Successful ageing in an interdisciplinary context
Successful ageing in an interdisciplinary context – popular science presentations

Sofia Alexopoulou
Frida Fart
Ann-Sofie Jonsson
Liran Karni
Lame Maatla Kenalemang
Sai Krishna
Katarina Lindblad
Amy Loutfi
Elin Lundin
Hanna Samzelius
Magnus Schoultz
Lisa Spang
Annika Söderman
Janelle Tarum
Antonios Tsertsidis
Bettina Widell
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Introduction
Eleonor Kristoffersson and Kerstin Nilsson

People live longer. According to the European Commission’s 2018 Ageing report the demographic old-age dependency ratio, which is people aged 65 or above relative to those aged 15–64, is projected to increase significantly in the EU as a whole in the coming decades. In 2010 it was 25 percent. In 2016 it had risen to 29.6 percent. In 2070 it is projected to reach 51.2 percent. This means that the EU would move from four working-age people for every person aged over 65 years in 2010 to around two working-age persons in 2070.

Life expectancy for males in the EU is expected to increase by 7.8 years over the projection period, from 78.3 in 2016 to 86.1 in 2070. For females, life expectancy is projected to increase by 6.6 years, from 83.7 in 2016 to 90.3 in 2070. The largest increases in life expectancies at birth, for both males and females, are projected to take place in the Member States with the lowest life expectancies in 2016.

In response to these challenges, Örebro University has established a research school within the interdisciplinary field of Successful ageing. The aim of the research school is to bring young scientist from different disciplines together and to create an arena for discussions and exchange of views to further explore the concept of Successful ageing. In a long-term perspective, our aim is to develop a platform for future interdisciplinary research.

The first group of doctoral students in the research school have recently completed a course on different perspectives of Successful ageing. One of the goals of the course was to present different research fields in a popular context. It is a great pleasure for us to present the texts from this group of young scientists in this anthology, Successful ageing in an interdisciplinary context—popular science presentations.

Here, we have chosen to focus on the positive side of ageing. Most contributions emphasize the elderly person from an individual perspective, rather than aging as a societal problem. The different book chapters cover ageing from the perspectives of informatics, robotics, human geography, media and communication, musicology, education, sociology, political science, disability science, sport science, public health science, nursing science, culinary arts and meal science and medicine.

Rowe and Kahn have identified three components of successful ageing:

- Free of disability or decease
- High cognitive and physical abilities
- Interacting with others in meaningful ways
In this anthology we take the concept of successful ageing further. An elderly person with an incurable disease subject to palliative care does not age successfully in accordance with the traditional Rowe and Kahn concept. The same applies for a person with Alzheimer’s. Still, that person can enjoy life, when being well taken care of, having nice people to interact with, listening to good music, being outside in the nature etc. Successful ageing also has an individual, subjective side, which is illustrated in many of the contributions.
Life Satisfaction When Aging in Place
Lisa Spang

Introduction
In Sweden today, most elderly people live in ordinary housing, defined as aging in place. However, not everyone regards aging in place as a positive experience and there is a shortage of nursing homes. This PhD project Life Satisfaction When Aging in Place aims to identify and describe the needs that enable aging in place by conducting four studies using interviews and surveys of participants that have experienced involuntary aging in place. This chapter begins with a description of a nursing home applicant, Ann, in order to demonstrate the participants of the research. Thereafter, the research field of aging in place is presented, followed by the theoretical basis of the project and a discussion on why this PhD project is important.

The case of Ann
Ann is 85 years old and retired 20 years ago. She has been actively involved in both a pensioners’ association and her church. Two years ago, Ann’s husband passed away and shortly after, Ann stumbled on the edge of a rug, fell and broke her right hip. The rehabilitation was a long process, with additional slip and fall accidents, resulting in Ann being dependent on her wheelchair. Ann lives in a small apartment on the third floor without an elevator. Earlier, Ann loved the centrally located apartment as it offered proximity to the city’s shops and parks, for her and her husband. Now, Ann feels alone and trapped in her home and is dependent on help from homecare services both with the household chores and with her personal hygiene.

