



Aalto University
School of Arts, Design
and Architecture

Death to **Unsustainability:**

Identifying Sustainability Hindrances in the Finnish Funeral Industry

Bachelor's Programme in Design
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Bachelor's Thesis
2023

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Title: Death to Unsustainability: Identifying Sustainability Hindrances in the Finnish Funeral Industry

Department: Department of Design, and Art and Media

Degree programme: Bachelor's Programme in Design

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Year: 2023

Number of pages: 56+24

Language: English

Abstract

In the light of the ongoing climate crisis and the reduction of greenhouse gas emissions, cemeteries will have to transform towards greener burial practices. Both traditional coffin burial and cremation have been found to contribute to greenhouse gas, and other harmful emissions. In recent years these emissions have been addressed by multiple design and technology driven developments that build on natural burial principles. However, In the Finnish funerary services these emerging solutions are largely absent. Furthermore, the need for sustainable alternatives in the Finnish funerary services has been previously established through academic works by other designers. One possible reason for the lack of sustainability in the Finnish funerary services is the complexity of the services, and the complicated nature of sustainability issues. To overcome the complexities of the services and sustainability issues, this thesis adapted a systems thinking mindset in the design research approach that further investigated the hindrances for sustainable developments in the Finnish funerary services.

Systems thinking is a holistic approach that has often been used when analyzing the interaction of various parts in a system. The multidisciplinary approach of systems thinking is seen as an ideal tool in sustainability issues that stretch across different sectors of larger systems. Systems thinking is compatible with the second generation of design thinking, where the designer functions as the facilitator of knowledge. Subsequently, this thesis used qualitative research in the form of semi-structured interviews with experts from the Finnish funerary services. The interview data was analyzed through thematic analysis where Meadows' places to intervene in a system was used as a framework in the identification and description of sustainability hindrances.

The analysis of the gathered data revealed hindrances in nearly all areas described by Meadows. The least severe of the findings were the lack of resources and the general infrastructure of the services. Delays in the spreading of new ideas and changes to the law were also identified as obstacles for sustainability. The establishment of new cemetery areas was found to support new sustainable developments. Therefore the lack of establishment of new areas, in parts due to increase of cremations, was categorized as an impediment. In addition, cremation was found to be a self reinforcing phenomenon, which further suppresses the development of other more sustainable practices. The workers' access to, and the bereaved time of receiving, certain information was also found to hinder sustainable practices. Secularized societies' lack of representation was also found to suppress the emergence of sustainable alternatives. Various aspects of the funerary law and the churches' indirect power over them was also discussed as limiting for developments. The law against financial gains in the services was found to limit self organization and the emergence of new alternatives within the industry. The goal of the system was suggested to be burial at lowest cost, which hinders some sustainable alternatives. Finally, the established paradigms within which the service users and workers operate under was found to restrain the emergence of new traditions.

Keywords: sustainability hindrances, funerary services, sustainable cemetery, green burial, burial practices

Acknowledgments

I would like to dedicate this thesis to my Mom.

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1. Introduction

According to the United Nations, Climate change is the defining crisis of our time, and is happening rapidly (The United Nations, 2019). To avoid the devastating consequences of the current trajectory, the UN and the scientific community is calling for fundamental transformation in all aspects of society, from food growth to the powering of the economy. The leading cause for climate change is the past decades with rapid development in technology and the subsequent greenhouse gas emissions (The United Nations, 2019). However, according to the United Nations, new technology is also what will guide humanity to a sustainable world. According to António Guterres, the secretary-general of the United Nations, greener technological substitutes for 70% of today's emissions already exist (Guterres, 2019). The intergovernmental panel on climate change found that land use contributed between 13-21% of the total greenhouse gas emissions between 2010-2019 (IPCC, 2023). One area of land use often forgotten in the context of sustainability is cemeteries. Cemeteries are a form of land use that contribute to greenhouse emissions and that will also have to transform towards more sustainable burial practices (Oliveira et al., 2013).

The environmental impact of burial depends on the method used in the disposal of the body, as well as the chosen resting place. Cremation is a popular method of burial, which releases greenhouse gasses as well as other pollutants that pose a risk to the environment (Achawangkul et al., 2016, Mari & Domingo, 2010). In comparison, traditional coffin burial initially produces less greenhouse gas emissions, however, the cosmetic maintenance of the gravesite results in continuous greenhouse gas emissions after burial (Livesley et al., 2010, Milesi et al., 2005). Natural burial and natural cemeteries have the potential to reduce the emissions related to burial, in addition to restoring the cemeteries' capacity in providing ecosystem services (Clayden et al., 2018). In recent years, the principles of natural burial have been adapted for different products, services and technologies that aim to reduce the environmental impact of burial. However, in the Finnish funerary services the implementation of these emerging solutions is largely absent.

In Finland responsibility for the maintenance of public cemeteries is given, by the state, to the Evangelical Lutheran Church of Finland (ELCF) according to the Finnish burial act (HautL 2:3§). Subsequently, around 98% of the deceased are buried in church cemeteries (Aaltonen, 2005). Out of the In 57 851 deceased 2022, 40,35% were buried in traditional coffin burial, while 59,42% were cremated. In an effort to reduce the emissions related to burial the ELCF has developed a management guide for the maintenance of their cemetery (Suomen Evankelis-Luterilainen Kirkko, 2023). The ELCF also issues environmental diplomas for parishes that follow the given prerequisite, this practice was established in 2001 as an incentive for parishes to reduce their environmental impact (Sipiläinen, n.d.). Still, in 2019 after examining the near future needs for development within the Finnish funerary services (FFS), designer Marja Kuronen concluded that the need for sustainable alternatives is present in all aspects of the services (Kuronen, 2019).

One Likely reason for the difficulties in implementing sustainable practices into the FFS is the complexity of the system, which was documented and illustrated by Kuronen in her work (2019). The analysis of complex systems often utilizes systems thinking as part of the research method (Allen, 2023). In addition, Systems thinking is often used when dealing with complex issues such as sustainability (Abson et al., 2017). Systems thinking is a holistic

approach which examines systems based on an understanding of the linkages and interactions between single elements within the system (Allen, 2023).

This thesis utilizes a systems thinking mindset in its design research approach to further investigate the hindrances for sustainable practices in the FFS. The research question this thesis sets out to answer is “What are the current hindrances for sustainable developments in the Finnish funerary services?”. The research question is answered through qualitative research including interviews with experts from the FFS. The expected outcome is a framework of hindrances that aims to inform both the developers of designs and technologies, and stakeholders within the system, of the current obstacles facing sustainable practices. By informing all parties with this information, this thesis aims to aid in future successful implementation of new sustainable practices into the FFS.

In the next section of this thesis, literature review, the environmental impact of the FFS is further investigated. In addition, the literature review will establish the use of systems thinking in the context of this thesis. Subsequently, the methods section is used to describe how semi-structured interviews and the following analysis was conducted to answer the research question. Thereafter, the found hindrances for sustainability developments in the FFS is presented in the findings section. Finally, the limitations and outcomes of the research are discussed in the discussion and conclusion section.

2. Literature Review

A literature review was gathered to investigate the environmental sustainability of the FFS and to further elaborate the use of systems thinking within the context of this thesis. The aim of the literature review is to inform the reader on sustainability issues and developments in burial practices, to investigate the current situation in the FFS regarding sustainability and to justify the use of systems thinking within the design research conducted. Furthermore, the use of systems thinking in sustainability context is justified and the concept of leverage points is introduced. Subsequently, the literature review is composed of seven sections and a summary, the different sections and their content is detailed in Table 2.1 below:

Literature Review Structure and Content:

2.1.	Sustainability of Burial	Explores burial in the context of sustainability, and introduces the principles of natural burial
2.2.	Design and Technology Interventions	Introduces sustainable design and technology interventions present in the funerary industry
2.3.	Finnish Funerary Services	Introduces the Finnish Funerary Services and evaluates its sustainability
2.4.	Systems Thinking Approach	Justifies the use of systems thinking to explore hindrances in the FFS
2.5.	Systems Thinking in Design Research	Situates the use of systems thinking in the context of a design thesis
2.6.	Systems Thinking and Sustainability	The use of systems thinking is justified in sustainability context
2.7.	Leverage Points	Leverage points are introduced as a framework for the identification of hindrances in the FFS
2.8.	Summary	Summarizes the key findings of the Literature review

Table 2.1: Literature Review Structure and Content

2.1. Sustainability of Burial

A review on academic studies from 5 continents (Asia and Antarctica not included) examined the environmental pollution caused by cemeteries and found that traditional burial methods can have a direct negative effect on soil and underground water (Franco et al., 2022). This pollution, in the case of coffin burial, happens mainly through leachate, a contaminated liquid formed through water percolation of the disposed matter (Oliveira et al., 2013). The leachate was found to carry several pollutants, from organic and inorganic ions, to different bacteria

and viruses (Oliveira et al., 2013). Although these pollutants can disperse differently in the soil depending on textural properties and other variables, they are a cause for concern for local wildlife and nearby residents (Franco et al., 2022).

An alternative to traditional burial methods is cremation. Cremation produces effluents and gasses such as combustion gasses (NO_x , CO, SO_2 ...) and standout pollutants such as heavy metals and polychlorinated dibenzo-p-dioxins and dibenzofurans (PCDD/Fs) (Mari & Domingo, 2010). These pollutants pose a risk to both the health of the environment and humans (Mari & Domingo, 2010). Furthermore, a study comparing different fuels in the combustion process of cremation, found that fossil fuels, electricity and biogas all produce significant amounts of greenhouse gasses during the process (Achawangkul et al., 2016).

Traditional burial methods such as coffin burials initially contribute to less greenhouse gas emissions than cremation. However, the intensive maintenance of the grave and surrounding areas in traditional cemeteries was found to be a significant contributor to greenhouse gas emissions (Milesi et al., 2005). The emissions occur mainly through fossil fuel consumption during the mowing of lawns and other cosmetic maintenance including the use of pesticides and fertilizers (Livesley et al., 2010). The high maintenance of the traditional cemetery landscape also diminishes the potential for cemeteries to provide important ecosystem services (Clayden et al., 2018).

Ecosystem services are the many varied benefits that natural environments provide for human individuals and the population. These services include; The support of soil formation, photosynthesis, primary production, and the cycling of water and nutrients; The provisioning of food, fiber, fuel, freshwater, genetic resources, natural pharmaceuticals and chemicals; Ecosystem processes such as regulation of air and water quality, pests and disease prevention; And culturally significant contributions such as cognitive development, spiritual enrichment, recreational and aesthetic experiences (Millennium Ecosystem Assessment, 2005). Cemeteries' capacity to provide ecosystem services is especially important in urban areas, where the space for natural areas is limited (Clayden et al., 2018). Furthermore, Cemeteries are superior to public parks in providing ecosystem services in urban areas, this is due to the cemeteries' dynamic landscape (Tarlow, 2000). However, the dynamic landscape in traditional cemeteries is disrupted by high maintenance. This maintenance weakens the potential of the cemetery to contribute ecosystem services to the surroundings. Natural burial and natural cemeteries have the potential to restore the cemeteries' capacity in providing ecosystem services (Clayden et al., 2018).

In natural burial the deceased are buried in a natural environment in a manner which does not inhibit decomposition (Harker, 2012). The remains of the deceased are naturally recycled by the microbiota in the soil and surrounding wildlife (Harker, 2012). In contrast to traditional burial where the landscape functions to uphold the memory of the deceased, in natural burial the focus remains on upholding the natural landscape itself (Clayden et al., 2018). Therefore, natural burial sites call for reduction in maintenance and an increase in the natural growth of the areas which results in a wider range of landscape when compared to traditional cemeteries (Clayden et al., 2018). Furthermore, the inclusion of natural burial areas within traditional cemeteries has been shown to move public acceptance towards less maintained areas within the cemetery space, thereby increasing the cemeteries potential in delivering ecosystem services (Clayden et al., 2018). In addition, natural cemeteries in urban areas were found to be a refuge to endangered animal and plant species, and the land areas were found to play a key role in their conservation (Löki et al., 2019). A cultural transition towards natural burial

cemeteries would decrease the pollution from maintenance and increase the area's delivery of ecosystem services within the funerary industry. However, the inclusion of natural burial practices within urban cemeteries is challenging due to the lack of space for development of new practices, and lack of new areas for cemetery development (Clayden et al., 2014).

As discussed there are significant greenhouse gas emissions related to traditional burial practices and cremation. Natural burial methods reduce emissions related to burial while also providing ecosystem services. The principles of natural burial have been adopted by different designers and technology developers around the world. Some examples from these developments are examined next. Thereafter, we will look at the implementation of these developments into the FFS.

2.2. Design and Technology Interventions

In addition to the academic works related to sustainable funeral practices, there is a plethora of design and technology interventions meant to increase the sustainability of burial practices. One area within the design interventions is the use of mycelium as building material for products in the funerary industry. Loop Living Cocoon™ is a coffin produced out of mycelium which after contact with groundwater, provides ideal conditions for bacteria and mycelium to break down human remains (Loop Living Cocoon, n.d.). In contrast to traditional coffins, the Living Cocoon provides an ideal bioreactor for the decomposition of the dead bodies. Furthermore, the mycelium is able to bind pollutants such as heavy metals thus avoiding pollution of groundwater (Loop Living Cocoon, n.d.). The Loop-biotech company also produces The Loop EarthRise™, which is an urn grown from mycelium. The urn also contains a seed that is meant to grow into a plant drawing nutrition from the urn and deceased (Loop EarthRise™, n.d.). Similar to the Loop Living Cocoon, The Infinity Burial Project by Jae Rhim Lee explored the concept of mycelium breaking down the body after burial (Lee, 2011; Rogers, 2016). The idea of using mycelium in burial might have first been introduced to a larger audience by The Capsula Mundi (Capsula Mundi, n.d.; Rogers, 2016). The project led by Italian artists Anna Citelli and Raoul Bretzel was first showcased in 2003. The project involves burial of a body in fetal position, inside an egg shaped mycelium pod sprouting a tree from its top side (Capsula Mundi, n.d.).

Another design intervention that calls for environmental sustainability in the funerary industry is the Acacia Remembrance Sanctuary (McGregor Coxall, n.d.). Created by architecture firms CHROFI and McGregor Coxall for Sydney, Australia, this service oriented cemetery challenges the conventions of traditional practices (Mairs, 2016). The cemetery model builds on secularization of society and uses the conservation of and interaction with nature as the central form of remembrance of the deceased (Mairs, 2016; McGregor Coxall, n.d.). The proposal uses GPS instead of headstones to mark the buried, and has elevated pathways raised beyond the forest floor to minimize human impact on the natural area (Mairs, 2016; McGregor Coxall, n.d.). In addition to these and other features, the facility would also contain the latest in management strategies. Such strategies include the self provided renewable energy, and black and gray water recycling (McGregor Coxall, n.d.). The project has been highly regarded in the architecture and design community, and won WAN architecture award in 2016 in the category of Future Projects Commercial Award.

In addition to design interventions such as the use of mycelium and the Acacia Remembrance Sanctuary, there are multiple emerging technologies for more environmental burial practices.

One emerging technology is human composting, which uses wood chips and other starter materials to turn human remains into soil (Layne, 2019). Human composting was legalized in the state of Washington in 2019, and is currently offered in a few states as a less pollutive alternative to cremation and traditional burial (Layne, 2019; Kiley, 2019). Another emerging technology for more environmentally conscious burial is alkaline hydrolysis, also known as aquamation or water cremation (Oster, 2020). In alkaline hydrolysis the deceased is suspended in an alkaline liquid which is heated to dissolve the body into a sterile watery liquid and bones (Campbell, 2018; Oster, 2020). Subsequently the watery remains can be disposed through the sewage treatment plants, while the bones are pulverized and can be disposed of similarly to cremation remains (Campbell, 2018). The technology is currently available in several states across the US and Canada (Oster, 2020). Cryomation or cryomation is a third alternative technology to traditional burial practices. In cryomation the body of the deceased is suspended in liquid nitrogen after which the frozen body is dispersed into pieces which is then buried (Rumble et al., 2014). Compared to the other technologies cryomation is in its infancy, and was in 2019 granted funding for a 3 year research programme at the University of Hertfordshire (Cryomation, 2019; Rumble et al., 2014).

The presented technologies and design interventions all address sustainability within burial practices. The forthcoming of these types of interventions suggests that there is an emerging demand for more sustainable burial practices world wide. Next the Finnish Funerary Services will be examined and its sustainability addressed.

2.3. Finnish Funerary Services

In 2019 Designer Marja Kuronen examined the near future needs for the development of the Finnish funerary services. Kuronen concludes that there is a clear demand for environmentally-friendly and sustainable solutions from both customers of the services and society as a whole. Kuronen goes on to elaborate that the need for sustainability penetrates all services and is reflected in various ways. According to Kuronen, in addition to environmental concerns, the most prominent need for sustainability comes from the relationship with nature as a replacement for religion in rituals. Ritual centered around sustainability creates meaning for the non-religious which is a growing part of the population in a secularizing society (Kuronen, 2019).

In Finland responsibility for the maintenance of public cemeteries is given, by the state, to the Evangelical Lutheran Church of Finland (ELCF) according to the Finnish burial act (HautL 2:3§). According to this act, the ELCF may charge for burial services; however, the fees must be limited to the cost incurred in the production of the services (HautL 2:6§, 3:8§). The Finnish government provides additional funding to the ELCF for the production of funeral services and maintenance of public cemeteries (Suomen Evankelis-Luterilainen Kirkko, 2023). The additional funding provided by the Finnish government to the ELCF reached 122,7 million euros in 2023. 112,5 million of the funds were divided between church parishes according to the size of the church municipality (Suomen Evankelis-Luterilainen Kirkko, 2023). The funds received by the parishes are intended for the maintenance and development of cemeteries, tasks related to the maintenance of the population register, and maintenance of buildings and chattels of cultural and historical value.

