset syyt, joissa litanian taso selitetään ja kyseenalaistetaan. Kolmannen tason muodostaa maailmankuva, josta käsin voidaan purkaa ideologisia ja tiedostamattomia olettamuksia. Samoin kolmannelta tasolta käsin voidaan tutkia sekä litanian että sosiaalisten syiden tasojen muodostumista. Neljäs taso käsittelee myyttejä ja metaforia, jotka ovat käsiteltävien asioiden usein täysin tiedostamattomia tasoja. CLA liikkuu näiden neljän tason välillä paljastaen uusia ja tuntemattomia tietämisen tapoja, joiden kautta voidaan vapautua luomaan yhä moninaisempia tulevaisuudenkuvia. [16] CLA auttaa tasojensa kautta liikkumaan ongelman konventionaalisten kehysten tuolle puolen ja löytämään siihen nähden uusia näkökulmia. [17]



Kuvio 1. *CLA:n tasot.*

[14] Inayatullah 1998, 820.
[15] Ramos 2003, 34.
[16] Inayatullah 2004, 1.
[17] Inayatullah 2004, 14.

3.1 Litanian taso

Litania on se tapahtumien taso, jossa elämme jokapäiväistä elämäämme [18]. Litania koostuu erilaisista toisistaan irrallisista ongelmista ja tapahtumista, jotka vaikuttavat tapahtuvan itsenäisesti. Tämä on Inayatullahin mukaan perinteinen tulevaisuudentutkimuksen toimintakenttä, jossa voidaan helposti luoda apuvälineitä pelon politiikalle erilaisten toimijoiden palvelemiseksi. Litania on tasona kaikkein näkyvin, eikä sen ymmärtämisen voida olettaa vaativan suurtakaan analyyttistä kykyä. Litanian tasolla oletuksia ei tavallisesti kyseenalaisteta. Trendien, ongelmien ja tapahtumien irrallisuus voi johtaa yksilön tuntemaan toivottomuutta uhkaavien ongelmien edessä. Lähinnä litanian tasolla toimiva tulevaisuudentutkija saattaa esiintyä pelonlietsojana, joka julistaa lopun olevan lähellä. [19] [20]

Litania on tasoista pinnallisin. Tällä tasolla tapahtumat tai ongelmat itsessään ovat helposti havaittavia, usein median aktiivisten toimien tuloksena, mutta syvemmät syyt ja vaikuttimet jäävät käytännössä täysin hämärän peittoon. Litania tulee jokaista ihmistä vastaan päivittäin uutisissa, artikkeleissa ja päivän puheenaiheissa muiden kanssa. Ongelmien ja tapahtumien pintapuolinen pohtiminen jättää kuitenkin tunteen siitä, että käsillä oleva asia ei ole hallinnassa, eikä siihen ole mahdollista vaikuttaa. Tämä johtuu kuitenkin ongelmaa koskevan syvemmän ymmärryksen puutteesta yksilötasolla.

3.2 Sosiaalisten syiden taso

Sosiaalisten syiden tasolla otetaan tutkinnan kohteeksi ne sosiaaliset rakenteet, joiden sisällä litania toimii. Tällä tasolla tullaan tietoisiksi niistä sosiaalisista voimista, jotka hallitsevat ja vaikuttavat jokaiseen elämään arkipäivän tasolla. [21]

Sosiaalisten syiden taso liikkuu systeemisten syiden alueella, joihin kuuluvat muun muassa sosiaaliset, teknologiset, taloudelliset ja historialliset tekijät. Tällä tasolla selitysmallit johdetaan kvantitatiivisesti saatavilla olevasta datasta [22]. Valtion ja muiden toimijoiden roolia ja intressejä kohtaan osoitetaan tällä tasolla erityistä huomiota. Inayatullahin mukaan tällä tasolla liikkuvat analyysit saavat tilaa yleensä erilaisten instituuttien julkaisuissa, mutta myös sanomalehtien pääkirjoituksissa. Sosiaalisten syiden tason vahvinta antia ovat tekniset selitykset tutkittavilla asioille, samoin kuin akateeminen analyysi. Käsillä oleva data kyseenalaistetaan usein sosiaalisten syiden tasolla, mutta kyseenalaistaminen ei kosketa itse paradigmaa, josta käsin kyseenalaistamista tehdään, ja josta tutkittava ongelma on noussut, vaan tutkimus pysyy paradigmauskollisena, eikä näin vapaudu vanhoista ajattelukaavoista.[23]

Sosiaalisten syiden taso tarjoaa selityksen litaniatasolla havaittaville tapahtumille ottamatta kuitenkaan kantaa muuten kuin teknisellä tasolla. Tämä taso ei lähde tutkimaan sitä maailmankuvaa, josta käsin se itse selittää asioita. Näin ollen tarjotut selitysmallit lähtevät jo niistä olettamuksista ja uskomuksista, joista litaniatason ongelmat ovat nousseet. Sosiaalisten syiden taso on siis myös itsessään pinnallinen selittämisen taso, jossa ei varsinaisesti pureuduta siihen, miksi jokin asia ylipäätään nähdään