Sitting alone and feeling isolated in her apartment, Ann feels that she really has to move. So, a month ago, she applied for place at a nursing home. After a few weeks, Ann called the municipality to ask when she could expect to move. The answer was that there was a queue and that it might take a couple of months. Ann does not know which nursing home she is going to move to. She would like to stay in the same city district, but the municipality has told her that they prioritize according to needs and that she will get accommodation wherever it is available. Not knowing where or when she is going to move makes Ann feel stressed as she does not know what to bring with her or when to start packing.

This is Ann, she could be your mother, grandmother, neighbour or your friend.

The principle of aging in place in Sweden
Until the 1960s, it was recommended that the elderly were relocated into nursing homes when they reached old age, resulting in overcrowded institutional nursing homes with sometimes questionable living conditions. As a
response The Principle of Aging in Place emerged, initiated by the Swedish government to provide better care for older people and to make it possible for them to remain in their own homes. Aging in place was described by Pastalan in 1990 as “being able to remain in one’s current residence even when faced with increasing need for support because of life changes, such as declining health, widowhood, or loss of income”. Today, the principle of aging in place is well-established in Sweden. To be able to stay in their own homes, elderly citizens can apply for meals on wheels, an emergency response alarm, or assistance with personal activities or household duties. In most parts of Sweden, the municipality is responsible for homecare services but in some parts, according to the Swedish Act on System of Choice in the Public Sector (“Act of Free Choice Systems”), the elderly themselves have a greater influence over decisions regarding who should provide them with homecare. According to the World Health Organization, the aim of aging in place is not just to meet a person’s desire and ability to remain in their current residence but also to be able to continue to live relatively independently in the community. To accommodate the needs of the elderly to interact with the community, through the principle of aging in place, the elderly are provided with support from homecare services to carry out errands and do some shopping, or by offering the elderly person social interventions, such as social daycare centers where the elderly meet for social interaction.

When Ann applied for a place at a nursing home, she got in touch with a social worker, who subsequently in accordance with the Social Services Act evaluated her needs based on the principle of aging in place. This means that if she can receive support in her own apartment, the application for a place at a nursing home may be rejected. Moreover, if the application for a place at a nursing home is approved, the elderly in major cities cannot decide which nursing home they would like to move to. Hence, the choice of where to spend the last years of her life is not up to Ann. Consequently, due to the principle of aging in place, the number of nursing homes has been reduced over the last few decades. This might be the reason for the shortage of nursing homes, leading to a waiting list of from weeks to months, like in Ann’s case.

**Aging in place as a way of encouraging successful aging**

The concept of successful aging has been described as a process or a goal, as a theory, paradigm or a model. Therefore, there are many ways of looking at the concept of successful aging. In this chapter, successful aging will be linked to the PhD project by presenting the interaction between; the concept of aging in place, the theory ecological framework of place and two models, the Person-Environment-Occupation Model (PEO Model) and the Selection, Optimization with Compensation Model (SOC Model). As shown in Figure 1, the blue boxes are related to successful aging as they describe how the elderly may enjoy a feeling of wellbeing or life satisfaction, which have
previously been identified as experiences connected with successful aging. The green arrows demonstrate how the interaction is not only directed at successful aging but also between each other. For example, the SOC Model can be used as a compensation in old age to enable aging in place. And both the PEO Model and aging in place are based on the theory of ecological framework of place, which therefore can be linked to each other.

![Figure 1](https://example.com/figure1.png)

*Figure 1, Map of models, theory and concept connected with successful aging.*

According to the theory on the ecological framework of place, human occupations are the most important part of the interaction between person and environment, as it is human occupations that create the experience of a place, making an environment feel either limiting or encouraging. According to this framework, successful aging can be encouraged by supporting the elderly in their own environment, like in Ann’s case by enabling aging in place. Thus, the ecological framework of place has been used as a conceptual foundation by governments implementing aging in place in their societies.