In Finland around 98% of the deceased are buried in church cemeteries (Aaltonen, 2005). Regardless, any religious or non-religious organization is allowed to establish and run their

own cemetery (HautL. 3:8§). The establishment of a new cemetery for an outside organization is however difficult, due to the burial act limiting cemeteries from obtaining financial gain. Furthermore, the charges for funerary services can only be as high as the cost for providing the service (HautL 2:6§). Subsequently, the establishment of new cemeteries by other organizations than the Evangelical Lutheran Church of Finland, is costly with no possibility for return on investment. Subsequently, the vast majority of all cemeteries in Finland are controlled by the ELCF.

Since the vast majority of the cemeteries in Finland are governed by the Evangelical Lutheran church, this thesis considers these public cemeteries as the main representation of the Finnish funerary services. Subsequently the research conducted focuses on elements within the public funerary system governed by the Evangelical Lutheran Church. The ELCF also keeps statistics on the distribution of deceased in Finland. The distribution of deceased in 2022 is presented below in figure 2.1.

2022 Distribution of Deceased in Finland:

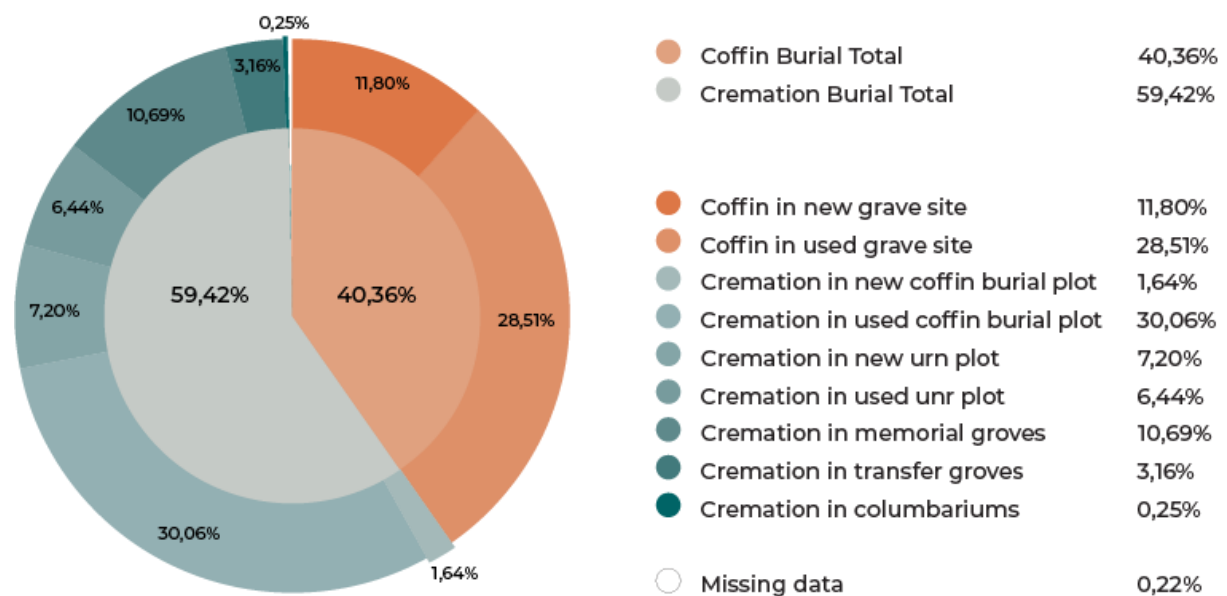


Figure 2.1: 2022 Distribution of Deceased in Finland. Data gathered from Hautaustoimi ja Metsät 2022 (Kirkon Tilastopalvelu, 2023)

In Finland 57 851 deceased were buried in 2022, 40,35% of the deceased were buried in a traditional coffin burial (Kirkon Tilastopalvelu, 2023). As previously established, pollution by coffin burial happens mainly through leachate and the greenhouse gas emissions from intensive maintenance (Franco et al., 2022; Milesi et al., 2005). In Finland the responsibility of the local cemeteries maintenance falls on the individual parishes. Individual parishes are required by the church legislation to develop a management guide for the maintenance of their cemetery (Suomen Evankelis-Luterilainen Kirkko, 2023). To guide the parishes in developing this management plan, organizations within the funerary industry developed the “Guide to preparing a cemetery management plan” (Hautausmaan Hoitosuunnitelman Laadintaopas)(Tajakka, 2022). The guide also introduces the church's environmental diploma, which parishes can apply for to certify their environmental efforts (Tajakka, 2022). Within the criteria for this diploma is: The inclusion of less managed areas that promote biodiversity; avoiding the use of chemicals; preferring the use of battery driven machines; the use of

gasoline meant for these machines; and other measures (Tajakka, 2022). However, the diploma does not require areas devoted to natural burial, or the reduction of management overall. Furthermore, parishes are not obliged to have an environmental diploma, only to make a management plan. a record of how many parishes have environmental diplomas could not be found during the research for this thesis.

Natural burial was previously discussed as an alternative to traditional burial that minimizes pollution by maintenance and increases the area's production of ecosystem services. Kirkon Tilastopalvelu and the ELCF do not keep records of natural burial in Finland. One possible reason is that the information is scattered due to the parish's responsibility for their own cemeteries. Cemeteries such as the Acacia Remembrance Sanctuary where sustainability and secularization are the core values of their practices are rare and represent the forefront of natural burial practices. In Finland the inclusion of natural burial practices happen through smaller areas inside of already established cemeteries. Two examples are Kellonummi- and Honkanummen cemetery, which both contain areas for burial devoted to the preservation of the natural landscape.

Cremation has risen in popularity in Finland from 37,07% in 2008 (SHK, 2014) to 59,42% in 2022 (Kirkon Tilastopalvelu, 2023). As previously discussed, cremation contributes to greenhouse gas emissions, and the release of other standout pollutants (Achawangkul et al., 2016; Mari & Domingo, 2010). Filtering technologies for crematoria which decrease the emissions are available crematories. During the research for this thesis, proof of such filtering technology installed in Finnish crematoriums was found in only one private facility (Harju, 2019). According to the Finnish Cremation Foundation, this private crematorium is also the only crematorium in Finland utilizing natural gas, other Finnish crematoriums use fossil fuel derivatives (Krematoriosäätiö s.r., 2022).

Despite the advantages of mycelium coffins in burial, all coffins sold by the examined funeral homes in Finland are largely made of wood, or wood derived materials (eHautaus, n.d.; Hautaustoimisto Bieder, n.d.; Helsingin Hautaustoimisto, n.d.; HOK-Elannon Hautauspalvelu, n.d.; SHT-Tukku, n.d.) The available coffin choices suggest that traditional aesthetics and familiar materials are still dominant in the Finnish funeral industry. Within the funeral homes explored there were coffins marketed as “eco-friendly”. These coffins were bare wood coffins without any additional varnish or other materials. The sustainability of the coffins focus purely on material and the making of the product itself. Within the same vendors, the material selection for urns was more varying, the material selection ranged from, wood, ceramics and paper, to bio-, and sand derived composites. This variety in materials in urns may be partially explained by the variety of practices in the burial and distribution of ashes. Finally, none of the mentioned emerging alternatives for burial, composting, water cremation and cryomation, are available in Finland.

The lack of implementation of sustainable materials and technologies into the FFS suggests a discrepancy between the available technologies and the FFS ability to implement the solution. Apart from lack of emerging solutions, it is hard to assess the overall environmental sustainability of the FFS, this is due to lack of independent academic works on the topic. However, the lack of inclusion of technologies and materials suggests that there may be hindrances for their inclusion into the funerary system. Furthermore, Sustainability is not a binary measurement and regardless of the funerary systems current state, elaboration of possible hindrances for further integration of sustainable practices can be beneficial for customers, services and society as a whole. Next the complexity of the FFS as a reason for

the lack of sustainable burial options is examined, and the use of systems thinking as an approach is introduced.

2.4. Systems Thinking Approach to FFS

One Likely reason for the difficulties in implementing sustainable practices into the FFS is the complexity of the system. The complexity of the services has been documented and illustrated by Kuronen in her work, figure 2.2. The figure shows the variety of services and actors in the FFS (Kuronen, 2019). The illustration is made from the service users perspective, and omits actors in the system that are not in direct contact with the user. The mapping of the complete FFS would be a suitable thesis topic by itself, here the illustration is only used to point out that the FFS is complex. In addition, sustainability issues are also complex and rarely have a simple solution. As discussed there are multiple ways of addressing sustainability in the FFS ranging from incremental improvements, to materials and complex service solutions. To manage the complexities this thesis utilizes systems thinking.

Ecosystem Map:



Figure 2.2: Ecosystem Map (Kuronen, 2019).

Systems thinking is a holistic approach that views systems as a product of its single elements and their interconnections (Allen, 2023). Traditional scientific analysis methods which build on positivism and reductionist thinking are based on understanding individual parts of a system (Allen, 2023; Systems innovation, 2015). This type of analysis investigates systems by reducing them to their individual parts to describe the system as the sum of its constituent

elements (Systems innovation, 2015). Understanding complexities by breaking them down to fundamental parts is deeply intuitive, however, this method undermines the relationships between the individual parts (Systems innovation, 2015). In contrast, systems thinking builds on synthesis as its process of reasoning, a process which describes an object by its relation to and function within a larger system (Systems innovation, 2015). System thinking examines systems based on an understanding of the linkages and interactions between single elements within the system (Allen, 2023). Through understanding the individual parts perspectives, inter-relationships and boundaries, systems thinking creates a holistic understanding of singular outcomes (Allen, 2023). Systems thinking is especially useful in addressing wicked problems such as sustainability issues, since these types of problems are the result of complex systems and can not be efficiently addressed by any one actor within the system (Allen, 2023).

2.5. Systems Thinking in Design Research

Systems Thinking evolved with the works of Austrian biologist Karl Ludwig von Bertalanffy from General Systems Theory in 1937 (Pourdehnad et al., 2011). Since the second world war Systems thinking has been used to gain an alternative perspective to traditional analysis methods (Ackoff, 1999). In the book *Re-creating the Corporation*, organizational theorist Ackoff argues that reductionist, cause and effect, and determinist thinking is replaced in systems thinking by expansionism, producer-product, and indeterminism (1999). Additionally, as systems thinking builds on synthesis reasoning, this replaces analytical reasoning. According to Ackoff, analysis can reveal how systems work, while synthesis reveals why the system works in a particular way (1999). According to the authors of *Systems & Design Thinking: A Conceptual Framework for Their Intergration*, systems thinking willingly sacrifices the performance of one part of the system in favor of the whole system, this is in contrast to traditional management and design strategies which optimizes the performance of each part at the risk of compromising the entire system (Pourdehnad et al., 2011). With systems thinking, managers and designers may shift the focus from how individual parts act, to how the various parts interact. By addressing problems through the entire system, designers and managers can avoid unintended system wide consequences that occur from addressing problems in individual parts of a system (Pourdehnad et al., 2011). Ackoff suggests many performance improving initiatives fail, and work in opposition to the problems they are trying to solve, since addressing the problems in only one part of the system causes problems in another part (1991).

A significant difference between design thinking and systems thinking is that design thinking is not led by any specific worldview. Instead, there are many different, even contrasting concepts of what design thinking entails, common to a majority of the concepts is the human-centered heuristics (Pourdehnad et al., 2011). Deeper application of human-centered approach allows the designer to move from the first generation of design thinkers, (Described by Pourdehnad et al. as an era where the designer is the holder of knowledge) into the second generation of design thinkers, where the designer functions as a gatherer of knowledge (Pourdehnad et al., 2011). It is within this deepdive into the various stakeholders, where designers interact with the larger system, that the worldview of systems thinking and design methodologies may interplay (Pourdehnad et al., 2011). Furthermore, The authors suggest that by adopting the systems thinking world view, the designer can move into the third generation of designers, where the stakeholders become the designers themselves by interaction with other stakeholders. The role of the designer in this scenario is the facilitator

of knowledge and world views in this diverse group of stakeholders (Pourdehnad et al., 2011).

Due to the research nature of this thesis, the role of the designer is limited to the level of interaction with stakeholders as described in the second generation of design thinking. Through interviews with the stakeholders and subsequent analysis, this thesis utilizes systems thinking to gain understanding of sustainability hindrances throughout the various organizations that compose the FFS. However, the findings from this thesis is meant to inform and empower the stakeholders within the system to address sustainability issues within the system, hopefully encouraging interaction and unification towards a common goal.

2.6. Systems Thinking and Sustainability

In *Leverage Points for Sustainability Transformation*, the authors discuss how sustainability science often fails to address root causes of sustainability transformations due to their traditional single discipline perspectives (Abson et al., 2017). Disciplinary approaches to sustainability can lead to simplified understanding and solution, to complex problems with biophysical, social, economic, and political implications (Loos et al., 2014). Abson and co-authors argue that disciplinary approaches to sustainability problems frame the issues within the disciplinary boundaries, ultimately failing to include the wider, main drivers of unsustainability (2017). The authors suggest that systems thinking has the ability to view the different elements in complex systemic issues like sustainability, due to system thinkings' trans disciplinary approach. Furthermore, systems thinking is ideal for understanding the properties emerging from the interactions between multiple components of particular problems (Newell, 2012). According to the authors of *Leverage Points for Sustainability Transformation*, the value of systems thinking within sustainability issues is beyond doubt. Despite systems thinking's value to sustainability issues, the question; where change should be applied, has largely been overlooked (Abson et al., 2017). To better understand where in a system transformational applications should be applied, Abson et al. presents Donella Meadows Places to intervene in a system, as a hierarchy for the effectiveness of sustainability interventions in a system (2017).

As discussed, sustainability issues are multi disciplinary and their understanding requires multi disciplinary approaches. Although this thesis does not attempt to solve any sustainability issues, it can be expected that the hindrances to sustainability developments are also multidisciplinary. Due to system thinkings' ability to view sustainability issues across disciplinary boundaries, systems thinking was chosen as the optimal method for the examination of sustainability hindrances within the FFS. To further provide a hierarchy to the sustainability hindrances discovered by this thesis, Donella Meadow' Places to intervene in a system is used.

2.7. Leverage Points

Thinking in Systems: A Primer, by Meadows, D. describes how change can be introduced to a system through leverage points. Meadows describes leverage points as places in a system where small changes can lead to big shifts in behavior (Meadows, 2009). Meadows builds on the various works of Forrester, J. and elaborates that actors within a system are often able to intuitively locate leverage points, but tend to use them wrong, and unintentionally promote development in the unwanted direction (Meadows, 2009). Meadows argues that truly

impactful leverage points are in reality hard to describe due to their counterintuitive nature and the complexity of systems. Consequently, Meadows developed the framework of *Places to intervene in a system* (Meadows, 2009). The framework is a list of leverage points in a system, given in descending order from least to most impactful, although the author acknowledges that the impactfulness will depend on the system that is analyzed. An overview of the leverage points is presented in Table 2.2.

Meadows' Places to intervene in a system (in increasing order of effectiveness):

12.	Numbers	<i>Constants and parameters such as subsidies, taxes, and standards</i>
11.	Buffers	<i>The sizes of stabilizing stocks relative to their flows</i>
10.	Stock-and-Flow Structures	<i>Physical systems and their nodes of intersection</i>
9.	Delays	<i>The lengths of time relative to the rates of system changes</i>
8.	Balancing Feedback Loops	<i>The strength of the feedbacks relative to the impacts they are trying to correct</i>
7.	Reinforcing Feedback Loops	<i>The strength of the gain of driving loops</i>
6.	Information Flows	<i>The structure of who does and does not have access to information</i>
5.	Rules	<i>Incentives, punishments, constraints</i>
4.	Self-Organization	<i>The power to add, change, or evolve system structure</i>
3.	Goals	<i>The purpose of the system</i>
2.	Paradigms	<i>The mind-set out of which the system—its goals, structure, rules, delays, parameters arises</i>
1.	Transcending Paradigms	<i>The ability to function independent of paradigms</i>

Table 2.2: Meadows' Places to intervene in a system (Meadows, 2009).

The following explanations of Meadows' Places to intervene in a system are derived from *Thinking in Systems: A Primer*, by Meadows. The examples and explanations are indirectly quotes from the source material by the author of this thesis. To improve readability of the paragraphs the citation is given at the end of each paragraph.

12 Numbers, refers to constant parameters that can be either malleable or locked. These numbers can be thought of as the flow in *stocks and flows*. Stocks are elements of the system that can be seen, felt, counted, or measured. Point 12, numbers, refers to flows, they are actions that change the stock over a period of time. For example, A bathtub of water can be thought of as stock, while the rate of the water running out the faucet, and the water running down the drain can be thought of as two flows controlling the level of the stock. Numbers are parameters which control the stock in a system. Numbers are often the most recognized forms

of intervention in a system, and are the most frequently discussed points of leverage. However, Meadows considers them as the least impactful of all leverage points, because changing parameters of systems rarely changes behaviors of the system itself. One exception is cases where changes in the numbers have an impact on stock controlling feedback loops (Meadows, 2009).

11. Buffers, refers to the stabilizing power of the stock size relative to the in and out flow. For example, small bathtubs with a big faucet and drain are more unstable than a big tub with a small faucet and drain. Buffers are powerful leverage points, increasing the capacity of the buffer can stabilize an entire system. However, Meadows argues that the stocks are often solid entities that are difficult to change and therefore, buffers are considered to be ineffective leverage points in a system (Meadows, 2009).