[18] MacFill 2015, 55.
[19] Inayatullah 2004, 11-12.
[20] Inayatullah 1998, 820.
[21] MacGill 2015, 56-57.
[22] Esimerkiksi syntyvyystilastot.
[23] Inayatullah 2004, 12.

ongelmallisena, vaan tyydytään ainoastaan vahvistamaan nykyistä ajattelumallia tarjoamalla ratkaisuja ongelmiin, jotka se on tietyssä mielessä itse tuottanut.

3.3 Maailmankuvan taso

Maailmankuva taso kehystää kahden ylemmän tason diskursseja. Maailmankuvana voi olla vaikkapa läntinen neoliberaali arvomaailma, tai islamilainen, tai hindulainen maailmankatsomus.[24] Kolmas taso käsittelee sitä maailmankuvaa, joka tutkittavassa tapauksessa tukee ja legitimoi käsillä olevaa ongelmaa. Tutkimalla tätä tasoa tavoitteena on löytää syvempiä sosiaalisia, lingvistisiä ja kulttuurisia toimijoista riippumattomia prosesseja. Syvemmälle menevien oletusten tunnistaminen on olennaista tällä tasolle, samoin kuin käsiteltävän ongelman tarkastelu uusista näkökulmista. Maailmankuvan tasolla voidaan tulla tietoiseksi siitä, miten erilaiset diskurssit konstituoivat ongelmia, eivät vain aiheuta tai välitä niitä. Kolmas taso tutkii sitä, miten diskurssi, jota käytämme ongelman ymmärtämiseen, itsessään antaa ongelmalle tietyt kehykset. [25]

Maailmankuvan tasolla on itsessään useita eri tasoja. Ensimmäisenä tulee sidosryhmätaso, johon kuuluvat eri toimijoiden intressit. Toisena tulee ideologioiden, taso, jossa ovat näkemykset siitä, millainen maailma on ja millainen sen tulisi olla. Kolmannella tasolle ovat sivilisaatiosta nousevat käsitykset, jotka ilmaistaan maailmankuvissa [26]. Neljäs taso on episteeminen, esimerkiksi postmoderni tai syklinen. Sen päättäminen, mitä diskurssia on käytettävä, on tilannesidonnaista. [27]

Kolmannen tason voidaan sanoa olevan ensimmäinen "syvä" taso. Maailmankuvien seassa liikuttaessa kvantitatiivinen data ja mekanistiset selitykset joutuvat problematisoiduksi, sillä niiden ylivalta litanian ja sosiaalisten syiden tasolla suhteessa muihin näkemyksiin tulee esiin. Pelkät tekniset selitykset eivät enää riitä, vaan halutaan ymmärtää miksi jokin asia ymmärretään siten kuin se ymmärretään. Samoin on tärkeää löytää mahdollisia uusia lähestymistapoja, eli uusia maailmankuvia, tarkastella käsiteltävänä olevaa asiaa.

Maailmankuvan tasolla itse paradigmat tulevat tunnistetuiksi. Tämä auttaa haastamaan niitä vanhoja selityksiä, joita on toistuvasti tarjottu tuloksetta sivilisaatiotamme kohtaaviin ongelmiin. Ilman sukeltamista teknisten selitysten taakse, ei voida olettaa löydettävän mitään todella vaihtoehtoista ratkaisumallia ongelmalliseksi koettuun nykyhetkeen, mistä käsin aidosti vaihtoehtoisia tulevaisuutta koskevia skenaarioita voitaisiin tehdä. Kolmannella tasolla ajaudutaan jo selvästi totuttujen kaavojen ulkopuolelle, mikä voi aiheuttaa haasteita sen hyväksymisessä, että oma maailmankuva ei olekaan ainoa tapa tarkastella maailmaa. Vanhasta on kuitenkin kyettävä luopumaan, jotta voidaan saavuttaa jotakin todella uutta.