Figure 1, shows that the ecological framework of place is not only related to the concept of aging in place but is also the foundation of a model in the field of occupational therapy (a profession working with the activities of daily life) called the Person-Environment-Occupation Model, (the PEO Model). According to the PEO Model, activity performance is influenced by the interaction between person, occupation and environment. The PEO Model
explains how changes throughout life are inevitable and how age affects the perception of our environment. This is because the perception of the environment is related to the risks that occur with failing health, which increase with age. Therefore, the elderly are described as a group vulnerable to changes in their own environment as the changes affect their level of independence in their activity performance. The PEO Model states that over a lifespan, the environment is more likely to change than the person, which should be taken into consideration when working with the elderly. According to the PEO Model, it is Ann’s apartment that makes her feel isolated and unmotivated to perform activities. Hence, if she moved to better accommodation, not necessarily a nursing home but a two-room apartment on the ground floor, Ann’s level of independence would increase, which could lead to a new motivation to perform activities in her everyday life. In occupational therapy, experience of a meaningful everyday life filled with activities that allows individuals to be independent is described as a way to promote health. This could in older age be interpreted as experiencing successful aging.

From a psychological perspective, successful aging is described using the SOC Model. This model can also be connected to aging in place, as it explains how the elderly through life may enjoy a feeling of independence and experience personal growth by selecting new activities or goals in their everyday lives. This would mean that they optimize and compensate for natural losses, and focus on the benefits of getting older – such as experience, wisdom and confidence. For example, with increasing age, physical barriers may occur in the elderly person’s home environment. Like in Ann’s case, straight after she broke her hip, she adapted her life situation by selecting the goal aging in place. She received help from an occupational therapist in order to optimize or modify her home with specific tools and home adaptation, and she applied for homecare services to compensate for household chores. In the field of psychology, successful aging in place is described as a life strategy to compensate for age-related losses in order to maintain a feeling of life satisfaction. To find life satisfaction, the elderly person has to use coping strategies like the ones in the SOC Model and to embrace the environmental conditions to be able to continue performing activities with a sense of independence. In that way the SOC Model connects aging in place with successful aging (see Figure 1).

The need for research in the field of aging in place

The fact that Swedish municipalities receive applications for places at nursing homes on a daily basis indicates that the principle of aging in place cannot meet the needs of the entire elderly population. In the Swedish media, the topic of the living situation of the elderly is a recurring theme, including the right to self-determination over your everyday life, long waiting lists for nursing homes and access to limited dwelling communities. In 2015, Swedish
Television presented a review of the different options the elderly have regarding relocating to a nursing home that depend on geographical aspects. The review found that many elderly people, like in the case of Ann, live in their homes due to the absence of nursing homes experiencing feelings of frustration and/or isolation.

Previous research within the field of aging in place has mainly focused on three areas, a) describing how the elderly perceive their psychical environment in their own homes b) evaluating the cost difference of aging in place with living in a nursing home c) describing how the ability to engage in activity performance interacts with self-experienced independence and with the environment. Research conducted from the perspective of the elderly has examined how the elderly reflect on their current living conditions and future alternatives. The results show that most elderly people would prefer to remain in their own homes even with declining health. The elderly have also described how the decision to apply for a place at a nursing home is not an easy one and is something that has developed based on increasing needs over a period of time. Some elderly people also feel ashamed that they have to relocate to a nursing home. Therefore, a knowledge gap has been identified; to understand the needs that cannot be fulfilled with aging in place with support from the community there is a need for further research from the perspective of the elderly themselves. This knowledge gap can be investigated through the inclusion of nursing home applicants in research.

When the elderly are faced with a life crisis, like for example, being widowed or suffering from disabilities, they sometimes believe that their only alternative is to move to a nursing home based on previous experience from their own parents or based on previous social standards. Like in Ann’s case, they end up experiencing aging in place involuntarily due to a lack of information about other options regarding where they live. Therefore, this PhD project *Life Satisfaction When Aging in Place* will strive to provide recommended interventions for further planning and/or improved guidelines on elderly care. To meet the needs of a growing population with ever-higher demands on society when it comes to the standard of living, by informing the elderly about their rights, options and opportunities to determine how to experience life satisfaction when aging in place.
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“Everything you look at can become a fairy tale and you can get a story from everything you touch.”
– Hans Christian Andersen

A Fairy Tale of Scientific Research: The Digital Divide as a By-product of the ‘Mechanic Nightingale’
Sofia Alexopoulou

Introduction
Fairy tales as well as academic research tend to adjust to the needs of societies by transferring their universal messages or conclusions. As the Philosopher of Science, Kuhn, suggested through his important work, knowledge or paradigms shift as new discoveries come to light. More precisely, the functions of a paradigm are an ideal occasion for scientists to solve problems and to provide their own opinions about their solutions. The same applies to my field of research where new knowledge ‘pops up’ all the time. An illustrative example is the term the digital divide which was initially referred to as computer access and recently has been gradually limited to the gap between those who do and those who do not have access to the Internet and its benefits. In other words, there has been a shift from computer access to Internet access because in industrialized societies, the ownership of a desktop/laptop as well as having Internet connection are things which are nowadays taken for granted.