10. Stock-and-Flow Structures. In the analogy of bathtubs, Stock-and-Flow structures can be thought of as the plumbing. The faucet may be turned on fully, but if the pipes cause unstable water pressure, the system will be unstable. Stock-and-Flow Structures refers to the physical structures and their arrangements which, according to Meadows, have enormous effects on a system's operations. If the physical structures of a system are poorly designed, the only way to increase the efficiency of the system is to rebuild the structures, if they can be rebuilt at all. However, physical structures are rarely leverage points in themselves, since they are structures that are slow and expensive to rebuild. According to Meadows, the leverage point is in knowing how to design efficient structures in the first place, and understanding the limitations of the existing structures (Meadows, 2009).

9. Delays in feedback loops are, according to Meadows, crucial factors which determine system behaviors. If receiving outdated information when adjusting stock, it is nearly impossible to achieve the desired stock level. The same is true if the information is timely but the adjustment is lagging. For example, receiving information from 10 minutes ago about the temperature of our bath water, maintaining a steady temperature in bath water would be difficult. Similarly, if turning the faucet had a several minute delay before the changes would be applied to the water coming out, even with timely information on temperature, bathing comfortably would be difficult. When a feedback loop is controlling a stock, a delay in the feedback process can be critical, depending on the rate of change to the stock. Meadows states that delays are powerful leverage points, however, they are rarely perceptible for change. Nonetheless, if there is a delay in the system which can be changed, changing it can cause a large effect throughout the system, sometimes even an unpredictable one (Meadows, 2009).

8. Balancing Feedback Loops are mechanisms that keep the stock near its desired levels. From this point forward, Meadows starts to describe less physical parts of a system to more informational and controlling parts. Traditionally as a system's complexity increases, so does its balancing feedback loops which keep the system steady under different conditions. Often, balancing feedback loops are inactive and only in use during times when the system is in an 'emergency' state. Still their presence is crucial for long term stability of the system. The strength of a balancing feedback loop depends on factors such as; precise and timely monitoring; the response rapidity and size; and the directness of the response. Meadows suggests that there is sometimes leverage to be found within these factors, though it is often used in favor of the minority operating within the system and not for the improvement of the system itself. Furthermore, the impact of balancing feedback loops is only relative to the

impact it is correcting against. The little hole in the side of the bathtub, that keeps the water from flowing over, will not suffice when filling the bathtub with a firehose (Meadows, 2009).

7. Reinforcing feedback loops are loops which drive system behavior in one direction by constantly reinforcing themselves. The more you have, the more you will get. It is the black mold in the bathtub which expands exponentially. Reinforcing feedback loops might be either positive or negative. Within the system these loops can drive gain, sometimes explosive, or erosion, sometimes terminal. Systems rarely let reinforcing feedback loops run their course due to their unavoidable calamity. Most often, a balancing feedback loop will correct the system behavior before disaster. According to meadows, the power most often lies in slowing down self reinforcing feedback loops and reducing growth. This is preferable to strengthening balancing feedback loops, and a far better option than letting the reinforcing loops run (Meadows, 2009).

6. Information flows are not parameters that are adjusted or loops that are strengthened or weakened. Instead, they are new loops that add a flow of information to a part of the system where the information was not flowing before. Missing information flows are, according to meadows, one of the most common causes of system malfunction. Usually it is both easier and cheaper to add, or restore, information flows, rather than rebuilding physical infrastructure. Meadows therefore regards information flows as a powerful intervention tool. However, it is crucial for the information flow to be added to the right place, and in a way which directs behavior in the wanted direction (Meadows, 2009).

5. Rules are the most defining parts of any system. Rules define the system's scope, limitations, and degrees of freedom. There are various types and strengths of rules, some are malleable some not. For example, the rules of thermodynamics are final and one has to abide by them whether one wants to or not. laws, incentives and social agreements are examples of weaker rules, which are often malleable. According to Meadows, the deepest flaws within a system can be found by investigating its rules and who has power over them (Meadows, 2009).

4. Self-organization describes the power systems have to adapt to any changes by changing itself. Self-organization within systems means the systems ability to change any of the aforementioned parameters. According to Meadows, it is the strongest form of system resilience, a system can survive almost any change, by changing itself. The material for self-organization is found through variability within the system. Variability within the system can be produced through exploration. The leverage here is powerful, but unpopular from a systems management perspective; allowing the system to freely produce variability rather than to strictly control it means losing influence over the system (Meadows, 2009).

3. Goals. The goals of the system are more influential than any of the points mentioned until now. Because, any of the aforementioned points can be twisted to ensure the fulfilling of the goals of the system. Feedback loops and other parts of the system often have their own separate goal from the rest of the system. In fact, true systems goals are hard to discover, even by the people in charge of the system. The true goals of a system are often found when looking outside of the single system perspective, and viewing the operations in a larger scale of systems thinking. Changing the system's goals drives the system towards an entirely new direction, thereby changing the system's original intent and subsequently the mechanisms for its operations. In rare cases this can be achieved by single operators within the system itself (Meadows, 2009).

2. Paradigm, the shared ideas throughout the mind of society, the unspoken assumptions. Paradigms lay the foundations upon which systems are built and their goals defined. As paradigms change so do the systems they rise from. Meadows describes how changing the paradigm of an individual can be easy, while a society will resist a new paradigm harder than any other form of change. Building on the works of Thomas Kuhn, Meadows elaborates that changing a society's paradigm can be done through; pointing at failures of the existing paradigm; acting with assurance from the new paradigm; inserting people of the new paradigm in power and places of visibility; and focusing on open minded people rather than deniers (Meadows, 2009).

1. Transcending paradigms. Keeping oneself unattached to any paradigm and accepting that one's worldview is as faulty and limited as any other. If no paradigm is right, one can choose the one(s) that will achieve the desired outcome. It is through transcending paradigms that individuals have achieved impacts that have lasted a millenia (Meadows, 2009).

This thesis will not attempt to discover the leverage points for successful sustainability transformation of the FFS due to the limited scope of the thesis. However, based on Meadows' argument that leverage points tend to be used wrong, and unintentionally promote development in the unwanted direction, the framework of Places to Intervene in a System is used to aid in the identification and description of hindrances. Furthermore the framework provides a hierarchy for the hindrances discovered and arranges them according to their severity.

2.8. Summary

The literature review was gathered to inform the reader on sustainability issues and developments in burial practices as well as investigate the sustainability of the FFS. There are significant greenhouse gas, and other emissions, related to both traditional coffin burial as well as cremation. The principles of natural burial was introduced as a method for reducing emissions and increasing cemeteries delivery of ecosystem services. There are multiple design and technology developments that build in principles of natural burial and address sustainability in burial. In Finland there is a lack of incorporation of these developments into the funerary services which suggests hindrances for sustainability in the FFS. However, further assessment of the sustainability in the services is difficult due to lack of independent research. Although, the need for sustainable options in the FFS has been documented by designers through academic exploration of future development needs. Despite the lack of academic assessments of sustainability in the FFS, the benefit of investigating the possible hindrances is apparent. Building on the work of Kuronen (2019), to manage the complexities of the FFS and sustainability, systems thinking was chosen as a method.

The role of the literature review was also to further clarify the role of systems thinking within the research context of this thesis, and to justify the use of systems thinking in sustainability issues. Furthermore, the concept of leverage points were to be introduced and their use clarified. Systems thinking was found ideal for design research with multiple stakeholder participants, considering that answering the research question requires the understanding of the different parts of the FFS and their connections. Furthermore, systems thinking is well integrable into the second generation of design thinking where stakeholders are viewed as the experts and the designer is the mediator of this knowledge. In addition, the multidisciplinary

nature of sustainability issues require a multidisciplinary approach. Therefore, this thesis utilizes systems thinking in the conduction and structuring of stakeholder interviews, to overcome the complexities of the FFS and discover their sustainability hindrances. Finally the 12 leverage points from Places intervene in a system, a framework derived from systems thinking, was presented to aid in the identification and description of hindrances as well as, provide a hierarchy for their severity. Furthermore, the framework will indicate to stakeholders how effective change in different points would be for sustainable developments in the FFS.

3. Methods

To answer the research question “What are the current hindrances for sustainable developments in the Finnish funerary services?”, an inside the industry approach was selected. Semi-structured interviews with the various stakeholders within the FFS was chosen as the method allows for the researcher to function as the mediator of knowledge. Subsequently, this study followed qualitative research methods that are consistent with the aforementioned second generation of design thinking. The second generation of design thinking is also unifiable with the chosen worldview of systems thinking, which was selected due to the complexity of the FFS and the multidisciplinary nature of sustainability issues. The methods section describes; the ethical review of the research conducted, the selection of participants through non-random maximum variety sampling, the semi-structured interviews, and the thematic analysis of the gathered data.

3.1. Research Ethics

The ethics of the research conducted was reviewed using the Ethics self-assessment in research projects guidelines provided by Aalto University Research Ethics Committee (Aalto University, 2023). These guidelines were used due to this thesis being written as part of Design BA study at Aalto university. The research conducted in this thesis was found to comply with the principles for ethical research. Furthermore this thesis strives for transparency throughout the research process. The selection of participants, collection and analysis of data, and presentation of findings, was done objectively with the described intent. The topic of death and its psychological magnitude was considered as a possible strain for the research participants. However, Ultimately it was concluded that since all research participants work within the FFS, any discussions within the topic would not cause mental discomfort or harm. Furthermore the contacting, invitation and interviews were all conducted in a manner chosen by the interviewees to ensure their comfort in the interview process. Oral and written consent for participation was taken in the beginning of each interview, and the participants were given the option to remain anonymous. None of the participants chose to participate anonymously. Nevertheless, the names of the participants are not included in this study due to the participants' representation of their position within the services rather than their individual persona.

3.2. Selection of Participants

The contacting of participants, interviews and transcription of audio to text was done in collaboration with classmate Kamilla Grämer. Both of us were introduced to the topic of death and sustainability through previous teamwork in a mutual course. Subsequently, the interest for adopting a similar topic for our theses developed. Gramers work is centered on the social sustainability of the Finnish funerary services, concentrating on the will writing to funeral service segment. During the planning phase it was noticed that both needed to contact the same participants for interviews. Due to the similarity in research topic and out of respect for the participants' time, we chose to contact and conduct the interviews in collaboration.

The participants for the interviews were chosen based on the non-random selection method of purposive sampling. In purposive sampling the researcher selects participants by deliberate choice based on the underlying characteristics and presumed knowledge of the participants (Etikan et al., 2016). The participants for the interviews were chosen based on their position and presumed knowledge of the funerary services. Furthermore, to ensure a holistic understanding of the funerary services maximum variety sampling was utilized. Maximum variety sampling is a method of purposive sampling where a heterogeneous collection of participants is selected (Etikan et al., 2016). In maximum variety sampling a variety of participants are selected within the topic of study to achieve a holistic understanding of the research area and explore the topic from different perspectives (Etikan et al., 2016). Maximum variety sampling was utilized as a method of purposive sampling to ensure the representation of different perspectives within the funerary services.

Through Maximum variety sampling, 5 different organizations in the Finnish funerary services were contacted for interviews. The different organizations were chosen based on the area of representation in the overall services. collectively the organizations chosen were meant to create an understanding of the funerary services from three perspectives; service facilitator, service, user, and service worker. Service facilitator is defined as the key organization that supervises the public funerary services in finland. This is considered as the Evangelical Lutheran Church of Finland, since they are by law assigned the responsibility for the upkeep of public cemeteries (HautL 2:3§). The category of Service worker is defined as the workers in the public funerary industry that are directly involved in the burial process and maintenance of the cemetery. The final category of service user is defined as the deceased or the grieving party. No singular organization can be defined as representative for all the workers or all the users. Therefore, the perspective of both worker and user was composed of multiple organizations that each represent a unique part in the overall funerary services. Figure 3.1 shows simplified organization illustration and can be found below.

Simplified illustration of organization representation:

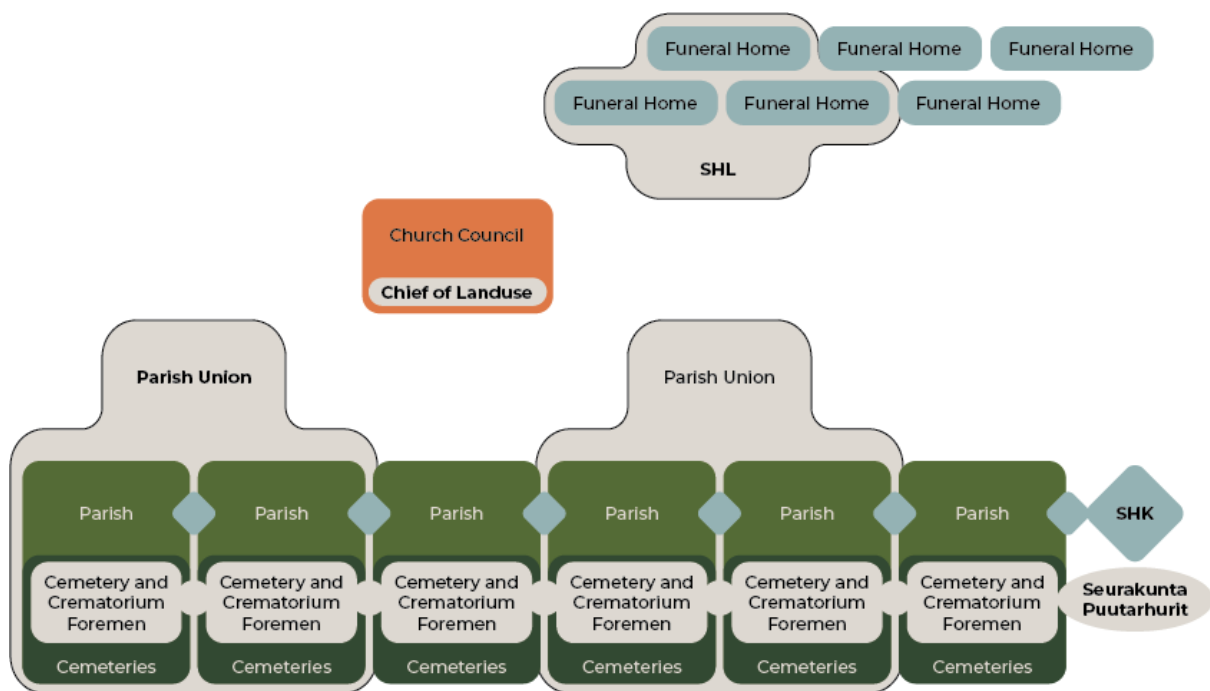


Figure 3.1 Simplified illustration of organization representation

Suomen Hautaustoiminnan Keskusliitto ry (Central association for funerary services in Finland) (SHK) functions as the central organizations for the various working communities in the Finnish funerary services. Their mission is to develop funerary services, to promote cooperations between different actors in the services, as well as nurturing and promoting funerary culture (*Suomen Hautaustoiminnan Keskusliitto Ry*, n.d.). SHK members are registered regional member associations as well as legal entities engaged in burial and crematorium activities (*Suomen Hautaustoiminnan Keskusliitto Ry*, n.d.). The main perspective represented by the SHK is that of the service workers, Due to the members of SHK being the workers within the funerary industry. However, they were considered to also possess some knowledge from the service user perspective, based on the workers experiences. The chairman of the SHK was contacted by email containing a brief description of the research topic as well as a formal interview request. Thereafter, a time and location for the interview was set.

Kirkko Hallitus, Land Use Manager within the evangelical lutheran church council was identified as a relevant contact in the funerary services through the interview conducted with the chairman of SHK. The position entails management of all the buildings and grounds that the ELCF owns, including cemetery grounds and their use. In addition, The Land Use Manager was described as the contact person within the ELCF for questions regarding funerary services. The person was chosen as the representative for the ELCF due to the leading role over the funerary services; they were considered the main representative of the service facilitator perspective in this study. The Land Use Manager of the ELCF council was contacted through email containing an interview request and a brief description of the research topic. Thereafter a time for the online interview was set.

Helsingin Seurakuntayhtymä (HSY) (Helsinki Parish Union) is an organization of the 20 individual Evangelical Lutheran parishes in Helsinki. The Helsinki parish union manages the economy, personnel, real estate, cemeteries, memberships, church records, information and communication, on the behalf of the individual parishes (Kirkko Helsingissä, 2017b). The management of cemeteries is done by the internal unit; Environment and burial services. This unit is responsible for the administration, planning, and customer service of the cemetery services within the 20 parishes. In addition, they coordinate and advance environmental developments across cemeteries in the parish union (Kirkko Helsingissä, 2017a). Since HSY represents the individual church parishes in Helsinki, they are considered as part of the service facilitator. However, they fit well into all three categories due to their direct contact with users and their own experiences as workers within the funerary system. We were contacted by the Environment and burial services unit by email, after contacting different individual parishes within Helsinki with a general interview request and a description of the research topic. Thereafter, an interview with three participants from key positions in this unit was agreed upon. The positions were Chief of Environment and Cemeteries, Assistant of Environment and Cemeteries, and The Manager of Burial Services.

Suomen Hautaustoimistojen Liitto ry (Association for Finnish Funeral homes) (SHL) functions as the organization for funeral homes in Finland. Their mission is to support their members' professional skills and operating conditions with regular training and interest monitoring. In addition, the organization aims to ensure that the grieving party of the deceased receives high-quality funeral services and equal treatment from different authorities in the industry by promoting the professionalism of funeral homes and smooth cooperation with authorities. (*Suomen Hautaustoimistojen Liitto ry*, n.d.-a). SHL's members are the

Finnish funeral home companies that are committed to following good business practices and European ethical guidelines in the funeral industry (Suomen Hautaustoimistojen Liitto ry, n.d.-b). SHL was chosen as a relevant participant of this study since they represent the interests of the service user, in addition they represent the funeral homes, which is a part of the service worker category. The Chairman of the SHL was contacted through email containing a brief description of the research topic and a formal interview request. Subsequently, a time for the online interview was decided upon.