3.4 Myyttien ja metaforien taso

Neljäs taso käsittelee tutkittavien asioiden taustalla olevia myyttejä ja metaforia. Tämän on tutkimuksen syvin taso. Tutkimuksen kohteena ovat syvällä olevat tarina, kollektiiviset arkkityypit, käsiteltävän

[24] MacGill 2015, 57.
[25] Inayatullah 2004, 12.
[26] Esimerkiksi läntinen ja islamilainen maailmankuva.
[27] Inayatullah 2004, 12.

ongelman tiedostamattomat ja usein tunteisiin liittyvät ulottuvuudet. Tällä tasolla tarjotaan intuitiivisia ja tunneperustaisia kokemuksia tutkittavasta maailmankuvasta. Käytetty kieli on vähemmän tarkkaa ja enemmän keskittynyt tuottamaan mielikuvia, joiden tarkoituksena on koskettaa ihmisen sydäntä pelkästään rationaalisen harkinnan sijaan. Tämä taso on kyseenalaistamisen juuret. Kyseenalaistaminen itse löytää myös kuitenkin tällä tasolla rajansa ja sen täytyy tästä syystä ottaa käyttöön muita ymmärryksen kehikkoja, kuten myytit ja metaforat. [28]

Neljännellä tasolla menemme identiteetin metaforiselle tasolle. Tämä näkökulma ottaa askelen taaksepäin käsillä olevasta tulevaisuudesta ottaakseen tarkastelun kohteeksi syvemmät, erityisesti ei- ja jälkirationalistiset, oletukset jotka koskevat keskustelun kohteena olevaa tulevaisuutta. Esimerkiksi tietyillä skenaarioilla on erityisiä oletuksia ajan, rationaalisuuden ja toimijuuden luonteista. Erilaiset näkemykset tulevaisuuden luonteesta tulee tehdä tunnetuiksi. [29]

Konventionaalisten metaforien dekonstruointi ja vaihtoehtoisten metaforien esittäminen on voimakas tapa haastaa nykyisyys ja luoda mahdollisuus vaihtoehtoisille ratkaisumalleille ja niistä johdettaville tulevaisuuksille. Metaforat ja myytit eivät ainoastaan paljasta syvempiä sivilisaatioon liittyviä perusteita, vaan ne myös siirtävät mahdollisten tulevaisuuden luomisen rationaalisten suunnittelun tuolle puolen. Tämä taso palauttaa tiedostamattoman ja myyttisen tulevaisuuksiamme koskevaan diskurssiin. [30]

Mei-Mei Song tarjoaa epäilijöille hyvän syyn käyttää metaforia tulevaisuudentutkimuksessa. Tulevaisuuden tutkiminen on kuin menemistä vieraalle, eksoottiselle ja kartoittamattomalle alueelle. Metaforien käyttö on ajattelun laajentamista, kommunikoinnin parantamista ja laajojen näkökulmien hyödyntämistä tilanteessa, jossa ollaan tuntemattomilla mailla. Samalla se antaa tehokkaan kehikon, joka tukee osallistujia näiden haastaessa omat vanhat ja syvälle juurtuneet näkemyksensä ja auttaa luomaan uusia, jotka sopivat paremmin nykyaikaan ja tulevaisuuteen, mikä onkin nykyajan tulevaisuusajattelun olennainen tehtävä. [31]

Song havainnollistaa metaforien hyödyllisyyttä pohdittaessa ja problematisoitaessa nykyisiä rakenteita ja lähtökohtia. Songin mukaan metaforien käyttö mahdollistaa perinteisen "kansanviisauden" kautta tapahtuvan syvään juurtuneiden uskomusten haastamisen. Perinteisten sananlaskujen tai idiomien käyttö metaforina on erityisen voimakas apu, jolla ihmiset voidaan saada ymmärtämään perinteisten näkemysten vanhentuneisuus tämän päivän yhteiskunnassa. Dekonstruoimalla nykyisyyden hyvin tunnetulla kansanviisaudella, ihmiset huomaavat nopeasti, että noita näkemyksiä ei enää voida kutsua erityisen "viisaiksi". [32]

Neljännellä tasolla perinteiset näkemykset haastetaan kaikkein voimakkaimmin. Perustavien myyttien paljastuminen auttaa ymmärtämään kolmea ylempää kerrosta aivan uusista näkökulmista. Myyteistä tietoiseksi tuleminen avaa nykyhetkeä aivan uudella tavalla, mikä mahdollistaa osaltaan täysin uudenlaisten tulevaisuuksien suunnittelemisen. Syvimmällä tasolla tapahtuva tutkimus palaa tietyllä tavalla ihmiskunnan alkuhämärään, jossa muodostuivat ne arkkityypit ja myyttiset tarinankaaret, joiden kautta yhä tänäänkin tiedostamattamme järjestämme maailmankuvaamme.

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[28] Inayatullah 2004, 13.
[29] Inayatullah 2004, 13.
[30] Inayatullah 2004, 13.
[31] Song 2016, 5-7.
[32] Song 2016, 2.

4. CLA:n vahvuudet, rajoitukset ja haasteet

Tässä luvussa tarkastelen CLA:n vahvuuksia ja heikkouksia. Perehdyn erityisesti CLA:n kykyyn rikastuttaa tulevaisuutta koskevia skenaarioita ja sen kykyä vapauttaa ajattelu vanhoista rajoitteista. CLA:n rajoitteita koskien otan esille sen kyvyttömyyden tehdä itse ennusteita, CLA:n problematisoinnin ongelmat ja myyttitason haasteet.