My goal with this chapter is not only to discuss the multifaceted concept of the digital divide on which much ink has already been spilled, but I would mostly like to pinpoint the difficulties that appear when Information Communication Technology (ICT) reaches old hands, and to introduce the reader to the structure of my PhD project, as it will be developed below. By the term ICT, I refer to any form of new technology that brings a positive impact to the daily lives of older people with a real emphasis on computers, laptops and the Internet. At a later stage, I will be able to define in a more accurate way the forms of ICT that I am going to employ for my research.

This chapter is organized as follows. I start with a fairy tale that has been very dominant in the area of technology. The fairy tale was written by the very famous storyteller, Hans Christian Andersen, and is called: “The Nightingale”. Based on this fairy tale, I pose some rhetorical questions which are connected to my research topic. Then I describe in brief, the concept of the digital divide which is going to occupy a central part as regards my literature review. I also sketch the structure of my PhD thesis and the group of seniors which I am interested in. Additionally, I make an effort to present the theory of ageing that most likely fits the purposes of my thesis. The theory of active ageing can be easily found in almost every policy framework which refers to the elderly at the European level. The final part of the chapter is dedicated to
the importance of free choice in digital materialization or not and to a general
discussion about the potential role of technology in the lives of older adults.
Given this brief outline, let me now introduce you in greater depth to my
‘magical fairy tale of scientific research’ by first telling you a story.

The fairy tale “The Nightingale”
And the story goes like this…

The Emperor of China learnt that one of the most beautiful things in his
kingdom was the song of the nightingale, and he asked immediately to see
this bird. A kitchen maid, who knew well the natural surroundings of the
bird, led the royal court to the nearby forest. After a while, the bird appeared
and agreed to come to the palace. The Emperor was astonished by the sweet
voice of the bird and immediately gave the order for its captivity. Later on,
the Emperor obtained a similar bird and the only difference was that it was
mechanical. As a result, he lost all interest in the real nightingale. The poor
bird returned to the forest. But… the mechanical bird finally broke down due
to overuse. The Emperor was very sad, and this event led his health to deterio-
rate considerably. The bad news travelled to the real nightingale which decid-
ed to pay a visit to the Emperor. During this last visit, the bird sang beautiful-
ly to please the Emperor and all of a sudden there was a miracle. The Emperor
recovered fully from his deathbed. In return, the Emperor thanked his little
friend and became the wisest Emperor ever to have lived in that region of the
world...

If you take a closer look and decode the key points of the nightingale story,
you will see some interesting messages:

1. *The taming process*: the Emperor develops a strong relationship
   with the real nightingale.
2. *Technology ‘rules’*: the mechanical bird takes the place of the
   real one.
3. *Technology breaks down*: The mechanical bird collapses due to
   overwork.
4. *Back to reality*: The health of the Emperor is restored, thanks
to the song of the real nightingale. The Emperor realizes his
mistake and becomes a better person.

The story broadly depicts the negative aspects of technology (e.g., it breaks
down easily, it replaces the real nightingale in a flash of second and so on)
and leaves you with what I call a ‘pearl of wisdom’. According to this pearl
of wisdom, what counts the most is the connection with the real world, or to
put it differently, the attachment to the real nightingale bird. In the same way,
every time I read the story of “The Nightingale”, a number of rhetorical ques-
tions come to mind with respect to my topic. What happens when technology,
which is so widespread and covers every walk of life, is not used by some peo-
Do older people have difficulties in using ICT? What problems do those who are left behind in the realm of technology face? Do we run into a new type of social inequality in the middle of our information era? Does human contact still matter? Will technology ever be able to replace human communication? Is technology something positive or negative? I probably associate this with the fairy tale because the digital divide represents a by-product of technology and is also considered as a problem (something negative again). The digital divide denotes an adverse condition that causes social implications both for the individual (lack of essential information resources, limited social connectedness, inability to purchase goods online and so on), and for society (citizens at different ‘speeds’, social inequality, marginalization, reduced life chances and so on).