Seurakuntapuutarhurit (Perish gardeners) is an organization of the leading officials of the parish cemeteries and parks (Seurakuntapuutarhurit, 2023). The purpose of the organization is to; raise the professionalism, education level and livelihood of its members; and advance cemetery culture by organizing presentations, discussion meetings, courses, exhibitions, and similar activities (Seurakuntapuutarhurit, 2023). Seurakuntapuutarhurit are also the source of the guidebook “Hautausmaan Hoitosuunnitelman Laadintaopas” (Guide to preparing a cemetery management plan) which acts as a model for a national management plan, which parishes and parish associations can base their cemetery management plans on (Tajakka, 2022). Because of the organization's members and positioning in the funerary system they were considered as representatives of the service worker perspective. A member of the organization's board was contacted through email containing a brief description of the research topic and a formal interview request. Unfortunately, the representative could not participate themselves but recruited their assistant for the interview and subsequently an interview was scheduled. Unfortunately, it was later understood that the recruited participant was not a member of Seurakuntapuutarhurit. However, through their work at the cemetery which closely follows the Guide to preparing a cemetery management plan, they were still considered equipped to answer questions regarding this plan and the work of Seurakuntapuutarhurit. Furthermore, as a leading gardener Honkannummen cemetery with 30 years of experience, they were considered to be fully able to represent the service worker perspective.

3.3. Interview Structure

Semi-structured interviews are a method of qualitative data collection where the written questions or topics are followed up by questions that further explore the topics in the responses. Through semi-structured interviews, the conversation can be steered by the interviewer in a direction relevant to the research (Brinkmann, 2014). Similarly, following the answers of the interviewee, the interview may produce deeper knowledge when compared to structured or unstructured interviews (Brinkmann, 2014). Furthermore, semi-structured interviews are ideal for the exploration of sensitive topics (Brinkmann, 2014).

To explore the hindrances of the Finnish funerary services, semi-structured interview format was chosen. This enables the interviewee to further express their expertise within the topic. Furthermore, semi structured interviews allow the interviewer to further pursue presented answers to investigate their potential of being hindrances in the service Lastly the format accommodates for the potentially sensitive topics discussed in the interviews.

The Interviews were all semi structures with 4 main conversation topics. Before the main topics were discussed, all interviews began by review and signing of consent forms, together with a brief description of the research topic. Thereafter, the conversation was shifted to the first conversation topic: general and organization introductions. The organization introduction

then evolved into the second conversation topic and small exercise; Mapping organizations. In this part the interviewee was asked about other organizations they have contact with, within funerary practices. This was done to gain understanding of how the different stakeholders work together and to define the various stakeholders in relation to each other. Furthermore, initiating conversation about the various organizations made it more likely that these connections would be mentioned when discussing hindrances. Post-its and paper was used to illustrate the connections, in online meetings google jamboard was utilized instead. The third conversation topic was the possible development of cemeteries and current issues. In this topic possible future developments were discussed followed by a description of limitations. In the case of the SHK interview, a conceptual funerary project called Tuonnella (Gschwender et al., 2022) was utilized to inquire about limitations. The intention of discussing the limitations from an already set perspective was to gain deeper knowledge about current hindrances. This was not done in the consecutive interviews since the discussion of current developments alone was experienced as sufficient to elaborate on relevant hindrances. The fourth conversation topic was death planning, which was mainly intended to contribute to Grämer's work. The interviews were all concluded by asking if the participant(s) had something to add to or beyond the already discussed topics. A more detailed outline of the conversation topics, and the consent form can be found in the appendix. Throughout the interviews the role of lead interviewer and note taker was naturally divided depending on the topic currently discussed and whose thesis it related to the most. The role of the note taker was to aid the lead in following up potentially interesting subtopics by asking relevant followup questions. After the interviews the transcription work was divided equally.

The interviews were all recorded by phone, in the case of online interviews the platform offered recording option was utilized in addition. The recordings were then transcribed using a transcription tool on Microsoft Word. Spoken sentences in Finnish were translated to English using google translate after transcription. Mapping of the organizations and services was done on post-it and paper during in-person interviews. Google Jamboard was utilized for mapping and other visual elements during online interviews. *Table 3.1 Data Collection* shows an overview of the data collected. In addition, the interviewees are given tags to identify them in the findings section. In the case of interviews with one interviewee, the tag refers to the interview in the order they were conducted (Tag In1 is short for Interview 1). In the interview with multiple participants the tag abbreviates the interview number and the participant (Tag In3P2 is short for Interview 3 Participant 2).

Data collection:

Organization	Position	Tag	Perspective of FFS	Platform	Duration	pages of transcript
Suomen hautausseuran keskusliitto (SHK)	Chairman	In1	Workers, some insights from users	In person, paper and post-its	1h 30min	14 (including notes after recording failure)
Church Council	Land Use	In2	Mainly	Teams,	1h	19

	Manager		facilitator	Jamboard	15min	
Helsinginseurakunta yhtymä (HSY),	Chaif of Environment and Cemeteries	In3P1	Facilitator and Insights from both user and workers	In person, paper and post-its	1h 30min	46 (including Finnish parts and english translation)
	Assistant of Environment and Cemeteries	In3P2				
	Manager of Burial Services	In3P3				
Suomen Hautausoimistojen Liitto (HSL)	Chairman	In4	User, some insights from workers	zoom, Jamboard	1h 20min	21
Honkanummen Cemetery	Chief Gardener	In5	Workers, Users	in person, no visual aids utilized.	1:20min	32

Table 3.1: Data collection

3.4. Analysis

Thematic analysis is a flexible research tool which provides a detailed and rich qualitative dataset (Braun & Clarke, 2006). Thematic analysis entails investigating the dataset and identifying similarities within and across interviews (DeSantis & Ugarriza, 2000). Thematic analysis was chosen as the preferred analysis method since it supports both the variety within and across the transcripts. In addition, the flexibility of the research tool provides the researcher the ability to systematically search for the information relevant to answer the research question. Furthermore, the structure of thematic analysis allows the researchers to adjust the method according to their own dataset and working structure.

According to Braun and Clarke, Different steps of thematic analysis are; familiarizing with the data, generating initial codes, searching for themes, reviewing themes, defining and naming themes, and producing the report (Braun & Clarke, 2006). The first step, familiarizing with the data, includes transcription of the data and reading the transcription

multiple times while noting potential ideas for recurring themes. In the second step, generating initial code, the transcripts are read and parts containing information relevant for the research is coded according to the content. In the next step, searching for themes, these codes are divided into groups consisting of similar codes. Thereafter, the generated themes are named according to their content. During this step the coherence of the codes within the themes is checked to confirm that they represent the overall theme. Thereafter the themes are reviewed and if necessary themes are reiterated. After refined themes have emerged they are clearly defined to accurately represent the findings. The reporting stage gives the final opportunity for analysis. In this step pieces of extracts are selected and presented with connections to the reviewed literature and the overall research question. For the analysis of the gathered data, these steps were modified according to the researcher's needs. Atlas.ti was used for the coding, and miro was used as visual aid in the finalization of the themes and reporting structure, extracts from atlas.ti and miro can be found in the appendix.

Familiarizing with the data

Familiarization with the data took place during the transcription, and translation, of the interviews. In addition, the data was roughly coded and divided into themes to gain an overview of the potential content. During this rough coding, The organizations and their descriptions were coded to explore the potential of miscommunication between organizations as a hindrance in the funerary systems. However, this was inconclusive and not included in the further steps. Hindrances to the development of services were roughly coded and 4 major themes emerged. In addition successful changes to the funerary services and their origin were roughly coded.

Generating initial codes

After thorough familiarization with the data, citations were selected in loose accordance to the earlier findings. However, the citations marked were not given a shorter description, the original citation was kept to preserve the full meaning of the code throughout the process. This was done to avoid loss of important details, as the hindrances were found to be complex, and one citation often described multiple hindrances.

Searching for themes

In this stage the citations were grouped into 13 themes according to their content. These themes were based on the findings from the familiarization. Although each theme was a further exploration and subdivision of the previously emerged theme. In total, 12 themes of hindrances and 1 group of examples of changes emerged.

Reviewing themes

After the discovery of the hindrances, the found material was re-structures in accordance with Meadows' 12 places to intervene in a system. Meadows' 12 points were used in the structuring of the hindrances to clarify the found information in a manner consistent with systems thinking. Furthermore, by doing so the hindrances describe the wider phenomenon behind the citations. In addition, the 12 points are arranged from least to most impactful. Therefore, utilizing the 12 points to describe hindrances, provides an overview of the severity, and the potential impact of overcoming the identified hindrance.

Defining and naming themes

A review of the data set produced 11 groups which are named after Meadows' 12 points. Within these 11 groups there are 22 themes that are discussed. There is a large discrepancy between the initial themes described (13), and the final amount of themes (22). This is due to the complexity of the hindrances. Some hindrances were found to be impacting the system on multiple of meadows' 12 points. Furthermore, many codes (citations), were descriptive of multiple hindrances, as presumed in the early phase of coding. This illustrates the necessity of both the review, and the initial reluctance to shorten citations. The naming of the 22 final themes are mentioned in the findings. Four themes carry the same name as their group, due to only one theme being assigned to this group. Some themes were only supported by findings from one interview. This can be expected from a heterogeneous sample of participants. In these cases the weight was put on the expertise on the interviewee and their area of representation in the system. No themes or codes were assigned to the final group in meadows' 12 points. However, this point is still briefly mentioned in the findings.

The final outcome of the analysis is a codebook containing all the Groups, Themes, Descriptions and Citations and their Frequency. *Table 3.2: Codebook sample* provides an extract of the codebook exemplifying the outcome of the analysis process. In the codebook, original citations from the interviews are briefly described. Descriptions and citations that contain similar data constitute themes. Themes are subdivisions of the overall group which is determined by the 12 points of Meadows. The full codebook is available in the appendix.

Codebook sample:

Group	Theme	Frequency	Description	Citation
12	22	101		
12. constants, parameters, numbers	Personell	2	Employee availability limited the potential development	There is for example a project there, a children's area, which is such a matter of my heart that I have hoped that it would be reformed and I saw that there is a lot of will and maybe the money could still be found there, but there are no employees or resources, so somewhere it hits a wall. Interview 5 p 16
			Humens reseources is mentioned as a limitation to maintenance	(On decrease on maintenance) I think it's changing little by little and by no means terribly strong, but of course there is also pressure from the fact that there are no human resources, so that is one point of view Interview 5 p 6
	Money	4	Money is limiting muslim community	I have tried to find an area that is suitable for them, but there

			from their own cemetery	are several problems that they don't have money Interview 2 p 11
			Describes the amount that is available for all of services and that it 'gets lost'	for example we too will have 12.4 millions in Helsinki, which should then be used for funerals and then for cultural and historical ones and so on. But the money is unfortunate, in that it's not earmarked, when that money comes here, it's lost in the general coffers Interview 3 Speaker 1 p 44

Table 3.2: Codebook sample

4. Findings

The findings section will discuss the hindrances discovered through the interviews and subsequent analysis. The findings will be presented in the order of where in Meadows' 12 places to intervene in a system the hindrances occur. This categorization is used based on Meadows' argumentation that leverage points in a system are often intuitively pushed in the wrong direction. Thereby becoming hindrances for the development. Furthermore the 12 points help to categorize the severity of the hindrances and indicate how effective change in different points would be for the development of the system. *Table 4.1: Findings overview* provides an overview of the findings, and provides a structure for this section, themes regarding the law in group 5 have been condensed to form one overarching theme.

The extracts from the interviews are presented with tags used to identify the interviewee. (For example: In2 is short for interview 2, and In3P2 is short for Interview 3 participant 2).

Findings Overview:

Group:	Theme	Frequency
12. Numbers	Personell	2
	Money	4
	Population size	1
11. Buffers	Buffers	2
10. Stock-and-flow	Natural conditions	2
	Unavailability of technology	3
9. Delays	Spreading of new ideas	4
	Changes to the law	2
8. Balancing feedback loops	Expanding the capacity by opening new areas	4
	Increasing the capacity by cremation	4
7. Reinforcing feedback loops	Reinforcing Feedback Loops	6
6. Information flows	Users missing information	3
		4
5. Rules	Parish regulations	6
	Law is old and non-precise	5
	Law denies	4
	Law on financial gain	7
	The Churches indirect power	6
4. Self-organization	The law on financial gain	6
3. Goals	Goals	8

2. Paradigms	User choices	8
	Leadership paradigm	4
1. Transcending paradigms	Transcending paradigms	0

Table 4.1: Findings overview

4.1. Numbers

As previously discussed, point 12. numbers refer to the constant parameters which actions change a stock over time (Meadows, 2009). Three such parameters in the cemetery system were identified that can potentially be limiting for the environmental development of the funerary practices; personnel, money and population size.

Personnel

To convert the land into suitable area for any type of burial practice, both money and personnel is needed. Personnel was mentioned twice in interview 5 as a limiting factor when discussing development of the cemetery areas:

In5

There is for example a project there, a children's area, which is such a matter of my heart that I have hoped that it would be reformed and I saw that there is a lot of will and maybe the money could still be found there, but there are no employees or resources, so somewhere it hits a wall.

In this example, the lack of personnel is mentioned as one of the reasons for the lack of development in an area of the cemetery. Cemeteries wanting to develop areas for more environmental practices might encounter similar issues with lack of personnel as a limitation.

Money

Money was another parameter mentioned through multiple interviews as a limitation for developing current funerary practices (In2, In3P1, In4). In interview 4 the participant described money as a limiting factor for the workforce: *“That you have to preserve your money. You cannot have more and more people working there just because you have a lot of demand for crematorium now.”* (In4). Similar to personnel, the lack of funding can limit cemeteries from developing their offered services to become more sustainable.

Population size

Population size was suggested as a limiting factor for development. This was suggested by Participant 1 in interview 3, who through their work in the industry has the necessary overview of the services required to reach such a conclusion:

In3P1

And you have to think that we are, even though fifty-six thousand people die here in Finland a year, it's still a pretty small number since the way things are done, if something new comes up, it has to be at least thousands already.

The interviewee points out that Finland is a relatively small country, where a limited number of people die every year. This hinders the introduction of new sustainable technologies into the Finnish funerary services. Since the support of a fairly large part of the dying population would be needed to sustain the new development.

4.2. Buffers

Buffers refers to the stabilizing power of the stock size relative to the in and out flow (Meadows, 2009). In the funerary services the stock can be considered as the amount of buried individuals in the cemetery. The inflow can be thought of as people who need burial, and the outflow would be total decomposition of the remains. Finnish funerary law stated that an area used for burial has to be left untouched for 25 years before taken into use again (HautL 6:16§). Often, the family of the deceased can extend the rent on the burial place after 25 years. Therefore, the stock of buried individuals is at least 25 times higher than the amount of people buried yearly. In addition, cemeteries also function as historical sites meaning they contain graves far older than 25 years. Subsequently, the stock of the cemetery is far greater than the in and out flows. According to Meadows, systems with large stocks tend to be inflexible and react slowly to change. Therefore, the large buffer can be thought of as a hindrance for development of sustainable practices. At least it will take time for current changes to become visible throughout the stock.

Illustration of cemetery stock as buffer:

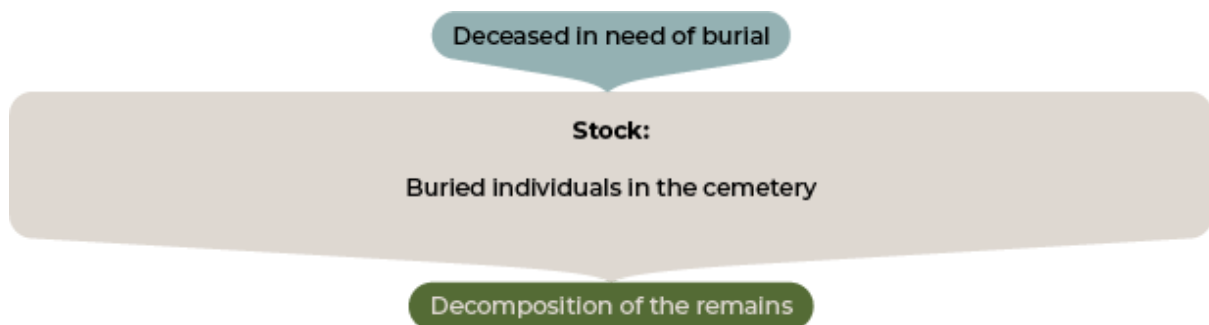


Figure 4.1: Illustration of cemetery stock as buffer

4.3. Stock-and-Flow Structures

10 Stock-and-Flow Structures in the funerary system can be thought of as the hospitals, morgues, crematorium, cemetery and other structures which will handle the body post mortem. Within these structures two hindrances were discussed during the research interviews; natural conditions and unavailability of technology.

Natural conditions

The natural conditions of Finland were discussed as a possible hindrance for composting in interview 3:

IN3P1

That is really interesting as a development, and then there's also these conditions in Finland, a composting facility like this is interesting, so it should be in a hall, because we have this cold weather, winter. In the United States or elsewhere where there is constant heat, it has been implemented. But I think that we would have difficulties, that there should be a different solution. Some inside hall solution.

According to the interviewee, technologies such as composting of human remains would be limited by the cold weather, since composting requires heat. A suggested solution would be to develop inside facilities for heat dependent technologies like composting. The interviewee goes on to describe that the price for this type of development would be too high, since funerary services are not allowed to make profit. This will be discussed in more detail later in point 5.

Unavailability of technology

In interview 5 the availability of certain technologies was pointed out as a possible hindrance for development: “(about the acceptance of cremation) Which is completely different in Northern Finland. And of course there's a crematorium further away, so of course you'll pay for the transport.” (In5). The interviewee points out the cremation is not as widely used in northern Finland as it is in the southern parts. One possible explanation is that the crematoria are simply further away, and that the added transportation fees might make cremation less desirable. Similarly, added transportation costs might make other green options for burial more undesirable than the widespread options already available.