4.1 Vahvuudet

CLA:n vahvuutena on kyky mennä perinteisten ennustemetodien pinnallisuutta syvemmälle. Perinteiset metodi ovat usein kyvyttömiä purkamaan niihin sisältyviä ja vaikuttavia maailmankuvia, ideologioita ja diskursseja, puhumattakaan arkkityypeistä, myyteistä ja metaforista. Ne antavat valmiiksi tehtyjä tulevaisuuksia, unohtaen institutionaalistuneet käytännöt ja arvot, joita ne kantavat jatkuvasti mukanaan. CLA:n tehtävänä ei ole niinkään tietyn määrätyn tulevaisuuden ennustaminen, kuin avata tilaa uudenlaisten diskurssien esittämiseen, jotka voidaan muokata skenaarioiksi. [33]

CLA haastaa litanian pinnallisuuden tuoden esiin rikkaampia kuvia nykyisyyteen kuin pelkästään uutisia lukemalla voisi uskoa. Maailmankuva voi helposti jäädä hyvinkin ohueksi, laihaksi ja yksipuoliseksi, mikäli perinteisten selitysmallien tuolle puolen ei koskaan uskaltauduta. CLA:n päämäärä sellaisten turvallisten tilojen luomisessa, joissa kyseenalaistaminen on mahdollista, on arvokas mahdollisuus onnistua tunnistamaan myös omaan ajatteluun liittyviä sudenkuoppia, joiden kautta pudotaan aina takaisin samaan lähtöpisteeseen.

CLA pyrkii vapauttamaan kahleista, joita tiedostamattomat oletukset, maailmankuvaa koskevat luutuneet käsitykset ja ideologiset positiot luovat. Nämä rajoitteet estävät merkitsevällä tavalla uusien tulevaisuuskuvien luomisen, sillä ne ohjaavat tiedostamattomasti kohti totutun kaltaisia odotuksia tulevaisuuden suhteen. CLA:n anti on tietoon ja ymmärrykseen vaikuttavien tekijöiden tekemisessä tunnetuksi. Samalla se auttaa ymmärtämään myös muiden esittämien tulevaisuuskuvien taustalla olevia syvempiä vaikuttumia ja tekijöitä. Kaivauduttaessa syvemmille tasoille voidaan huomata, että erilaisten tulevaisuuskuvien taustalla vaikuttavat täysin eri maailmankuvat ja myytit. Tämä voi auttaa hedelmällisen vuoropuhelun aikaansaamisessa osapuolten kyetessä paremmin ymmärtämään toistensa perimmäisiä lähtökohtia erilaisia tulevaisuuksia koskeville visioilleen.

CLA:n toinen keskeinen käyttökelpoisuuden todiste ilmenee siinä, että se voi luokitella useat eri todellisuusnäkemykset pysyen samalla herkkänä horisontaalisille ja vertikaalisille tiloille. Usein yksilö puhuvat ja kirjoittavat eri perspektiiveistä käsin. CLA löytää kaikille tilan painumalla pinnallista litaniaa syvemmille tasoille ja auttaen syvemmälle uponneita näkemään määrällisten indikaattorien hyödyt heidän preferoituun tulevaisuuteen nähden. CLA antaa strategisia syitä ymmärtää muita tasoja: päätökset ovat usein menestyksekkäitä, jos osallistuminen on laaja-alaista ja osallistujien ajatustapoja muokkaavaa. [34]

[33] Inayatullah 2004, 41.
[34] Inayatullah 2004, 43-44.

4.2 Rajoitteet ja haasteet

Kuten jokaisella metodilla, myös CLA:lla on omat rajoitteensa. Nämä rajoitteet koskevat ennen kaikkea CLA:n kykyä tehdä ennusteita, CLA:n aiheuttamaa mahdollista toiminnallista lamaantumista, sen mahdollista vierautta uusille käyttäjille sekä problematisoinnin ja myyttitason aikaansaamia mahdollisia haasteita.

4.2.1 CLA ja ennusteettomuus

CLA ei itsessään tee tulevaisuuteen suuntautuneita ennusteita. Sen tehtävänä on vapauttaa hahmottamaan nykyiseen päätöksentekoon vaikuttavat pinnalliset ja syvemmällä olevat tekijät, mitä kautta voidaan luoda todella erilaisia kuvia tulevaisuudesta. CLA tarvitsee tuekseen muita tulevaisuudentutkimuksen metodeja, joiden kanssa käytettynä se pääsee antamaan suurimman potentiaalinsa [35].

CLA on eräänlainen mahdollistaja, mutta varsinainen rakentaja se ei ole. Metodin vahvuus on sen problematisoinnissa, mitä kautta vanha ja totuttu saa väistyä. Tässä kuitenkin on samalla sen rajoite, sillä esimerkiksi ilman skenaariometodia, CLA ei voi varsinaisesti tuottaa uusia tulevaisuuskuvia, vaan ainoastaan kritisoida nykyisyyttä.