The digital divide: is it a real problem that needs a solution?

Despite its negative nature, many scholars tend to suggest that the digital divide is a problem which will vanish through diffusion and learning processes, but also when cohorts that work with computers replace older cohorts. This is rather a sweeping statement in an attempt to deconstruct a very complex issue. Unfortunately, I do not agree with the optimistic scenario described above, nor does the European Union seem to do so. It could be that the skills of older people will be upgraded in the near future, but then again we should remember that technology is also in a ceaseless spin. The digital divide will analogously change its form, as the chameleon does in line with his environmental context. Consistent with this line of reasoning are the words of Professor Van Dijk who says that some divides will narrow in the future, but the spending on digital technologies is not reducing the divide at all. Additionally, the discovery of new technologies such as broadband Internet, show once more that old divides (a lack of necessary skills and usage access) remain active by making it difficult to bridge the material access divide.

To this end, many governments in the European Union embrace policies that put an end to the digital divide, which has been identified as a threat to social inclusion and the equal participation in the knowledge-based society. The supporting arguments for endorsing policies against the digital divide are grouped into four broad categories:

5. Stimulating employability (more opportunities to find and remain in a job).
6. The equal participation of citizens in the information society (actual benefits embedded in ICT usage).
7. Economic reasons (more on-line consumers).
8. Resourceful public service delivery (e-government).

Regrettably, older individuals tend to be more susceptible to the problem of the digital divide because in most cases, they lack the necessary skills. As I
said before, the similarities between the story of the mechanical nightingale and the technology-digital divide are many, but my objective here is to make it clear that technology can also be an efficient tool for humans, and especially for the elderly. What I would like to show is that deep down technology is not limited to some kind of binary logic: technology is something good versus technology is something bad. Things are more confused than the previous simplistic view. Also, we should bear in mind that technology is not a panacea for addressing all the problems of humankind, but represents an essential vehicle for making our lives easier and making us more informant users. In my view, technology constitutes an open window of boundless opportunities, if we are capable of using it efficiently and wisely. Of course, human interaction still holds a central place in the whole discussion and will continue to do so. I am not proposing to abandon face-to-face interaction and to delve into the 'Technological Wonderland', as a new Alice.

The structure of my PhD thesis
Through my studies, I aim to shed light on the ‘mechanical nightingale’ (the technology/digital divide) and why some individuals are not able to make use of it. With this purpose in mind, I will look at the policies that the European Union (EU) has put forward with the purpose of handling the problem of the digital divide, always with respect to older adults. Plus, I am very interested in how these particular policies are eventually ‘translated’ into the national context of two apparently diverse countries: Sweden and Greece. These two countries are different owing to their historical and cultural background, but to their economic power as well. But then again despite their differences, we should take into account that technology is not confined to countries; on the contrary, it is addressed to all individuals irrespective of the age factor.

At the micro-level (end users), I am convinced that seniors are the ones who know the most about their experiences (life-technobiographies). For that reason, I intend to conduct interviews with them so as to become better acquainted with their concerns regarding two fundamental aspects: firstly, what is their own definition of active ageing and secondly, what are the difficulties (if any) that they encounter when technology falls into their hands. Phenomenology as a method can be very useful to meet this goal. As a matter of fact, phenomenology ‘is comprehended through embodied experience. Through close examination of individual experiences, phenomenological analysts seek to capture the meaning and common features, or essences, of an experience or event. The truth of the event, as an abstract entity, is subjective and knowable only through embodied perception; we create meaning through the experience of moving through space and across time. The phenomenological perspective is nicely captured in a remark attributed to Einstein that expresses the difference between embodied time and chronologic time: Put your hand on a hot stove for a minute and it seems like an hour. Sit with a pretty girl for an hour and it seems like a minute. That’s relativity” (Starks H. and Brown S., 2007:1374).
The portrayal of older people

It is very difficult to say who is old today, especially when life expectancy is increasing constantly. And what do we mean by the word ‘old’, is it the chronological age that matters or the subjective age? In studies on the digital divide, we do not find a common approach on how to draw the ‘age line’ as regards the senior population. For that reason, I will probably adopt the age categories that have already been developed by two researchers (Peacock and Künemund, 2007) in their study on the digital divide at the European level: the “middle-aged” (55–64), the “young-old” (65–74) and the “old-old” (75+). For the aims of my project, I will start with the group of the “young-old” (65–74) and depending on my findings I will see if I also have to move my interest to the “old-old” (75+) group.