4.4. Delays

Delay in the feedback process can be critical, depending on the rate of change to the stock (Meadows, 2009). As established in Buffers, the funerary practices rate of change is slow. However, delays in other areas further hinder the development of more sustainable practices.

Spreading of new ideas

Areas that are already developed for more sustainable burial practices take time to become widespread. This was exemplified in interview 5:

In5

We've also had a lot of people visiting it (forrest cemetery) now to get to know it, and I know that there are plans to build something like that at other cemeteries too. In 20 years, they may have already appeared elsewhere, it might take that time before they wake up to the fact that, hey, such an option exists.

In this example, the interviewee explains that their recently developed forest burial option has gained interest among other cemeteries. However, the development and building of new

cemetery areas takes time, in addition to the new option gaining attention and popularity among users.

Changes to the law

The funeral law was discussed in all interviews as a clear hindrance for development. This will be discussed in more detail in point 5. rules. However, the slow reaction from the lawmakers can be considered as a delay in feedback between the lawmakers and the funerary industry: *“It is quite old now, it is nearly 20 years old, and there are several things that are not in the law.”* (In2). The interviewee points out that due to the age of the law, there are multiple shortcomings in the regulations. This delayed reaction has a large impact on the industry, since rules are considered as a fairly influential leverage point by Meadows.

4.5. Balancing Feedback Loops

Balancing feedback loops are mechanisms that keep the appointed stock at or near its desired levels. In cemeteries the desired level of stock is to still have space to perform burials. There are two ways of adjusting for increasing demand of cemetery spaces: Expanding the capacity by opening new areas, or increasing the capacity by cremation.

Expanding the capacity by opening new areas

The difficulty in finding suitable areas for the development of new cemetery spaces was discussed in multiple interviews (In2, In3P1, In5):

In5

“But even in another 100 years, we'll probably be a young cemetery, because new cemeteries aren't being established that often, and more old ones are being expanded, but new ones are being established, no.” “We are the cemetery of the future, because we have the empty spaces, where we can think about in which direction they will be developed.”

The lack of establishment of new cemeteries means that there are fewer areas which can be developed for sustainable burial practices. Hence, the difficulty in expanding the capacity, functions as a hindrance for development of sustainable funerary practices.

Increasing the capacity by cremation.

Keeping the appointed stock at acceptable levels can also be achieved by increasing an already established cemetery's capacity. This can be achieved through cremation since cremated individuals take less space in the cemetery, and since cremated remains do not require decomposition. Cremation as a means of expanding a cemetery's capacity was discussed in interviews 3, 4 and 5: *“I think that, for example, somewhere in Hietaniemi it's because it's a very popular cemetery that's full, there's no more room for those coffin graves there.”* (In5). In this example, the interviewee points out that Hietaniemi cemetery lacks the capacity for coffin graves. Therefore, cremation is the only method of burial in Hietaniemi. Expanding the capacity with cremation is not a hindrance for sustainable developments in

itself. However, the increased lifespan of old cemeteries hinders the development of new cemetery areas which might be more suitable for sustainable developments.

4.6. Reinforcing Feedback Loops

Reinforcing feedback loops are actions that promote more of the same actions. Earlier cremation was discussed as a way of increasing the old cemetery capacity for burials. In this example the stock is considered as the amount of buried individuals in the cemetery. Considering the cremated as a stock in itself, then cremation can be viewed as a self reinforcing feedback loop.

Various aspects of cremation were discussed during all of the interviews. In interview 4 the interviewee elaborated that for church parishes, it is less costly to invest in crematoriums than to expand the cemetery for more burial space:

In4

“Even if you have a steady income that you know, we are going to have this many cremations, but you still have to make sure that it doesn't cost you more than you can collect from the work. Because cremation is not required by law. Basically it's a business, or it's a model for the local parish to have lower costs for building the funeral sites. [...] and you are hoping that with this money that you can save by not having to build new areas every year. You can pay for the crematorium.” “[...] Well, that's basically why cremation is also an option for the church to have, so that you cremate people, you give less or smaller places for the burial of the urn or scattering of the ashes, and then you don't have to build new places for grave sites.”

The church's financial motivations for supporting cremation might be a driver in the industry for more cremation. It is possible that as cremation becomes more accepted and visible through society an increasing number choose this as the preferred way of burial. Which would again motivate the building of new crematoriums. This is supported in interview 3 by participant 2:

In3P2

We follow the statistics really closely. And the statistics show at least that the ash burials, or like scattering of the ash is a growing trend. So then we maybe want to focus on that and we can develop new areas or memory groves where the ashes are scattered.

Interview 3 participant 2 suggests that the feedback for the development of funeral services is taken from already performed funerals. When the service is offered based on previous services, this creates little room for new methods of burial, furthermore enforcing cremation as the main method of burial.

Illustration statistics gathering of burials:

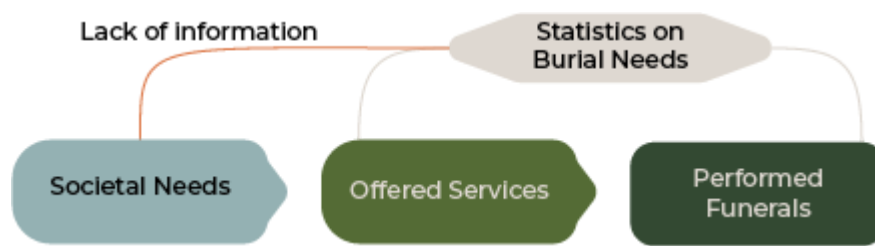


Figure 4.2: Illustration statistics gathering of burials.

Considering the possible financial motivation for cremation and the feedback for services development being taken from already performed services, there is reason to believe that cremation might be a self fulfilling feedback loop. As previously established, the increase of an old cemetery's capacity by cremation can be a hindrance for sustainable developments. Therefore cremation as a self fulfilling feedback loop might be considered as a hindrance as well.

4.7. Information Flows

Missing information flows are, according to meadows, one of the most common causes of system malfunction (Meadows, 2009). Multiple flawed or missing information flows were discovered in the funerary services. These possible flaws in information flows were groups followingly; Users missing information, uncertainty of information and representatives of information.

Users missing information

In point 11, buffers, the slow rate of change in funerary services was discussed. Because of the slow changes in the stock, emerging technologies take time to become widespread. Adding to this problem, missing user information might cause further delay in the changing stock. Users missing information refers to the users being unaware of offered services. This was discussed in interview 5: *“Our forest urn cemetery has not been there for many years, it will take time until people find it.”* (In5). In this example, the cemetery has had a new type of funerary services, available for a few years. However, the service has yet to gain popularity with users.

One possible explanation for the slow user adaptation of new services was discussed later in the same interview: *“So really, when you know the person is there, they can be so broken by the sadness, you just want to get it taken care of, then it's easy to go through the easiest way.”* (In5). The interviewee suggests that when a person has lost someone close to them, they might be less susceptible to choose non-traditional methods of burial, and chooses based on familiarity. This is due to the emotional burden of loss, and the desire to arrange the funeral with little additional burden. There is grounds for believing that if the sustainable funerary options were introduced before the passing of a loved one, users would be more likely to choose these options. Therefore, the lack of information flow in advance of a loved ones passing, can be considered a hindrance to sustainable developments in the funerary services.

Uncertainty of information

Uncertainty of information refers to the possible misinformation about sustainable practices. During 3 of the 5 interviews, claims were made about sustainable practices that have been difficult to verify in scientific literature. This was exemplified in interview 3: *“Isn't it still a lot more sustainable than coffin burial, Because it's such a large work you have to put into digging the grave coffin because it goes so deep.”* (In3P2). In this example the interviewee is uncertain about the compared effects of cremation and coffin burial. To ensure sustainable development in the funerary services, workers within the industry need to have access to certain information on the sustainability of current and future practices. Therefore, the uncertainty of information, and the presence of false information, can be considered as a hindrance for sustainable development.

Representatives of information.

Representatives of information refers to how representative organizations communicate the funeral needs of different groups. The needs of different groups were discussed in all interviews. In interview 3, it was pointed out that burial needs are often communicated by different religions: *“And of course, other religions play a huge part in this because we have more and more Islamic funerals and they have their own funeral traditions[...].”* (In3P2). In this example, the demands for burial needs are communicated through the traditions of Islam and its organization. However, non-religious might have difficulties having their needs communicated since they lack clear representation. As further discussed in interview 3:

In3P3

“I don't think they are a very organized organization because they are all kinds of people. They have in Finland this... umm... the Atheists, don't they have their own?”
‘Freethinkers association’ prompted by the interviewer. *“Yeah, but I don't think that they represent all the non religious people”*

In this example the interviewee was asked about the needs of the non-religious and how those were communicated. The needs of the non-religious part of society could align with sustainable developments. Therefore there is cause to suspect that the lack of representation could be a hindrance for sustainable development. Statistics on religious diversity in Finland is visualized below in figure 4.3.

Religious diversity in Finland 2022:



Figure 4.3. Religious diversity in Finland 2022 (Tilastokeskus, 2023).

4.8. Rules

Rules define the scope and limitations of the funerary industry. Rules can be of different strengths and malleability. In addition the power to change the rules is a vital part of discovering system malfunctions (Meadows, 2009). This research discusses three areas of regulatory hindrances for sustainable developments: Parish regulations; the funerary law; and the church's indirect power.

Parish regulations

Parishes individual regulations were discussed in interviews 2,3 and 4. In interview 2 the interviewee pointed out that the parishes are responsible for the maintenance of their cemeteries: *“As you may know, the parishes, they are responsible for, The law says; parishes are responsible for the maintenance of public cemeteries.”* (In2). Since parishes are individual, they are free to regulate the rules regarding their cemetery areas, within the national and church law. This was discussed in interview 4:

In4

We had a lot of, like I said, that it doesn't matter what the bishops say, because the local parishes are independent. They can be guided. But they cannot be commanded to do anything. If they understand the idea that, OK, that's good, we will do that. Then they will do it. But if they say that, that's ridiculous, we're not going to do it and then they will not do it.

The interviewee points out that the church governing bodies try to make the parishes understand the wanted direction of developments. However, the church does not hold much power over the individual parishes, and they can choose their own direction. Subsequently parishes are free to make their own regulations as further discussed in interview 4:

In4

So they are like little bureaucratic places, those parishes. So you have 70 (cremations) per week. That is just determined that this is the amount we are going to do. Even if we have requests, we have enough customers that we could have 90 or 100 a week. Well, we don't do it. We just do 70.

The interviewee expresses frustration over the particular parishes regulations. The regulation in this example is a set number of cremations that the parish will perform in a week. Despite an increasing que for cremation, the parish does not deviate from their regulation. The interviewee expressed that the variation in regulations makes it difficult to work with different parishes due to uncertainty in rules.

Similar to the previous examples, another parish specific regulation was discussed in interview 3: *“The priests don't want to bless a deceased person when he or she is already cremated. They want to do the blessing when the deceased is still in the coffin.”* (In3P2) In this example, the parish priest insists that the deceased be blessed before cremation. In interview 5 the same situation was discussed:

In5

The church is very strongly of the opinion that a person should be blessed in a coffin and then the soul will go to heaven better, and nowadays there is perhaps more pressure from the family to do so. That a person would be cremated and then the ashes blessed.

This example clarifies that the priest rigidity in ritual sequence is in contrast to the wishes of the grieving party. There is reason to suspect that the parishes' varying regulation, and their refrain from accommodating for the wishes of the grieving party might be a hindrance to sustainable developments. However, the variability in parish regulation was not a focus of this study, and therefore not researched further. Furthermore, the parish's ability to create variety is an important aspect of producing variability in the system. This is elaborated in point 4.

The funerary law

The funerary law was one of the most frequently discussed hindrances and appeared in all interviews to varying degrees. The hindrances of the law can be further divided into three categories;

Direct hindrance refers to the law regulations which deny certain practices. This was discussed in interview 5:

In5

The law regulates certain things, so you can't do just about anything. There are certain regulations, even though the urn must be of a certain type, decaying material or the coffin must be of a certain material or the deceased must be taken to the grave within a certain time and that the law stipulates certain things.

The interviewee points out that law regulates the material which can be used for funerary practices. This was elaborated on in interview 3, Where the interviewee points out that the use of fungus based coffins can not be performed in finland: *“(on fungus based coffins)The laws are so strict for the coffin materials and everything so it would require changes in the*

law in Finland.” (In3P2). The law denying fungal based coffin materials is a direct example of the funerary law being a hindrance for sustainable developments.

The reported age and imprecision of the law might be an explanation for the lack of approval for certain material uses in the funerary services. As previously mentioned the funeral law is slow to react to changes in the system, as discussed in interview 2: *“It is quite old now, it is nearly 20 years old, and there are several things that are not in the law.”* (In2). Furthermore, when discussing a suggestion made to the lawmakers on banning plastic materials in coffins, the interviewee pointed out the imprecision of the law: *“They told us that it is such a thing. Maybe they thought it was too detailed so they told us to make an agreement about this subject ourselves.”* (In2). In this example, several organizations were working on removing plastics from coffins in the whole Finnish funerary industry. A suggestion for the lawmakers was made to ban plastics in coffin materials for the funerary regulations. However, this suggestion was considered too detailed and the organizations were left to agree about the material ban between themselves. As evidenced in these examples, there is support for the claim that the age and imprecision of the funerary law is a hindrance for the sustainable development of the funerary practices.

The law forbidding financial gains was a frequently discussed part of the regulations. This was pointed out as a hindrance for developments in all interviews. As mentioned, the charges for funerary services can only be as high as the cost for providing the service (HautL 2:6§, 3:8§). These regulations make the funerary services non-attractive for the implementation of new technologies since the law hinders any return on investments. Therefore, These regulations obstruct any private company or organization from developing technologies related to the funerary services in Finland. This was exemplified in interview 1: *“For example composting and water cremation is hard to get started because the business is not allowed to make profit. And it has a lot of costs to get a business like that started.”* (In1). The interviewee mentions composting and water cremations as sustainable methods of burial. However, the investment is un-attractive for businesses since the funeral law forbids companies to make profit in funerary services. Similar remarks about the lack of commercial operators were made in several interviews. Therefore, the funerary laws restriction on financial gains within the funerary industry can be considered as a hindrance for the sustainable developments.

The church's indirect power

As stated by Meadows, the deepest flaws within a system can be found by investigating its rules and who has power over them (Meadows, 2009). There is reason to suspect that the churches indirect power within the funerary services is a hindrance to the development of sustainable practices. In interview 2 the representative of the church council stated that any organizations with the desire to start a cemetery are free to do so according to the law: *“You know that system, In our law that anyone who would like to have a graveyard they can have such an area themselves.”* (In2). However, as previously discussed, the law on financial gains complicates the participation of actors outside the ELCF. Furthermore, the ELCF is the appointed caretaker of public cemeteries and receives money from the government for this purpose. Therefore, other organizations' disadvantages within the funerary services might be a financial advantage for the church.

There might be reason to question the churches participation to the funerary law, in the lights of the churches possible advantageous position within the services. The lawmakers were

brought to attention in the interview with representatives from the church council. In interview 2 the interviewee comments on the inclusion of composting to the funerary services:

In2

Yeah, ministry of culture and education, so they decide about those changes to funeral law. And if they think that composting should be part of our Funeral services they could add that thing to the Funeral law and then then it would be OK, and then after it could be possible to arrange such services.

The interviewee points out that the ministry of culture and education are free to dictate the law and the ELCF has to abide by their decision. However, the ELCFS role in the decision making might not be as passive as presentes. In interview 3 the interviewee proposes that the church board is an active part of the lawmaking process, after being asked who could lead the development of new sustainable practices in finland: “*Kirkko Hallitus (church board)... They work with everything that requires changes to the law.*”(3).” (In3P2). The interviewee proposes that the church could take a more active role in changing the law to accommodate for sustainable developments in the funerary industry. There is reason to believe that the church has a conflict of interest, since the current law is gatekeeping outside organizations from participating in the funerary industry. Consequently, the ELCF’s position in the funerary services might be a hindrance for sustainable developments.

4.9. Self-Organization

Self organization refers to the system's ability to change itself. Meadows elaborates that the system's variability is the key to self organizing systems (Meadows, 2009). However, the production of variability means loss of control for the management of the system (Meadows, 2009). Following Meadows' description on system variability, the law on financial gain can be recognized as a hindrance for self-organization.

The law on financial gain

As discussed, the law against profit within funerary services prevents the advancement of sustainable technologies with the funerary services. Lack of outside companies keeps the majority of the population dependent on the churches offered funerary solutions. In addition, the lack of plurality in the market keeps variety from developing. Niche markets are unable to form and spread due to these limitations. This was discussed in interview 4, where the interviewee questioned the payment for such services:

In4

But will there be enough demand for this in Finland, because, like Olli Rehn just told, the Finnish community is, or the growth of the economy in Finland is not big enough to provide this kind of welfare. So when you are demanding that we want to have water cremation, we want to be composted when we die. Well, who is going to pay for it?

The interviewee points out that since the system is funded by taxes, any developments are paid for by the entire population. This limits niche markets from developing, since the

technologies adopted by the industry would need some support in the population. Therefore the funerary law on financial gains can be considered as a hindrance for variety in the funerary industry. Hence, the law is also a hindrance for self organization within the industry.

Parish regulations

The possibility for self organization in the current state of the industry comes from the parishes ability to self govern. As discussed in point 5 rules, The differing regulations across parishes is sometimes an inconvenience to the organizations and grieving parties working with them. However, the parish's ability to produce variability in services can be a great asset in self organization. While the parish's varying rules were suggested as a hindrance, the ability to self-organize is a great benefit. In the current state of the services, the possible hindrance caused by the parish's varying regulations is outweighed by the possible benefits.