CLA:n ennusteiden tekemistä koskeva rajoite liittyy läheisesti problematisoinnin ongelmaan. Mikäli pysyttäydytään pelkästään CLA:ssa, on mahdollista jämähtää pelkkään problematisointiin ja unohtaa uusien tulevaisuuksien suunnitteleminen. Tästä syystä on tärkeää ottaa jokin täydentävä tulevaisuudentutkimuksen menetelmä CLA:n rinnalle.

4.2.2 Problematisoinnin haaste

Toinen rajoite, joka koskee CLA:n käyttämistä voi olla toiminnan lamaantuminen. Tällä tarkoitetaan sitä, että aika, joka on käytetty nykyisyyden problematisointiin, on liian suuri verrattuna uusien, eri kerroksiin perustuvien toimintatapojen suunnitteluun käytettyyn aikaan. [36] Problematisointi on osattava lopettaa oikeaan pisteeseen, jotta tutkija ei hukkuisi kohteidensa "syvyyteen", vaan pystyisi myös muodostamaan koherentteja vastauksia esitettyihin kysymyksiin. Filosofisessa mielessä lienee mahdollista jatkaa problematisointia *ad infinitum*, mutta haluttaessa tuottaa vaihtoehtoisia näkemyksiä nykyisyyteen, on ymmärrettävä, että jossakin vaiheessa on vain todettava, että saavutettu ymmärryksen taso on riittävä käsillä olevaa asiaa koskien. Muutoin CLA ei kykene täyttämään tehtäväänsä, vaan tukehtuu siihen, mikä siinä itsessään alun perin oli anniltaan parasta.

Vaikka Inayatullah ohittaa tämän haasteen melko nopeasti [37], lienee kyseessä eräs CLA:n merkittävimmistä solmuista. Työkalua, problematisointia tässä tapauksessa, voidaan aina käyttää oikein, mutta myös väärin. Oikeinkäytettynä työkalu rakentaa ja luo uutta, mutta väärinkäytettynä se luo ainoastaan ongelmia.

Problematisoinnin kohdalla voidaan kysyä: "Mikä on tarpeeksi?" Kuinka syvälle on tarpeen mennä? Inayatullah ei anna tähän vastausta. Paljon riippuu varmastikin tulevaisuustyöpajan vastuuhenkilöstä,

[35] Inayatullah 2004, 44.
[36] Inayatullah 2004, 44.
[37] Ks. Inayatullah 2004.

jonka kontolla on ohjata toimintaa. Kuitenkin selvä rajapyykki jää puuttumaan. Kyky ja halu asioiden tutkimiseen CLA:n kautta saattaa rajoittamattomana viedä aivan väärään suuntaan.

Edellä esitettyyn kysymykseen on vaikea löytää vastausta. Mikäli viitataan vain työpajan ohjaajan itsensä arvioiin siitä, että tarpeellinen syvyys on saavutettu, saadaan kysymykseen yhtä monta vastausta kuin on ohjaajiakin. Mikäli toisaalta haetaan selvää rajaa, jonka ylittyessä problematisointi on lopetettava, on mielekästä kysyä, voidaanko sellaista rajaa edes olettaa olevan olemassa? Käsiteltäviä ongelmia ja kysymyksiä on potentiaalisesti rajoittamaton määrä ja jokainen on rakenteeltaan yksilöllinen. Muuttujia siis on useita.

Näyttää siltä, että ohjaajat siis määrittelevät itse halutun problematisoinnin tason ja määrän. Tästä seuraa kuitenkin seuraava haaste: käsiteltävät ongelmat saavat tässä mielessä aina erilaiset vastaukset riippuen ohjaajasta, ei niinkään ryhmän koostumuksesta itsestään. Esimerkiksi ryhmä, joka saa tutkia jotakin ongelmaa kuusi tuntia, voi saada hyvinkin erilaisia vastauksia kuin ryhmä, jolle aikaa on annettu enemmän. Ohjaajan päätös on ratkaiseva.

Miten siis on, voidaanko havaita jokin raja-arvo, jonka yli ei tulisi problematisoinnissa mennä? Kuten Inayatullah itse toteaa [38], halvaantuminen on merkki siitä, että eri kerroksiin perustuvien toimintatapojen suunnitteluun varattu aika on ollut riittämätön. Kyseessä on siis eräänlaisen balanssin löytäminen problematisointiin ja siitä saatujen tietojen hyödyntämiseen käytettävän ajan kesken. Kyseinen tasapaino lienee jälleen ohjaajariippuvainen, mutta tiedostettaessa, että tällainen tasapaino on kyettävä löytämään, ollaan jo hieman helpommassa asemassa kuin täysin ilman kriteeriä.