The approach of active ageing

As regards my theoretical angle on ageing, I will apply the term of active ageing. Just as the concept of successful ageing, this term has many meanings, depending on the academic source. In my project, the active ageing approach may be more relevant and analytically useful than successful ageing. The concept emphasizes questions about how the elderly use the Internet to be active in different areas, but also how the digital divide has a significant impact on the possibilities to be active.

More accurately, active ageing in the European discourse signifies helping people to remain in charge of their lives and to contribute as much as possible to the economy and society. The EU designed the Active Ageing Index where one of the indicators of the fourth domain (‘Capacity for active ageing’) is reserved for the actual use of ICT made by senior citizens. As the official page of the Active Ageing Index states, older people using the Internet are able to communicate better with others, and consequently to engage more actively in society. It is now known that an excessive use of the Internet may be harmful to a person’s health, but this kind of phenomena has been noticed principally in young individuals. All in all, it is reasonable to claim that the use of the Internet among older people is something genuinely positive for their own capacity for active ageing, but the final conclusions of my thesis will show whether this standpoint is true or just another popular fairy tale.

Until now, most studies have focused exclusively on the promotion of exercise, healthy diets, good health, the prevention of falls and the creation of smart houses, which will help seniors to remain longer indoors without posing an extra financial pressure on the health systems in place. In my opinion, only a handful of studies raise other issues of equal importance such as the advantages of technology for participating in society, for gaining new knowledge and why not for having fun, for example, communicating with other older adults who have the same interests or playing online games. Online games are not discussed at all in my PhD project. It is very important that we bear in mind that our lives do not end with the arrival of the third and the fourth age. The remaining years of older adults should not be limited to an
abundance of worries and fears for the future, instead every old person him or herself should be able to define what active ageing means to their lives. Growing old can also be a period of time devoted to knowledge, social interaction and joy. Technology can help a great deal in fulfilling this encouraging scenario for those who wish to live like that and without imposing any type of coercive mechanism.

The importance of free choice as an ending remark

At the end of the day, everything revolves around the idea of ‘free choice’ and speaking generally, I think it is a pity to throw away due to ignorance the choice of becoming wiser and better people, by imitating the example of the Emperor’s story. My suggestion is to maintain a balance between the mechanical and the real nightingale because only then will we be able to get the most out of both (technology-human interaction, as a win-win situation). In sum and returning to the fairy tale, if I were in the position to change part of the story, I would definitely choose to rewrite the last scene. One idea would be to bring together the real nightingale and the mechanical one to sing in front of the Emperor, as a perfect duet, but then the story would probably not have the same strong plot as the original story... Moreover, as we all know, there is a moral to every fairy tale that creates a sense of security and an invisible bridge which pushes the reader smoothly back to reality, that is to say ‘And they lived happily ever after’. The perfect ending in my research fairy tale would be that the older adults who wish to use technology are able to do so without difficulties, and at the same time live life according to their own definition of active ageing (free choice).

The END for now or perhaps I should say to be continued…
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“Dad, you’ve done a lot of great things, but you’re a very old man now and old people are useless”. These were the words used by Homer Simpson when speaking to his father Abraham Simpson in an episode of The Simpsons. Just like Homer, many other television characters, especially children and teenagers seem to think of older people in the same way. For example, some Disney films such as The Lady and the Tramp, The Beauty and the Beast and Winnie the Pooh also portray older people in a demeaning way. Younger characters in these programs or films usually use words such as forgetful, stupid, mean and grumpy to refer to the older characters. Even in the series of children’s books Emil of Lönneberga (in Swedish Emil i Lönneberga) written by the Swedish writer Astrid Lindgren, older people are also said to be poor and useless. Take Krösa-Maja, for instance, she is described as “en rask torpar kärring” which basically means that she is a mean, spiteful old hag who lives in a small cottage. One of the main things the books say about Krösa-Maja is that she likes to gossip. She is often seen running around Lönneberga farm telling other people about Emil’s adventures, even if it means not getting on with her own work at the farm.