4.10. Goals

The goals of the funerary system are more influential than any of the points mentioned until now. Because, the goals of a system dictates how the aforementioned points are used to fulfill the goal. Currently, the goals of the funerary system might be working against sustainability.

In interview 3 one of the interviewees describes the funding within the funerary system:

In3P1

In the Finance Act, it is said that this state money can be used for the Cemeteries, for the maintenance of cultural-historical buildings and then for some of this population register activity, and now that money comes from the state, so it is given to the church council and it is somewhere around one hundred and twenty-four million in Finland, that state funding will come. And then the Church Board distributes it to the congregations.

As described, the given funding is distributed between cemeteries, cultural historical building maintenance and population register activities. The funding for funerary services was further elaborated in the same interview:

In3P1

For example we too will have 12.4 millions in Helsinki, which should then be used for funerals and then for cultural and historical ones and so on. But the money is unfortunate, in that it's not earmarked, when that money comes here, it's lost in the general coffers

The interviewee describes that the money given by the state gets distributed between these three areas of use, and unfortunately for cemeteries is not earmarked for its purpose. This would suggest that the goal of the system is to provide funerary services at lowest possible cost. The goal of the current system can be a hindrance for sustainable development if the sustainable alternative costs more to develop than the currently offered services. This can be exemplified by the churches support for cremation to save money on cemetery expansion, which was discussed in previous points.

4.11. Paradigms

Any system operates within the unspoken assumptions of its users and workers. Collectively, the shared ideas and rules are called a paradigm. For example, the Finnish funerary system works under the paradigm that the dead need to be disposed of. Within this paradigm, there are further rules and assumptions on how this should be done. These assumptions have been built up by years of funerary traditions. One example of such traditions is that a casket is needed for burial. In Finland these assumptions are strongly impacted by the traditions of the church, through the churches involvement in funerary services for nearly a millennium (Väisänen, 2019). Within a system, the individuals' actions aligning within the current paradigm are normalized. In contrast, actions that depart from the current paradigm are viewed as strange and illogical. This mechanism is a hindrance to sustainable technologies in the areas of user choices, and management attitude.

User choices

In interviews 1, 3 and 5, the interviewees reported that users have a tendency to adhere to already established customs. The costumes in question can be identified to belong to the already established paradigm. In interview 5 the interviewee was asked what is the most popular of their offered funerary site: *“But then there is this grassy area, I say that it is quite popular with us, that grassy area for burial. Yes, it's traditional in that you get that tombstone, it is still the most popular.”* (In5). The interviewee explains that the traditional burial spaces with a tombstone and neatly cut grass is the most widely chosen alternative among the users. This might be due to the existing paradigm suggesting that this is what burial sites are supposed to look like. Users choose this option because it is the most commonly spread idea of what burial spaces are.

The suggestion that users are more inclined to choose options within the established paradigm is further supported by findings in interviews 1,3 and 5. In these examples users choose funerary traditions situated in the current paradigm, despite their own paradigm being seemingly unsupportive of this tradition: *“Their crematorium is open to all funerals and every person, but most people still choose to bring a priest to the funeral services, even when the deceased has left the church a long time ago or wasn't religious.”* (In1). In this example the interviewee explains that their crematorium and chapel is open for private funerals. Most users of the space, which is free of religious ties, still bring a priest to the event. The interviewee emphasizes that this is done despite the deceased having departed from their religion during their lifetime. This exemplifies the strength of traditions in the funerary paradigm. Even when not belonging to the paradigm during the lifetime, individuals still choose to include themselves within the paradigm in death. Earlier it was discussed how the lack of information about other sustainable practices available add to the customers choices falling on the traditional options. This only adds to the underlying problem, that the paradigm within the system will dominate options outside the paradigm. When the sustainable options for burial are situated outside of the current paradigm, the paradigm becomes a hindrance for sustainable development.

Leadership paradigm

The paradigm of the leadership within the public cemeteries was also identified as a hindrance to sustainable development. In interview 2 the interviewee was questioned on how

cemeteries accommodate for religious diversity: *“As you know, there are not many religious symbols in any graveyard, only on the gravestones, and in your gravestone you may get a religious symbol if you want, and a non religious symbol if you want.”* (In2). The interviewee suggests that cemeteries accommodate for religious diversity by not having religious symbols on the structural elements of the cemetery, only on the personal gravestones. This example is well situated within the paradigm that funeral sites have gravestones. Other religions and non-religious communities might not support the use of gravestones at all. This paradigm might therefore be problematic since the public cemeteries kept by the ELCF are for all parts of society. The leadership operating within a set paradigm might set limitations for sustainable developments as well, if the sustainable developments does not fit within the current paradigm.

4.12. Transcending Paradigms

Transcending paradigms refers to not limiting one's thinking to any commonly accepted truth. For the funerary services, any limitations for sustainable development were not discovered on this level. Operating across paradigms and being open minded is viewed as a largely positive attribute for sustainable development.

5. Conclusion & Discussion

This section will begin with a summary of the main findings of the thesis. Thereafter, the contribution of this thesis to the underlying literature is discussed. Finally the limitations of the thesis are addressed and suggestions for future studies given.

5.1. Summary

In the light of ongoing environmental issues and the subsequent emergence of sustainable solutions within the funerary sector, this thesis set out to answer the research question “What are the current hindrances for sustainable developments in the Finnish funerary services?”. Systems thinking was adapted as a mindset for the research conducted, due to the suggested complexities within the FFS and the complex multidisciplinary nature of sustainability. Systems thinking was practiced in coalition with the second generation of design thinking, through the use of stakeholders as experts and the designer as the mediator of information. The application proved sufficient in the identification and description of hindrances for sustainable developments within the Finnish Funerary Services. Meadows’ 12 places to intervene in a system provided a helpful framework in identification and description of the discovered hindrances as well as providing grounds for understanding the severity of the hindrances. Though it is not within the scope of this thesis to suggest actions towards improvement of sustainability within the industry, addressing hindrances lower on the list are more likely to result in successful implementation of sustainable practices, and the burial practices move towards more sustainable land use.

Through qualitative research this study found hindrances for sustainability in nearly all of Meadows’ 12 points except the last, transcending paradigms, which is largely viewed as an overall positive attribute to sustainability. Here the findings are summarized in table 5.1. Summary of Findings:

Summary of Findings:

1. Numbers	<ul style="list-style-type: none">• The lack of money and personnel were both pointed out as parameters which may cause hindrances for sustainability developments,• The size of the Finnish population limits the market for new developments.
2. Buffers	<ul style="list-style-type: none">• The 25 year long decomposition time of bodies, together with the cemetery capacity and the rate of death in the population, was found to slow down the cemetery's reaction time to sustainability demands.
3. Stock-and-Flow structures	<ul style="list-style-type: none">• The natural conditions in Finland, such as weather and temperature may hinder certain sustainable technologies.• Local differences in burial infrastructure was pointed out as a hindrance in this category.

4. Delays	<ul style="list-style-type: none"> • The time it takes for new ideas to catch on in wider populus was discovered as a hindrance. • The funerary law was pointed out as slow to react to current needs.
5. Balancing Feedback Loops	<ul style="list-style-type: none"> • The lack of new areas established for burial was found to be a hindrance for sustainable developments. • Increasing of old cemeteries capacity by cremation was found to further postpone the development of new areas and therefore can be viewed as a hindrance to sustainability as well.
6. Reinforcing Feedback Loops	<ul style="list-style-type: none"> • Cremation was suggested as a self reinforcing feedback loop and thus a hindrance for other developments in the Finnish Funerary Services.
7. Information Flows	<ul style="list-style-type: none"> • The time at which a bereaved person receives information on burial options was pointed out as a possible hindrance to the bereaved choosing less established greener options. • The workers' access to certain information on funeral practices was also discussed as a hindrance. • Secularized societies and the needs of individuals identifying with non organized life views were found to lack representation in communicating their funerary needs.
8. Rules	<ul style="list-style-type: none"> • Individual parishes' own regulations were speculated to limit certain aspects of sustainable developments. • The funerary law was found to contain direct hindrance and imprecision that hinder sustainable developments. • The Evangelical Lutheran Church of Finland's role in the lawmaking process was suggested as a possible hindrance to sustainable developments. • The law forbidding financial gain within the burial services was found to severely hinder the emergence of companies that develop sustainable technologies.
9. Self Organization	<ul style="list-style-type: none"> • The law on financial gain was further discussed in this section, here the law was found limiting to self-organization within the funerary industry. • In this section the previously discussed parishes' individual regulations were found as a potential driver of self-organization and thus not viewed as a hindrance.
10. Goals	<ul style="list-style-type: none"> • The goals of the system were found to be provision of funerary services at lowest possible cost, which may work as a hindrance for sustainability.

11. Paradigms	<ul style="list-style-type: none"> • The established paradigms of what a burial should look like was identified as a potential hindrance in both the users and providers of the services.
12. Transcending Paradigms	N/A

Table 5.1: Summary of Findings

5.2. Discussion

Sustainability in the FFS

The literature review suggested that there is a lack of sustainable practices in the FFS. However, the large buffer size of the cemeteries, described in the hindrances, further complicates the assessment of emerging solutions. Even if cemeteries are adapting their land and maintenance to align with natural burial, it would take years before this change can be noticed when visiting the cemetery. As pointed out in the literature review, there is no data on the occurrence of natural burial or burial that align with these principles. In the light of the buffer size, this data becomes critical in the development assessment of the services. Therefore, this thesis recommends that the governing organs within the FFS begin data collection on burials within areas that align with natural burial principles.

The need for sustainable practices in the FFS was discussed in the literature review through the work of designer Kuronen (2019). In her work, Kuronen concludes that there is a clear demand for sustainable practices throughout the services. This thesis found that delays in feedback further slow down the emergence of sustainable options. Therefore, it is possible that alternatives which would answer the demand pointed out by Kuronen are currently available, yet the delay in information flow hinders users in utilizing these options.

Design and systems thinking

In accordance with Pourdehnad et al. description of the second generation of design thinking, this thesis combined design- and systems thinking through the use of semi-structured interviews with different organizations within the FFS. Without the application of systems thinking it is doubtful that the more complex phenomena, such as the role of cremation as a hindrance to other developments, would have been identified. This is in line with the description provided by Pourdehnad et al. that systems thinking sacrifices the performance of one part of the system in favor of the whole system. Without the context of the entire system, cremation can be viewed as a positive development for sustainability of the services. This is one clear example of a complication that can be avoided when addressing sustainability throughout the services, instead of their individual parts. Furthermore, this finding also supports Ackoff's claim that many improving initiatives fail or work opposite to the problem they are trying to solve since they fail to address issues on a systems wide basis.

In Leverage Points for Sustainability Transformation, the authors suggest the use of Meadows Places to intervene in a system to better understand where in a system transformational applications should be applied (Abson et al., 2017). Rather than examine the possible places to intervene for systems transformation, this thesis adapted Meadows framework to discover

and describe the hindrances for sustainability transformation. Initial coding of the research data found 13 themes which described hindrances on a surface level within the FFS. The application of Meadows framework in reviewing the initial themes proved vital in the understanding of the deeper phenomenon behind them. Therefore, the findings of this thesis suggests that the leverage points developed by Meadows is a flexible framework which has applications outside the intended use. Some parts of the findings saw multiple hindrances described within a single point of Meadows framework, Other hindrances such as buffers, saw the hindrance described entirely by applying a part of the services to Meadows point. This further underlines the flexibility of the framework and suggests that it is well suited for the discovery of hindrances in a system, as well as being successful in providing hierarchy to the hindrances discovered.

Informing stakeholders

The research conducted is intended specifically for the Finnish funerary services, and therefore not presented as a case study, where the findings could be applied to other services. It is the opinion of the author that this would diminish the significance of the findings for the service the thesis is meant to inform. In addition, given the varying funerary regulations, customs and services across national borders, it can not be assumed that the findings in this thesis would be applicable to other services. Parts of the finding might be applicable for services where the regulations and customs are relatively similar to the FFS. However, the author recommends that similar studies be carried out to establish system specific hindrances.

The outcome of this thesis was set to be a framework of hindrances that inform the developers of design and technologies, and the various stakeholders within the FFS of the current obstacles for sustainable developments. As the hindrances within the services are now outlined, the next step is to inform the service stakeholders. For technology developers the regulations within the services will continue to limit their involvement with the services. However, if these regulations were to be changed, there are still hindrances for the implementation of new technologies. Such hindrances are the limited population size, natural conditions, delays in information, and others. These barriers will have to be overcome for new burial technologies to gain a foothold in the FFS. Similarly, Product designers also have to work according to the limitations set by the funerary law, and the hindrances described here can be used to inform their work.

For other stakeholders, especially the organizations within the services that are working to improve the sustainability, the hindrances provide an independent review of their system and the current difficulties for green transformation. Although changes to the services are not discussed, the results provide insight to areas that must be addressed within the services to ensure the future sustainability of burial in Finland. Given the large buffer size, the slow information flow and other hindrances that slow down the emergence of sustainable options, it is not sufficient that the providers of services maintain a passive role and wait for the consumers to demand sustainability. Therefore, It is the author's opinion that the Church Council should fully acknowledge their leadership position within the services, and begin active work towards a more sustainable burial culture. The hindrances provided in this thesis can work to inform the council on changes that need to happen to ensure this change. To begin the work the Church Council is recommended to establish working connections with designers and transition management experts that can aid in the needed transformation. Futurecasting and other design tools that function within the 3rd generation of design

thinking, are suggested as methods for future projects involving designers working with the stakeholders in the FFS.

5.3. Limitations and future studies

One limitation of the thesis is the chosen research methods that omit possible results from alternative methods. Since the chosen methods take an inside the industry approach and base the found knowledge on the experts within the system, any alternatives to the current system are left unexplored. The research approach chosen was based on the research findings' purpose for service stakeholders. To inform the stakeholders on sustainability hindrances within the FFS, the methods chosen were meant to build on the existing knowledge within the services. Methods like provotyping and futurecasting could have been utilized to understand barriers for development. However, since the starting point for the future developments is the current system, information that builds on the current system was prioritized.

The scope and size of this thesis has been a clear limitation to the work conducted, seven individuals from the service investigated is a relatively small sample size. Furthermore, nearly all of the interviews were conducted within the Helsinki region apart from one, thus the study is partial to the developments around the capital area within the Finnish services. Although, the majority of the leadership positions within the services were held by people within the region. To account for services from outside of the capital region this thesis could have interviewed cemetery workers from other regions.

Another limitation is the deliberate exclusion of governmental organizations such as the lawmakers and wellbeing services. These organizations are a large part of the lawmaking and translation process which is detrimental for how the funerary services operate. The exclusion of these services were done due to the limited scope of the thesis. To gain wider understanding of the sustainability hindrances, especially the ones related to the law, further exploration of these organizations impact on the services is recommended.

Sustainability experts within the services could have been included in the study. This was omitted due to the scope of the thesis, and the assumption that as the experts of the field, the heads of the various organizations also possess knowledge on sustainability. Therefore, the findings from this thesis are from the perspective of the leading organizations within the services. It is possible that the inclusion of sustainability experts would have resulted in a wider understanding of sustainability hindrances.

One possible limitation of this thesis is the researchers inexperience with systems thinking. Systems thinking was introduced to the researcher through this thesis. Although the quantification of the application of systems thinking in this thesis is difficult, there is reason to suspect that if the researcher was more experienced in the use of systems thinking, a deeper understanding of the hindrances could have been achieved. However, due to the complexity of the research topic, the choice of systems thinking as a tool is still viewed as a major contributor to the findings of this thesis.

There are undoubtedly a plethora of connections between the found hindrances, these connections have not been explored further due to limited scope of this thesis and the authors limited knowledge on systems thinking. However, gaining further understanding of the

connections between the hindrances would aid in the further understanding of the systems dynamics and ensure the successful implementation of sustainable developments to the Finnish Funerary Services. Therefore, the continuation of these studies is proposed as a possible future study area. In addition, this thesis only explored the hindrances for sustainable developments using Meadows' leverage points as framework for their discovery and presentation. To gain a holistic understanding of the leverage points for a sustainability transformation within the Finnish Funerary Services, the leverage points would have to be studied separately.

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7. Appendix

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Consent to Participate in a Research on funerary cultures and relationship to death.

This interview is conducted as part of the interviewer's bachelor theses on cemetery cultures and their development. The participant is invited for a semi-structured interview which aims to gather data on the Finnish funerary service system. The documented material will be processed and analysed to develop and support the interviewer's research within the scope of their Bachelor's Theses. With permission the session is to be recorded and transcribed to produce data for the described thesis work, the participants identity can be anonymized for the publication if desired.

I, _____, have been clearly informed on the purpose and procedures of the research led by Tuomas Laakkonen and Kamilla Grämer at Aalto University School of Arts, Design and Architecture, Espoo, Bachelor's Program in Design and have shown interest in participating in the studies developed by the students cited above. I am aware and understand the contents of the research and how my participation will occur.