Problematisointia ei saa siis päästää ikään kuin laukkaamaan täysin vailla päämäärää. Annettu aikaraja on tärkeä tekijä, jonka puitteissa toimiminen mahdollistaa tuottavan työskentelyn. Kuitenkin myös itse aikaraja voi muokata saatuja vastauksia. Lienee turvallista sanoa tiettyyn rajaan asti, että problematisointiin käytetty aika korreloi saavutetun "syvyyden" kanssa. Luonnollisesti jossakin vaiheessa syvyyteen porautuminen hidastuu mateluksi ja pysähtyy kokonaan. Olennaisen saavuttaminen voi kuitenkin viedä aikaa, jota on syytä varata tarpeeksi. Vastausta kysymykseen: "Mikä on tarpeeksi?" ei voida muotoilla muutoin kuin toteamalla, että tehtävä on suoritettava annetun aikarajan puitteissa, ja että aikaraja on myös annettava. Muutoin seuraa hortoilua myyttien lomassa vailla päämäärää ja takarajaa.

4.2.3 Empirismi, uutuus ja CLA

Kolmas Inayatullahin ongelma koskee sitä, että hänen mukaansa puhtaasti empiristisestä taustasta tuleville toimijoilla voi olla ongelmia CLA:n tasojen kanssa, sillä he katsovat maailman rakentuvat toisin. Haasteita on erityisesti juuri sellaisten merkitysten näkemisellä todellisuudessa, joita ei voida paljastaa tai todentaa luonnontieteen keinoin. Luonnontieteen lähtökohtana on olla kiinnostumatta merkityksistä ja tutkia ainoastaan sitä mikä on välittömästi havaittavissa. [39]

Hieman samaan tapaan Inayatullah näkee haasteita siinä, että tulevaisuudentutkimuksen uusille tulokkaille CLA voi tuntua luovuutta tukahduttavalta johtuen sen kategorioissa tapahtuvasta toiminnasta, joissa ei ole niinkään tilaa vapaalle visioinnille. Inayatullah toteaa CLA:n olevan yksinkertaisesti liian hankala metodi joillekin toimijoille, erityisesti ajoittain empiristeille, jotka näkevät maailman binäärisesti totena tai ei-totena. Samoin CLA voi tuntua postmoderneille relativisteille ongelmallisena, sillä

[38] Inayatullah 2004, 44.
[39] Inayatullah 2004, 41-42.

he saattavat hylätä faktat kerta kaikkiaan, jolloin CLA:n vertikaalinen katsaus voi näyttäytyä vailla merkityksiä. CLA kuitenkin pyrkii löytämään tilan kaikille näille näkemyksille. Se ei hylkää kumpaakaan ääripäätä, vaan pitää niitä saman jatkumon eri osina. [40]

4.2.4 Myyttitason haasteet

Kerrokset, joita CLA:ssa käytetään, on muotoiltu neljään osaan. Kaksi "ylempää" ja kaksi "syvempää" kerrosta. Suurin kysymysmerkki itse kerroksissa lienee kolmannen ja neljännen kerroksen välissä. Siinä missä litanian pinnallisuus ja sosiaalisten syiden mekaanisuus on helposti nähtävissä, ei ole selvää, miksi kolmas ja neljäs taso on erotettu toisistaan. Maailmankuva ja myytit ovat luonnollisesti eri asioita, mutta millä tavalla? Syntyykö maailmankuva siitä, että taustalla vaikuttavat määrätyt myytit, vai onko maailmankuva jollakin tavalla vuorovaikutuksessa myyttien kanssa, ruokkien niitä? Perimmäinen kysymys on juuri siinä, ovatko myytit todella "syvin" taso?

Viittaamme puheessamme erilaisiin myytteihin ja puhuessamme tarkoitamme niillä erilaisia asioita. Mikäli myytit kuitenkin ymmärretään juuri joksikin, joka selittää jollakin perustavalla tavalla maailmaa, on se luonnollisesti yksilön maailmankuvan lähteenä. Ihminen, jolle perustavana myyttinä on maailman näkeminen syklisenä ja muuttumattomana, toimii toisin kuin ihminen, jolle maailma on dynaaminen, muuttuvainen ja matkalla määrittämättömään tulevaisuuteen.

Myytit voidaan kuitenkin ymmärtää myös toisin. Mikäli niitä pidetään vain jonkinlaisina vaihtuvina uskomuksina maailman luonteesta, ei näytä järkevältä pitää niitä kovinkaan syvällä tasolla CLA:ssa. Myytti tiedostamattomana peruskivenä kulttuurissa on eri asia, kuin myytti jonakin uskomusjärjestelmän perusrakennuspalikkana. Mikäli myytti olisi jälkimmäisen kaltainen, vaihtuisi se maailmankuvan mukana. Myyteilläkin on toisin sanoen eri tasoja.