Whether it is how older people tend to be portrayed in films, or how advertisements for anti-ageing creams equate youth with beauty and wrinkles with decay, there are generally harsh and unflattering images in the media that shape assumptions about ageing. Not only do these images portray older people in a demeaning manner, but they also falsely represent older people. Think of any television programme or movie that you have watched recently. Did it feature any older characters? If so, which roles did they play? Were they the main characters or minor characters? Did they appear grouchy or happy? What about the racial composition? How were they generally portrayed, negatively or positively? Are there any differences between how older men and women are portrayed? What kind of a relationship did the younger people have with the older people? The different portrayals of older people in the media tend to promote ageist attitudes towards older people, a phenomenon which is commonly known as “ageism”. Ageism is often described as discrimination against individuals or groups because of their age. Primarily, previous work on the portrayal of older people in the media shows that older people are underrepresented and negatively portrayed.

What can be done about the negative stereotypes where older people are portrayed as useless, stupid, miserable, irrelevant even? Although we may hope for good health and happiness in old age, we tend to believe that growing older involves deterioration and decline because of the negative images in the media that shape assumptions about ageing. More recently, images that portray older people negatively are being replaced with positive images. We see a lot of images, especially in advertisements, that promote anti-ageing products that sell us the idea of “successful ageing”. Put simply, successful ageing is the idea that we can live happier, longer and healthier lives. The me-
dia gives us the impression that if we take care of ourselves while we are still young, like eating better or exercising, then we will have fewer health problems in the future and age gracefully. Successful ageing’s overemphasis on the individual and individual action as the basis of “success,” hence excludes certain groups of older people, such as the cognitively impaired, socially isolated and frail, from ageing successfully. Hence, my argument that, the concept mirrors neoliberal ideas. Neoliberalism is a term used to describe a shift in government where the role and responsibility for resources (e.g., healthcare services) is transferred from the state onto individuals. Generally, neoliberalism is driven by the idea of minimal government intervention, free market, and the belief that inequality is a necessary consequence of independent individual choices. My work, therefore, is concerned with how the discourse of successful ageing is represented in Swedish mainstream media (i.e. newspapers and television). That is, how the media constructs older people as healthy, active and knowledgeable from a view that once depicted them as frail, dependent and unintelligent. This paper in particular focuses solely on age stereotypes found in the media and their potential effects on the health of older people.

I remember that when I was growing up the image I had of my great grandmother was that she was frail. This was because her hands were sometimes shaky. I also thought that she was out of touch. I used to say to myself, what could you possibly learn from an old person like her. As a result, I spent very little time with her. But as I grew older, I began to appreciate my great grandmother all the more and started spending more time with her. Today, I have come to realise how completely wrong I was about her. She is the exact opposite of the stereotypical image I had of her and possibly other older people. At 108, she can still see (without glasses), hear (without a hearing aid), walk (her cane supports her), eat (she loves her steak) as well as perform basic activities of daily life like dressing, bathing and feeding herself. While some people in our small village call her a “witch”, because she has lived for so long, I call her strong-willed and wise. I mean this is a woman who wakes up every morning at the crack of dawn to make herself her morning tea, shortly before she does simple arm and leg exercises. She is a woman who has taught me about the history of our/my country and culture among other things.

So what are stereotypes? Most people agree that stereotypes can be described as the common images or beliefs, expectations and theories that a person may have about certain groups in society, for example, older people. Whether it is young Emil poking fun at the old people in Lönneberga or Homer making fun of his father because he is an old man, media images influence the way in which people think about as well as how they behave towards older people. Not only do images of older people in the media influence younger people’s perceptions of older people, but they also influence the way in which older people see themselves. One may then wonder to what extent age-related stereotypes can affect older people’s health. A growing body of research within gerontology shows that exposure to media messages may influence a person’s cognitive and physical outcomes. One theory, which attempts
to explain how age stereotypes are likely to influence the health of older people, is the stereotype embodiment theory (SET) proposed by the psychologist Becca Levy.