I agree to participate

I do not agree to participate

I agree to be recorded and for the interview recording to be used for the intended purpose

I do not agree to be recorded

I prefer to stay anonymous

_____/_____/_____
Date and Place

Name of Participant

Signature of Participant

Signature of Researchers

I volunteer to participate in the studies. I may choose to rescind or abort my participation in the studies at any time during the studies, by informing the student cited above. Rescinding or aborting my participation will not affect my position at any point in time. I may also revoke this consent to participate in the study, in which case information pertaining to me will not be used in the studies. Research results pertaining to me may be used in scientific reporting (e.g. publications). This study follows the responsible conduct of research, legislation and guidelines available at <http://www.tenk.fi/en/responsible-conduct-research-guidelines>

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Interview guide

General introduction (Who we are and why we are here)
Introduction to and signing of, legal stuff

Personal introduction

- Tell us a little bit about yourself
- Tell about the organisation
- Tell us about the structure of the organisation and what kind of power does it hold and how is it used

Mapping exercise (post its, paper, pen, A3) 10 min

- We are Interested in mapping out funerary services in Finland
- How would you describe your connection to SHK and Kirkko hallitus.
- What other organisations do you communicate with / is in contact with (write down mentioned companies on post-it and put them on a paper)
- How are different organisations and services are connected?
- Does the organisation have some governing role in the field?
- Revise together

Assessment of future needs 15 min

- Can you identify some emerging needs in cemetery users (are there new movements or trends)?
- How does your service adapt to the changing user needs?
- Are there active considerations about the changing funerary needs of Finnish society? (research into future needs)
- How does the Church respond to changes in the cultural and religious diversity in the country?
- Is the funerary law accommodating or restrictive for the users needs? (is there recurring instances)
- If there was a need for changes in the cemetery/funerary restrictions, which stakeholder would be responsible for this?

(Discussion of future cemeteries 10 min)

- Discuss possibilities
- Discuss feasibility and issues

(Introduction to the Tuonnela project 10 min)

- Discuss possibilities
- Discuss feasibility and issues

Death planning (writing will and planning funeral) 20 min

- How would I go about planning my funeral? What are the steps someone has to take if they want to plan their own funeral?
- Mapping of stakeholders
- Inquiry about statistics / data on death planning
- What are the biggest challenges about people planning alternative funerals?

Closing

- Is there anything we did not talk about that should be mentioned in our context

Transcription sample

Drom Interview 3, Helsinki Parish Union

...

And then of course, we have to have like working communication with other religions like Islamic congregation or Jewish or Catholic.

Tuomas

And this is about the like cemetery spaces, of course so what are the are you kind of asking for their demands and these kind of things? Not demands, but like what kind of use they you know...

Interviewee 1

We don't.... We bury everyone, we don't care if you're a part of the Lutheran Church or Catholic Church or yeah. So we want to like....

Interviewee 2

Know the habits and that kind....

Interviewee 1

like the funeral traditions of other cultures and religions.

Interviewee 3

Joo, sitten meillä tosiaan näitten yhteistöiden kautta saamme kun honkalanummella tää muslimien hauta alue mikä on ikään kuin perustettiin niin kun tilapäisenä ennen kun saadaan tää uusi. Kyllähän Se on niinku vakiintunut. Katolisen kirkon kanssa toteutettiin tuonne maalille heille Oma lohko. Sitten on ollut yhteistyötä ortodoksin, tai siis juutalaisten kanssa, koska se liittyy siihen hietaniemeen ihan olennaisesti liittymään semmoista vähän työ apuakin väännellään välillä.

Yes, then we through these cooperative efforts we got this honkalanummeen this Muslim grave area which was established as a temporary until we get this new one. Or it is well established now I guess. Together with the Catholic Church, a dedicated block was created for them on that site. Then there has been cooperation with the Orthodox, or with the Jews, because it is connected to the Hietaniemi (cemetery), and a little bit of work is done there sometimes.

Atlas.ti sample

Thesis coding again

- Documents (5)
 - D 1: Thesis int
 - D 2: Thesis int
 - D 3: Thesis Int
 - D 4: Thesis int
 - D 5: Interview
- Codes (13)
 - church as go
 - church gove
 - cremation a
 - enviroment
 - example of
 - financial hir
 - lack of orga
 - law denies
 - law is not pi
 - Law on final
 - missunderst
 - organizatio
 - sticking to c
- Memos (0)
- Networks (0)

Comment:

Click to edit comment

Niin ideat ne lähtee... Ihmisistä, meistä tai tarpeista. Pitää olla joku tarve.

That's how ideas come from... People, us or needs. There must be some need.

Eikö ne voisi tulla vaikka omaisiltakin?

Couldn't they even come from relatives?

Omaisiltakin voi tulla

It can also come from relatives

Tuomas

So it quite depends where the idea comes from. Sometimes it's the grieving family, sometimes it's the people working there, sometimes it's from this side also that they suggest something really difficult to...

We follow really closely the statistics. And the statistics show at least that the ash burials, or like scattering of the ash is a growing trend. So then we, maybe want to focus on that and we can like develop new areas or memory groves where the ashes are scattered.

Tuomas & Kamilla

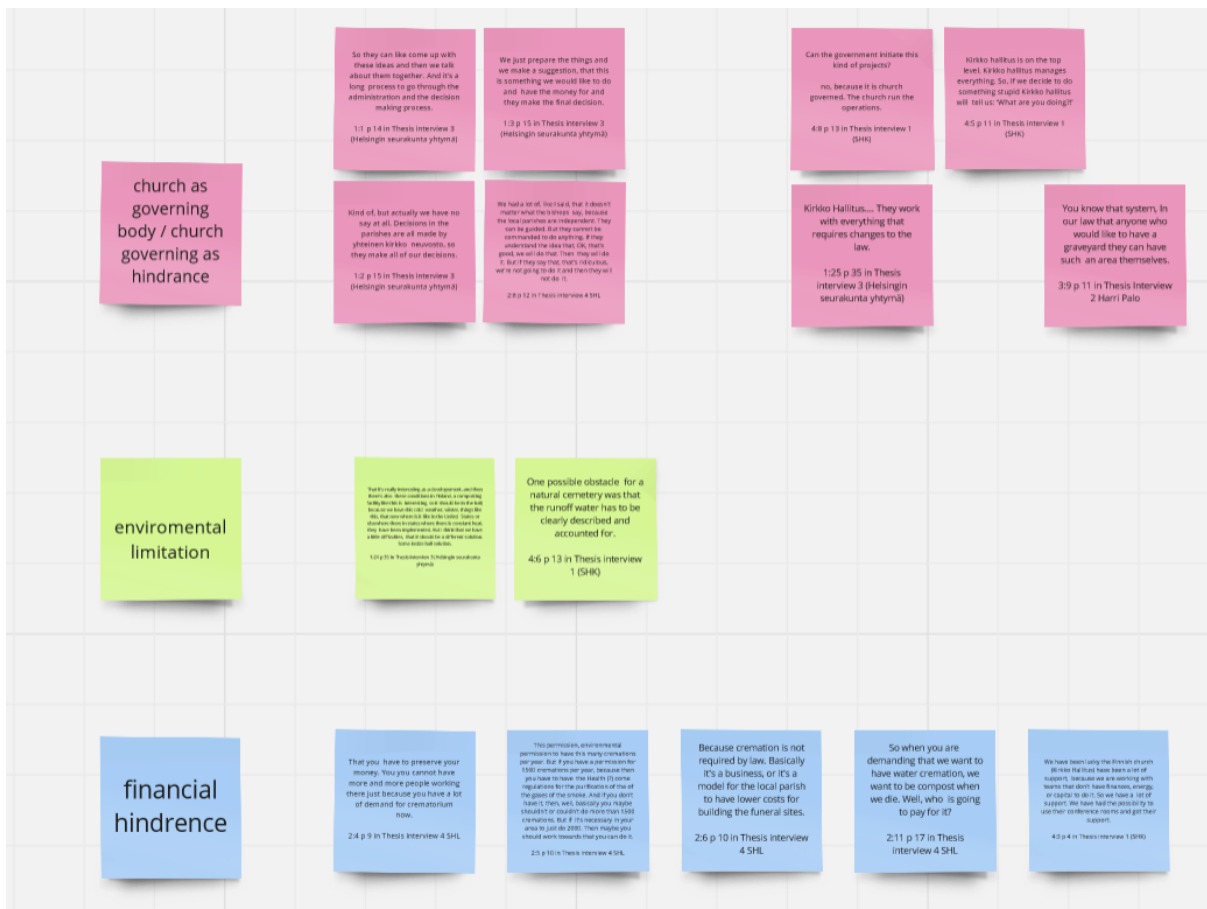
OK. Yeah, yeah.

Se on niin kun meidän tarjontaa että on monipuolisesti erilaisia, vaikkapa just tuhka hautauspaikkoja

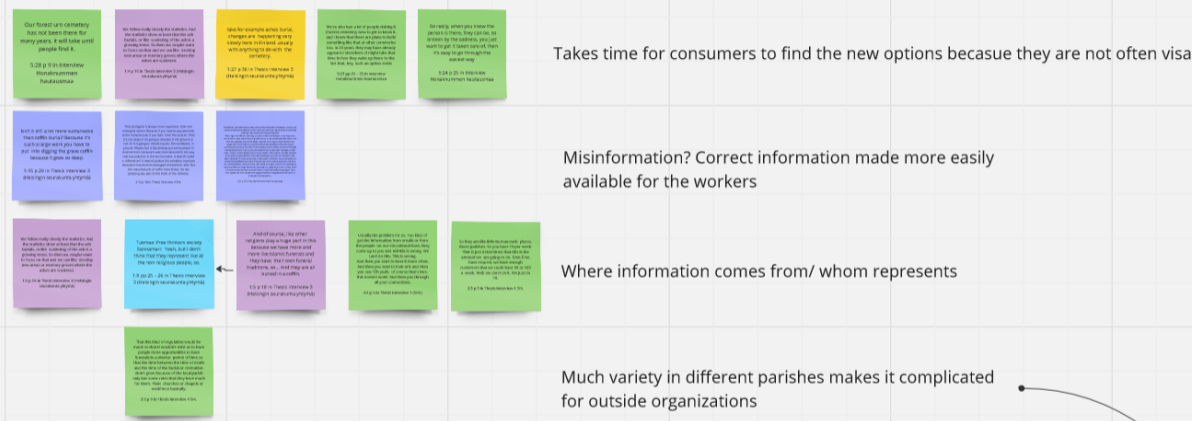
example of change

Miro samples

Before and after new themes



6. The structure of information flows (who does and does not have access to information)



5. The rules of the system (incentives, punishments, constraints)
If you want to understand the deepest malfunctions of systems, pay attention to the rules, and to who has power over them.



Codebook

Group	Theme	Frequency	Description	Citation
12	22	101		
12. constants, parameters, numbers	Personell	2	Employee availability limited the potential development	There is for example a project there, a children's area, which is such a matter of my heart that I have hoped that it would be reformed and I saw that there is a lot of will and maybe the money could still be found there, but there are no employees or resources, so somewhere it hits a wall. Interview 5 p 16
			Human resources is mentioned as a limitation to maintenance	(On decrease on maintenance) I think it's changing little by little and by no means terribly strong, but of course there is also pressure from the fact that there are no human resources, so that is one point of view Interview 5 p 6
	Money	4	Money is limiting muslim community from their own cemetery	I have tried to find an area that is suitable for them, but there are several problems that they don't have money Interview 2 p 11

			Describes the amount that is available for all of services and that it 'gets lost'	for example we too will have 12.4 millions in Helsinki, which should then be used for funerals and then for cultural and historical ones and so on. But the money is unfortunate, in that it's not earmarked, when that money comes here, it's lost in the general coffers Interview 3 p 44
			Church board distributes the available funding	So there is the funerary law, then there is the Financial act. In the Finance Act, it is said that this state money can be used for the Cemeteries, for the maintenance of cultural-historical buildings and then for some of this population register activity, and now that money comes from the state, so it is given to the church council and it is somewhere around one hundred and twenty-four million in Finland, that state funding will come. And then the Church Board then distributes it to the congregations. Interview 3 p 43
			Money limits the rate of cremation	That you have to preserve your money. You you cannot have more and more people working there just because you have a lot of demand for crematorium now. Interview 4 p 9
	Population size	1	Describes how population size limits new technologies	And you have to think that we are, even though fifty-six thousand people die here in Finland a year, it's still a pretty small number since the way things are done, if something new comes up, it has to be at least thousands already. Interview 3 p 36
11. Buffers	11. Buffers	2	Amount of cemeteris is 'static'	But even in another 100 years, we'll probably be a young cemetery, because new cemeteries aren't being established that often, and more old ones are being expanded, but new ones are being established, no. Interview 5 p 27
			Changes happen slowly in cemeteries	take for example ashes burial, changes are happening very slowly here in Finland. usually with anything to do with the cemetery.

				Interview 3 p 36
10. Stock-and-Flow Structures	Natural conditions	2	Runoff water might be limitation for some cemetery practices	One possible obstacle for a natural cemetery was that the runoff water has to be clearly described and accounted for. Interview 1 p.13
			Winter hinders composting	That it's really interesting as a development, and then there's also these conditions in Finland, a composting facility like this is interesting, so it should be in the hall, because we have this cold weather, winter, things like this, that now where is it like in the United States or elsewhere there in states where there is constant heat, they have been implemented. But I think that we have a little difficulties, that it should be a different solution. Some inside hall solution. Interview 3 p 35
	Unavailability of technology	3	Some places crematorium is far away, which adds cost	(about the acceptance of cremation) Which is completely different in Northern Finland. And of course there's a crematorium further away, so of course you'll pay for the transport. Interview 5 p 10
			Nearby crematorium makes it cheaper, including urn	We have one (crematorium) nearby here, and an urn is cheaper than buying an expensive casket place instead. Interview 5 p 10
			Some cemeteries restrict technologies	I think that, for example, somewhere in Hietaniemi it's because it's a very popular cemetery that's full, there's no more room for those coffin graves there. Interview 5 p 10
9. Delays	Spreading of new ideas	4	Takes time for people to find new cemetery	We've also had a lot of people visiting it (forrest cemetery) now to get to know it, and I know that there are plans to build something like that at other cemeteries too. In 20 years, they may have already appeared elsewhere, it might take that time before they wake up there to the fact that, hey, such an option exists. Interview 5 p 24
			New cemeterie spaces open rarely	But even in another 100 years, we'll probably be a young cemetery, because new cemeteries aren't being

				<p>established that often, and more old ones are being expanded, but new ones are being established, no. Interview 5 p 27</p>
			<p>Despite knowledge changes is slow</p>	<p>But we don't have that heat recovery yet, and the real challenge for the future is that a crematorium like that, where all the particle recovery is, so that it doesn't go up into the sky, so it requires a big facility. Interview 5 p 12</p>
			<p>Despite current need, there is lack of reaction</p>	<p>This permission, environmental permission to have this many cremations per year. But if you have a permission for 1500 cremations per year, because then you have to have the Health...come regulations for the purification of the of the gases of the smoke. And if you don't have it, then, well, basically you maybe shouldn't or couldn't do more than 1500 cremations. But if it's necessary in your area to just do 2000. Then maybe you should work towards that you can do it. Interview 4 p 10</p>
	<p>Changes to the law</p>	<p>2</p>	<p>Law is old and therefore lacking</p>	<p>It is quite old now, it is nearly 20 years old, and there are several things that are not in the law. Interview 2 p 9</p>
			<p>Example how law does not correspond anymore with other regulation</p>	<p>Supplementary income assist. That they would have to use for the funeral. But then the health municipality or hyvinvointialue, they would require that you have to have the estate inventory before they can provide the money for this. So now you have a dead body. You don't have money to bury it or cremate. And at the same time, you have different regulations, two In Finland that state, that it should be immediately buried or cremated. But then the welfare Municipality would require the estate inventory, which can take by law, It's allowed to take three months since from the date (of death), until you have to have it, or you can even have more time for the estate inventory by the tax authority. Interview 4 p 6</p>

8. Balancing feedback loops	Expanding the capacity by opening new areas	4	Muslim area was established temporarily while still looking for permanent space	Yes, then we through these cooperative efforts we got this honkalanummeen this Muslim grave area which was established as a temporary until we get this new one. Interview 3 p 24
			Difficult to find area for new cemetery	There is difficult to get such an area large enough, and near Helsinki for Muslims. They found one area in Mäntsälä, but the Muslims thought that it was too far away. Interview 2 p 11
			Cemeteries are not being opened	But even in another 100 years, we'll probably be a young cemetery, because new cemeteries aren't being established that often, and more old ones are being expanded, but new ones are being established, no. Interview 5 p 27
			New cemeteries can be developed flexibly	We are the cemetery of the future, because we have the empty spaces, where we can think about in which direction they will be developed. Interview 5 p27
	Increasing the capacity by cremation	4	Old cemeteries dont have room for not cremated	I think that, for example, somewhere in Hietaniemi it's because it's a very popular cemetery that's full, there's no more room for those coffin graves there. Interview 5 p 10
			Only one option in old graveyard	When, for example, Hietaniemi and Malmi, they are like very fully built and then there they have the family graves and they are always buriyng in the family graves. Yeah and then it's kind of obvious. Interview 5 p 27
			Large capacity for cremated	Then there is one thing, which is a change like that, the memory groves, they go them like in Helsinki, well we have about 5000. So roughly 1/5 goes to the memory groves, that is, to the common. More than that, to a common grave where there is just that common memorial marker. Interview 3 p 31