Lienee turvallista olettaa, että myös litanian tasolla on myyttejä, jotka ovat erilaisia ja "pinnallisempia" kuin ne myytit, joita käsitellään neljännellä tasolla. Pinnallisia myyttejä voivat olla esimerkiksi valtion perustamiseen liittyvät myytit, jotka eivät perusta yksilön maailmankuvaa samalla tavalla kuin vaikkapa uskonnolliset myytit. Samoin myös yhteisistä kokemuksista voi syntyä myyttejä tavalla, jotka rakentavat henkilön minäkuvaa, vaikka kyseiset myytit eivät ole, eivätkä voi olla, sisällä kulttuurin tai sivilisaation syvärakenteissa. Omakohtaiset voimakkaat kokemukset muokkaavat yksilöä jopa enemmän kuin jotkin "alkumyytit". Voidaan siis sanoa, että tietyt myytit voivat olla etuoikeutettuja toisiin nähden yksilötasolla, mikä voi vaikuttaa saatuihin johtopäätöksiin. Omia henkilökohtaisia myyttejä voi kuitenkin olla mahdotonta tunnistaa, mutta niiden vaikutusta ei voida vähätellä.

Neljännellä tasolla on myös vaarana, että CLA:n kautta asioista havaitaan myyttisellä tasolla merkityksiä, jotka virheellisesti tunnistetaan vääräksi myytiksi. Virheellinen "tieto" ei ole tietoa, jolloin myös siihen perustuvat oletukset ja johtopäätökset ovat virheellisiä. Myyttisellä tasolla liikkumiseen tarvitaan oletettavasti hyvinkin laaja tuntemus kulttuurin historiasta ja sen merkityksellisistä myyteistä. Ilman näitä tunnistaminen ei ole mahdollista. CLA:n voidaan siis katsoa vaativan käyttäjältään paitsi laajaa yleissivistystä, myös kykyä soveltaa tuota sivistystä neljännellä tasolla. Vaikka jokin myytti vaikuttaisi koko sivilisaatioon, ei voida olettaa, että useimmat sivilisaation jäsenet kykenisivät välttämättä tunnistamaan tuota myyttiä tai sen vaikutuksia heidän ajatteluunsa. Määrätyllä tavalla CLA:n edellytyksenä

[40] Inayatullah 2004, 44.

on tietty yleistiedon määrä, jota ilman sen käyttäminen on hankalaa, kenties mahdotonta, ja huonoimmassa tilanteessa jopa virheellisiä päätelmiä tuottavaa.

CLA:n myyttitasolla on siis kaksi ongelmaa, jotka molemmat liittyvät tietoon: ensimmäisenä ovat omakohtaiset myytit, joiden syntyminen on omissa kokemuksissa, jotka voivat olla unohtuneet kauaksi muistin sumuiseen periferiaan. Toiseksi on sen tosiasian ymmärtäminen, että myyttien tunnistaminen vaatii ennakkotietoa myyteistä, jota ei voi olla ilman laajaa tuntemusta kustakin kulttuurista. Tämä edellyttää toki näkökannan, jonka mukaan myytit ovat kulttuurisidonnaisia, mutta siinä tapauksessa, että näin ei olisi, voisi myyttejä yksinkertaisesti olla mahdotonta tunnistaa.

Näistä kahdesta näkökohdasta käsin neljännellä tasolla operoiminen vaikuttaa haastavalta. Vaikeuksien kautta voidaan kuitenkin saada erittäin mielenkiintoisia näkökulmia sekä nykyisyyteen että tulevaisuutta koskeviin kuviin. CLA ei kuitenkaan tästä näkökulmasta ole niinkään "koko kansan" työkalu, vaan vaatii taustalle vahvan jo ennestään vahvan ymmärryksen kulttuuriin liittyvistä syvistä kertomuksista.

5. Yhteenveto

Causal Layered Analysis on Sohail Inayatullahin kehittämä jälkistrukturalistinen ja kriittinen tulevaisuudentutkimuksen metodi, jossa käsiteltävä asia tai ongelma jaetaan neljään vertikaaliseen tasoon. Ensimmäisellä tasolla tarkastellaan ongelman pinnallisia ilmaisuja, jotka saavat usein muotonsa median ja poliitikkojen muokkaaminen. Tätä tasoa kutsutaan litaniaksi. Toisella, sosiaalisten syiden tasolla, tutkitaan ongelman virallisia ja mekaanisia selityksiä, jotka rakentuvat kyseenalaistamattomille maailmankuville ja oletuksille. Kolmannella tasolla tarkastellaan ongelmaa koskevia maailmankuvallisia tekijöitä ja pyritään tulemaan niistä tietoiseksi. Viimeisellä tasolla tarkastelun kohteeksi otetaan myytit, joiden kautta pyritään ymmärtämään niitä syvälle juurtuneita käsityksiä ja uskomuksia, jotka muokkaavat kaikkia ylempiä tasoja. Liikkumalla näiden tasojen välillä käsiteltävää ongelmaa ja sen konstituoivia diskursseja problematisoidaan, jotta asiaan voitaisiin saada uusia, kenties heikommassa asemassa olevia, näkökulmia.

CLA:n vahvuuksiin kuuluu tilan luominen kyseenalaistavalle keskustelulle perinteisten ajatusmallien osalta. Pyrkimys kohti ajattelullisten ja maailmankuvallisten syvärakenteiden tunnistaminen auttaa vapautumaan niiden rajoituksista. CLA:ta käyttäen voidaan saada aikaan rikkaampaa ja laajempaa materiaalia tulevaisuudentutkimuksen skenaarioita ajatellen. Ihanteellisessa tapauksessa CLA on mahdollistanut irtaantumisen käytännöstä, jossa tulevaisuus nähdään yksinkertaisesti uutena nykyisyytenä, ilman mainittavia muutoksia maailmankuvassa tai ajattelumalleissa. Uudet tietämisen tavat mahdollistavat täysin uudenlaisten ratkaisumallien kehittämisen käsillä oleviin ongelmiin.

Heikkouksiensa osalta CLA on lähellä vahvuuksiaan. Liiallinen problematisoiminen ja perehtyminen käsiteltävien asioiden taustalla oleviin rakenteisiin voi johtaa halvaantumiseen, joka johtuu siitä, että aikaa ei ole käytetty toimintamallien kehittämiseen saadun informaation pohjalta. Toisin sanoen on jääty pelkästään tutkimaan asiaa itseään kykenemättä irtaantumaan sen syövereistä. On ikään kuin jääty problematisoinnin vangiksi.

CLA voi myös tuntua haastavalta metodilta sellaisille yksilöille, joiden taustana ovat puhtaat empiiriset tieteet. Merkitysten liittäminen reaalimaailmaan voi tuntua heistä vieraalta, jopa epämiellyttävältä. Toisaalta myös postmodernismia kannattavat ääriskeptikot, jotka kieltävät faktojen olemassaolon, saattavat nähdä CLA:n tasojärjestelmän vieraana itselleen. CLA pyrkii kuitenkin huomioimaan nämä eri maailmankuvalliset tarkastelutavat ja tuomaan ne yhteen vuoropuhelua ja tarkastelua varten.

Myyttitasolla CLA sisältää tiedollisia haasteita, joihin liittyvät omakohtaisten myyttien erottaminen universaaleista ja myyttien tunnistaminen oikein. Omakohtaiset myytit värittävät ihmisen maailmankuvaa olematta kuitenkaan jaettuja missään merkityksellisessä mielessä. Niitä voi olla mahdotonta tunnistaa ja silti ne "tahraavat" universaaleja myyttejä operoitaessa neljännellä tasolla.

Samoin neljännen tason myyttien tunnistaminen vaatii etukäteistietoa näiden myyttien ominaisuuksista, jotta ne voidaan tunnistaa oikein. Tämä puolestaan edellyttää yleissivistystä, joka on tasolla, jota kaikilla ei välttämättä voida uskoa olevan. CLA voidaan siis nähdä jossakin mielessä elitistisenä työkaluna, vaikka tätä Inayatullah ei todennäköisesti tarkoittanut kehitellessään metodiaan. Se on kuitenkin sisäänrakennettuna siinä tavalla, jota ei voida kiertää tai ohittaa.

6. Lopuksi

Causal Layered Analysis on antoisa työkalu niille, jotka kykenevät sitä käyttämään. Se ei ole universaali väline siinä mielessä, että sen käyttäminen vaatii määrättyä yleistiedon tasoa ja valmiutta nähdä maailmassa muutakin kuin vain fysikaalisen ulottuvuuden. CLA on rajoituksistaan huolimatta kykenevä syventämään ymmärryksen tasoa lähestulkoon mistä tahansa käsiteltävästä asiasta, mikä voi suuresti auttaa hahmoteltaessa erilaisia skenaarioita tulevaisuutta varten.

CLA itsessään ansaitsisi tulla tutkituksi omista lähtökohdistaan käsin. Sen sisällä ja sen rakenteissa on asioita, joista ei vielä olla tietoisia, mutta jotka silti vaikuttavat sen käyttäjän työskentelyyn. CLA:n itsensä problematisointi lienee tervetullutta, sillä metodina CLA soveltaa sitä kaikkeen muuhunkin.

Todellisuuden tasojen hahmottaminen ei ole helppoa, mutta se on palkitsevaa. Parhaat saavutukset maksavat aina eniten. CLA:n kyky rikastuttaa sekä tulevaisuudentutkimusta että ymmärrystämme nykyisyydestä on kiistaton. Tästä syystä se ansaitsee tulla kritisoiduksi.

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ISBN 978-952-249-423-8
ISSN 1797-1322

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