			Cremated take less space	Well, that's basically why the cremation is also an option for the church to have, so that you cremate people, you give less or smaller places for the burial of the of the urn or scattering of the ashes, and then you don't have to build new places ofr grave sites. Interview 4 p 10
7 Reinforcing Feedback Loops	Reinforcing Feedback Loops	6	Statistics of past burials are method of providing new services	We follow really closely the statistics. And the statistics show at least that the ash burials, or like scattering of the ash is a growing trend. So then we, maybe want to focus on that and we can like develop new areas or memory groves where the ashes are scattered. Interview 3 p 16
			Full cemeteries only allow ashes	I think that, for example, somewhere in Hietaniemi it's because it's a very popular cemetery that's full, there's no more room for those coffin graves there. Interview 5 p 10
			Little meintenece is an economical advantage for church	I think the memory groves are just like more low maintenance set places where you can bring a candle on Christmas or something like that. But you don't have to maintain a grave. Interview 3 p 32
			Memorygroves vastly increase capacity	Then there is one thing, which is a change like that, the memory groves, they go them like in Helsinki, well we have about 5000. So roughly 1/5 goes to the memory groves, that is, to the common. More than that, to a common grave where there is just that common memorial marker. Interview 1 p 31
			Cremation is buisness, hoping to save money by building crematorium, save oncemetery space	Even if you have a steady income that you know, we are going to have this many cremations, but you still have to make sure that it doesn't cost you more than you can collect from the work. Because cremation is not required by law. Basically it's a business, or it's a model for the local parish to have lower costs for building the funeral sites. [...] and you are hoping that with this money that you can save by not having to build new areas every

				year. You can pay for the crematorium. Interview 4 p 10
			Cremation takes smaller space, saves money on not build cemetery	[...] Well, that's basically why cremation is also an option for the church to have, so that you cremate people, you give less or smaller places for the burial of the urn or scattering of the ashes, and then you don't have to build new places for grave sites. Interview 4 p11
6. Information Flows	Users missing information	5	Information about cemetery spreads slow	Our forest urn cemetery has not been there for many years, it will take until people find it. Interview 5 p 9
			Information on burial needs comes from past burial	We follow really closely the statistics. And the statistics show at least that the ash burials, or like scattering of the ash is a growing trend. So then we, maybe want to focus on that and we can like develop new areas or memory groves where the ashes are scattered. Intervie 3 p 16
			Burial practices change slowly	take for example ashes burial, changes are happening very slowly here in Finland. usually with anything to do with the cemetery. Interview 3 p 36
			Takes time for people to find new alternatives	We've also had a lot of people visiting it (forrest cemetery) now to get to know it, and I know that there are plans to build something like that at other cemeteries too. In 20 years, they may have already appeared elsewhere, it might take that time before they wake up there to the fact that, hey, such an option exists Interview 5 p 24 – 25
			Peaople choose the easiest option during hard times	So really, when you know the person is there, they can be, so broken by the sadness, you just want to get it taken care of, then it's easy to go through the easiest way Interview 5 p 25
	Uncertainty of information	3	Non proven statement about sustainability of cremation	Isn't it still a lot more sustainable than coffin burial? Because it's such a large work you have to put into digging the grave coffin because it goes so deep. Interview 3 p 29

			<p>False statement about ecological alternative being always more expensive</p>	<p>That ecological is always more expensive than non ecological option. Because if you have to pay attention to the manufacture, if you start from the scratch. Then it's not about if it's going to dissolve in the ground or not. Or is it going to dissolve quick, like cardboard, in ground. Maybe, but it has already put some poison in environment because it was manufactured in the way that has pollution in the environment. It doesn't make a difference if it doesn't pollute the cemetery anymore because it has done its damaged somewhere else. But the manufacturer of coffin from Wood, it's not polluting any part of the chain of the delivery. Interview 4 p 18</p>
			<p>Expressing that the calculations for sustainability is complex and not ultimately correct. Informs about the assumptive nature of the first statement</p>	<p>Sometimes I've read some studies where these have been compared, so of course some crematoria are different when there are new ones that are environmentally friendly, heat recovery and everything else. That's right. It's difficult... Do they just count the burial process, or do they count the further in time, that if there is a coffin there, in the traditional coffin block. And then you calculate that it is fertilized, watered, and those summer flowers are bought for it until the future, so the environmental effects will continue and continue and continue. But then, if the crematorium is still not so environmentally friendly everywhere, that it uses that fuel and has not yet been changed to clean ones... That is, if the crematorium is not so modern that there is not heat recovery and it does not blow flowers from the chimney yet, but then so that after it has been cremated. Or if you are buried in that area in the forest nature cemetery, its environmental effects end there. That then you don't need it anymore, there are no summer flowers, there isn't any, then there is no lawn, there is no cropping, so there are different things like that on the scale, it's really hard to count them, that's it, if some</p>

				<p>researcher even counted these, it would be really interesting to know how it goes and then someone bringing a candle to the grave and how much it produces that waste and...</p> <p>Interview 5 p 10</p>
	Representatives of information	4	Statistics are followed for emerging trends	<p>We follow really closely the statistics. And the statistics show at least that the ash burials, or like scattering of the ash is a growing trend. So then we, maybe want to focus on that and we can like develop new areas or memory groves where the ashes are scattered.</p> <p>Interview 3 p 16</p>
			Non-religious lack representation	<p>(about Freetinkers association) Yeah, but I don't think that they represent like all the non religious people, so.</p> <p>Interview 3 pp 25 – 26</p>
			Other religions impact current services	<p>And of course, like other religions play a huge part in this because we have more and more like Islamic funerals and they have their own funeral traditions, so... And they are all buried in a coffin.</p> <p>Interview 3 p 18</p>
			Communication within the services is unclear about needs	<p>Usually the problem for us. You kind of get the information from emails or from the people on our educational base, they come up to you and tell this is wrong. We can't do this. This is wrong. And then you start to hear it more often. And then you start to look at it and then you see: 'Oh yeah, of course that's true, this doesn't work.' And then you through all your connections.</p> <p>Interview 1 p 5</p>
5. Rules	Parish regulations	6	Parishes are not governed by higher organization	<p>We had a lot of, like I said, that it doesn't matter what the bishops say, because the local parishes are independent. They can be guided. But they cannot be commanded to do anything. If they understand the idea that, OK, that's good, we will do that. Then they will do it. But if they say that, that's ridiculous, we're not going to do it and then they will not do it.</p> <p>Interview 4 p 12</p>

			Example of parish specific rule	So they are like little bureaucratic places, those parishes. So you have 70 per week. That is just determined that this is the amount we are going to do. Even if we have request, we have enough customers that we could have 90 or 100 a week. Well, we don't do it. We just do 70. Interview 4 p 9
			Some parishes reported to not bless after cremation, results in wet cardboard box if replaced coffin	And time in the fridge is so long that you can't put cardboard in there. It will be wet, when the moisture gets in there. Interviewe 3 p 28
			Preist dont bless after cremation in some parishes	The priests don't want to bless a deceased person when he or she is already cremated. They want to do the blessing when the deceased is still in the coffin. Interview 3 p 33
			Parish dont want to bless after cremation, example	The church is very strongly of the opinion that a person should be blessed in a coffin and then the soul will go to heaven better, and nowadays there is perhaps more pressure from the family to do so. That a person would be cremated and then the ashes blessed. Interview 5 p 17
			Example again, about parish specific rule, despite people wanting something else	They (preist) want to bless first, in the coffin and then there is the burial. Then again, when people are already so secularized, they don't understand the importance of the blessing, they just think about the practicalities Interview 5 p 20
			Parish specific rules hinder operations	That this kind of regulation would be made so that it wouldn't exist as to have people more opportunities to have funerals in a shorter period of time so that the time between the time of death and the time of the burial or cremation didn't grow because of the local parish only has some rules that they have made for them. Their churches or chapels or workforce basically. Interview 4 p 9
	Law is old and non-precise	5	Lawmakers preferred to keep law vague	they told us that it is such kind of thing. Maybe they thought it is too detailed thing so they thought, they told us to make an agreement about this subject ourselves.

				Interview 2 p 9
			Law is vague	They also come from the law, but it is also a question about good practices. It is, actually not easy to make a difference. What is strictly from law and what is good practice Interview 2 p 8
			Example of funerary law and others regulations not matching	Supplementary income assist. That they would have to use for the funeral. But then the health municipality or hyvinvointialue, they would require that you have to have the estate inventory before they can provide the money for this. So now you have a dead body. You don't have money to bury it or cremate. And at the same time, you have different regulations, two In Finland that state, that it should be immediately buried or cremated. But then the welfare Municipality would require the estate inventory, which can take by law, It's allowed to take three months since from the date (of death), until you have to have it, or you can even have more time for the estate inventory by the tax authority. Interview 4 p 6
			Missing parts of current law	But in Finland we have no law about the time between death and funeral and sometimes it may take... It is not a good thing that the time will be too too long, but we have many cultures that take care of funeral in three days. And in Finland it sometimes takes more than four weeks Interview 2 p 9
			law is old nad lacking	It is quite old now, it is nearly 20 years old, and there are several things that are not in the law. Interview 2 p 9
	Law denies	4	Law denies use of sustainable material	(about mushroom burial pod) The laws are so strict for the coffin materials and everything so it would require changes in the law in Finland. Interview 3 p 34

			Law hinders cremation	This permission, environmental permission to have this many cremations per year. But if you have a permission for 1500 cremations per year, because then you have to have the Health (?) come regulations for the purification of the of the gases of the smoke. And if you don't have it, then, well, basically you maybe shouldn't or couldn't do more than 1500 cremations. But if it's necessary in your area to just do 2000. Then maybe you should work towards that you can do it. Interview 4 p 10
			Law denies sustainable practice	Because in Finland you are not allowed to bury without a coffin Interview 5 p 11
			Law defines materials used	Well, yes, in the cemetery there is the funeral law, of course. The law regulates certain things, so you can't do just about anything. There are certain regulations, even though the urn must be of a certain type, decaying material or the coffin must be of a certain material or the deceased must be taken to the grave within a certain time and that the law stipulates certain things. Interview 5 p 17
	Law on financial gain	7	Questioning whom would introduce new technology	The whole thing starts with the fact that this can't be business. and it is so when that subject area. Yes, there are these needs here too, but. Really, just like composting. What has been the discussion lately. Composting with different fillings has also been thought about. What would make the composting speed up or something like that, but it would be pretty crazy who would build such a facility and it would be some outside company, whom would have to do it, and whether it would become, whether it would get business, that's another matter. Interview 3 p 35
			Describes how funerary business for private is against the law	like the Crematory, If it was privately owned, then the entrepreneur would go and work nights. Because it's more money, I get this but. But now it's made so that in Finland it's against the law to have crematoria for profit.

				Interview 4 p 11
			Questioning is evolution in services is possible without commercial workers	But for me, the most important question on those, is that; is it possible without the commercial workers, commercial operators Interview 4 p 17
			Other religions can not have their own cemetery due to regulations	I have tried to find an area that is suitable for them, but there are several problems that they don't have money Interview 4 p 11
			Questioning if technologies can exist without commercial participant	For example composting and water cremation is hard to get started because the business is not allowed to make profit. And it has a lot of costs to get a business like that started. Interview 1 p 13
			questioning whom will pay for technologies	So when you are demanding that we want to have water cremation, we want to be compost when we die. Well, who is going to pay for it? Interview 4 p 17
			Limitations for development of current services	but we don't have that heat recovery yet, and the real challenge for the future is that a crematorium like that, where all the particle recovery is, so that it doesn't go up into the sky, so it requires a big facility. Interview 5 p 12
	The churches indirect power	6	Expressing that the church board is led by regulations set by law makers	Yeah, ministry of culture and education, so they decide about those changes to funeral law. And if they think that composting should be part of our Funeral services they could add that thing to the Funeral law and then then it would be OK, and then after it could be possible to arrange such services. Interview 2 p 16
			Church board has power over other organizations by giving or withholding support	We have been lucky the Finnish church (Kirkko Hallitus) have been a lot of support, because we are working with teams that don't have finances, energy, or capital to do it. So we have a lot of support. We have had the possibility to use their conference rooms and got their support. Interview 1 p 4
			Church board works with changes to the law	Kirkko Hallitus.... They work with everything that requires changes to the law.

				Interview 3 p 35
			Kirkko hallitus is a deciding presence	Kirkko hallitus is on the top level. Kirkko hallitus manages everything. So, if we decide to do something stupid Kirkko hallitus will tell us: 'What are you doing?!' Interview 1 p 11
			Church is in some areas more powerful than government	Can the government initiate this kind of projects? no, because it is church governed. The church run the operations. Interview 1 p 13
			misleading statement by the representative of church board	You know that system, In our law that anyone who would like to have a graveyard they can have such an area themselves. Interview 2 p 11
4. Self-organization	The law on financial gain	6	Law on financial gains staggers development	The whole thing starts with the fact that this can't be business. and it is so when that subject area. Yes, there are these needs here too, but. Really, just like composting. What has been the discussion lately. Composting with different fillings has also been thought about. What would make the composting speed up or something like that, but it would be pretty crazy who would build such a facility and it would be some outside company, whom would have to do it, and whether it would become, whether it would get business, that's another matter. Interview 3 p 35
			Privately owned could change aspects of current situation	like the Crematory, If it was privately owned, then the entrepreneur would go and work nights. Because it's more money, I get this but. But now it's made so that in Finland it's against the law to have crematoria for profit. Interview 4 p 11
			questioning if development is possible without commercial workers	But for me, the most important question on those, is that; is it possible without the commercial workers, commercial operators Interview 4 p 17
			Law hinders other religions to directly impact system	I have tried to find an area that is suitable for them, but there are several problems that they don't have money Interview 2 p 11

			Buisnesses could introduce new developments	For example composting and water cremation is hard to get started because the business is not allowed to make profit. And it has a lot of costs to get a business like that started. Interview 1 p 13
			Hindrence for development	So when you are demanding that we want to have water cremation, we want to be compost when we die. Well, who is going to pay for it? Interview 4 p 17'
3. Goals	Goals	8	Church shows uninterested in offering variety of technologies	Yeah, ministry of culture and education, so they decide about those changes to funeral law. And if they think that composting should be part of our Funeral services they could add that thing to the Funeral law and then then it would be OK, and then after it could be possible to arrange such services. Interview 2 p 16
			If you can not find your preference it is not the churches problem	You know that system, In our law that anyone who would like to have a graveyard they can have such an area themselves. Interview 2 p 11
			Bury on limited budget	That you have to preserve your money. You you cannot have more and more people working there just because you have a lot of demand for crematorium now. Interview 4 p 9
			Current budget cant offer variety	So when you are demanding that we want to have water cremation, we want to be compost when we die. Well, who is going to pay for it? Interview 4 p 17
			Money determines your ability to act in the current system	I have tried to find an area that is suitable for them, but there are several problems that they don't have money Interview 2 p 11
			Church offers what they can, if you dont like it go elsewhere	So, it's in the law that the Parishes or the Evangelical Lutheran Church they keep this grave yards for anyone then, If you are not pleased with that, maybe you can for example, Get the place for your ashes in your own land or some other nature area. There are several possibilities.

				Interview 2 p 12
			Funerary services are limited by money	for example we too will have 12.4 millions in Helsinki, which should then be used for funerals and then for cultural and historical ones and so on. But the money is unfortunate, in that it's not earmarked, when that money comes here, it's lost in the general coffers
			Funerals are funded by state and church operates within their funds	In the Finance Act, it is said that this state money can be used for the Cemeteries, for the maintenance of cultural-historical buildings and then for some of this population register activity, and now that money comes from the state, so it is given to the church council and it is somewhere around one hundred and twenty-four million in Finland, that state funding will come. And then the Church Board then distributes it to the congregations. Interview 3 p 44
2. Paradigms	User choices	8	Choice falls easily within paradigm during greif	I would say that grief makes a person react differently. Another can express its sadness so that it is just angry about any thing and it can be angry even that there is a tuft of grass. That my loved one's grave is here and then the next one has a tuft of grass on it and it makes her anger boil. Interview 5 p 7
			Most paradigm fitting is most popular	But then there is this grassy area, I say that it is quite popular with us, that grassy area for burial. Yes, it's traditional. That you get that tombstone, yes it might be, Still the most popular. Interview 5 p 9
			Despite own paradigm not fitting, people choose inside funerary paradigm in death	In Helsinki it is nowadays less than half of the people who actually are part of church, members of the church. But almost everyone still wants to be blessed by a Christian priest when they are buried and it's still like culturally important. Even though they're not members of the church anymore. Interview 3 p 26
			Despite own paradigm, in death revert to common paradigm	Their crematorium is open to all funerals and every person, but most people still choose to bring a priest to the funeral services,

				even when the deceased has left the church a long time ago or wasn't religious. Interview 1 p 14
			Sticking to paradigm seen as important	Yes, the burial tradition must also be maintained. So I guess I don't think that all grave blocks can't be turned into a forest. So yes, I like that the tradition shows that it is also appreciated. Interview 5 p 27
			paradigms change slowly	take for example ashes burial, changes are happening very slowly here in Finland. usually with anything to do with the cemetery. Interview 3 p 36
			paradigm in upbringing	Yes, there are such strong traditions and then it is said that at Christmas we go to the grave, on All Saints' Day we go to the grave, we do not speak ill of the deceased. These are the kinds of things that come, they are taught from childhood. Interview 5 p 24
			Non fitting area to current paradigm	I think it is also written in the law that we have to have this nondenominational area, but it's not really popular. Nobody wants to be buried there for some reason. Interview 3 p 25
	Leadership paradigm	4	Diversity in graveyard described by symbols on gravestones	And as you know, there are not many religious symbols in any graveyards, only in those gravestones, and in your gravestone you may get a religious symbol if you want, and a non religious symbol if you want. Interview 2 p 11
			If you don't want our paradigm, create your own	You know that system, in our law that anyone who would like to have a graveyard they can have such an area themselves. Interview 2 p 11
			People within the system acclimate to the paradigm. New people bring new paradigms	I would believe so, and then traditionally, for example, I have been in this same place for 30 years, so there are quite a lot of similar people who have been in the cemetery business for a long time. Not necessarily in the same cemetery, but even if you have changed to another cemetery or

				<p>another, but that they are somehow very closely tied to the cemetery, then it is a long experience that you will see each other and then of course, it is great if sometimes there is a change of field and you can see looking at it with new eyes, yes, yes, I like that, as strong professionalism comes from there.</p> <p>Interview 5 p 4</p>
			<p>If you dont like our 'normal' cemetery' make your own</p>	<p>So, it's in the law that the Parishes or the Evangelical Lutheran Church they keep this grave yards for anyone then, If you are not pleased with that, maybe you can for example, Get the place for your ashes in your own land or some other nature area. There are several possibilities.</p> <p>Interview 2 p 12</p>