According to SET, age stereotypes follow a three-step process. At first, age stereotypes are “internalized” or developed from a host culture, for example, our society, from early childhood. What this means is that, society teaches young children about what it means to get older. Second, at a certain point in a person’s life, age stereotypes become “self-stereotypes” about oneself as an ageing person. Third, these self-stereotypes become consciously and unconsciously activated and may have an effect on older people’s health. Central to these steps are the four main components of SET: i) stereotypes become internalized across a person’s lifespan, ii) stereotypes can operate unconsciously, iii) stereotypes can gain salience from self-relevance, and iv) stereotypes utilize multiple pathways. Consequently, the influence of age stereotypes manifests itself through two key directional components. First, in a top-down direction, such that age stereotypes are assimilated from the culture to influence the individual, that is, from society to self. Second, through a developmental approach that occurs over time such that age stereotypes are assimilated over a person’s lifespan, that is, from childhood to old age.

**Stereotypes become internalized over a person’s lifespan**

Dating back to childhood, we carry certain beliefs about what it means to get older. As we grow older, the age stereotypes we held as children also intensify. We live in an era where we are constantly being exposed to age stereotypes, especially in the media. It is mostly children and teenagers who are exposed to negative age stereotypes. Arguably, negative age stereotypes circulated in the media teach children to fear growing old. This is because they tend to portray old age as a time of helplessness and dependence. The outcome of this process was illustrated when young children were shown pictures that depicted a man at four stages of life. Sixty-seven percent of the children, some as young as three, associated the picture of the oldest man as helpless, dependent and passive. It was also found that children who had internalized age-related stereotypes carry with them expectations about their own ageing process. When asked how they felt about growing old, more than half of the children responded negatively, for example, some said they felt awful. As such, young people are more likely to distance themselves from interacting with older people. The divide between the young and the old is further emphasized within larger social structures that separate younger and older people within various institutions such as work. Such behaviors reduce new and future opportunities for young people to engage with potentially positive examples of ageing that can counter negative stereotypes of ageing.

**Stereotypes can operate unconsciously**

We all have beliefs/ideas about what it means to grow old. Many of them are subconscious and have existed since childhood. Without putting much thought into it, think of a 25-year-old man and a 65-year-old man. Which
of the two would you say is healthier? If you said the younger person, then you have just experienced unconscious age bias. The good news is, you are not alone. Your answer is likely to be related to how your brain has learnt to automatically associate certain words with ageing over the years. Similarly, if asked to picture an older person, most people picture someone with a cane, walker or wheelchair. Seeing an older person using a cane might also trigger associations of dependency and incompetence. When stereotypes are negative, when older people are convinced that becoming old means becoming helpless, useless or devalued, they are less likely to seek preventative medical care and die earlier than they might otherwise have done. They are also more likely to suffer memory loss and poor physical functioning. However, when stereotypes are positive, when older people view age as a time of satisfaction, self-realization and wisdom, they experience the opposite. They show an improved memory performance and a higher level of functioning.

**Stereotypes can gain salience from self-relevance**

The difficulty of growing old exists in our everyday interactions with society and our own internal processes. It starts the moment we realize we are approaching old age, when we look in the mirror and see wrinkles, the moment we start experiencing changes associated with growing older like hearing problems or aching knees. As we become more aware that we are growing old, the way we see ourselves also changes. Research shows that being afraid of growing old may shorten a person’s life. While some people may experience this change in identity at the beginning of old age, some experience it much later. This is because some people are more exposed to negative age stereotypes than they are towards positive age stereotypes. The degree to which people are exposed to ageism also influences self-identity changes. Ageism exists everywhere. Be it at the workplace, in hospitals or in the media. The media, for example, promotes the idea that looking young is an important feature of being a woman. This promotes the idea that growing old is an undesirable feature and may make older people, especially women, feel bad about themselves or how they look.

**Stereotypes utilize multiple pathways**

Age stereotypes can be experienced either psychologically, behaviorally or physiologically. The psychological pathway is illustrated by expectations. It has been found that age stereotypes generate expectations that act as self-fulfilling prophecies. Older people were asked to perform one cognitive and one physical task after being randomly assigned to unconscious age stereotype priming groups that were either positive-cognitive (for example, intelligent), negative-cognitive (for example, stupid), positive-physical (for example, active) or negative-physical (for example, passive). The results indicated that those who were exposed to the positive age stereotypes performed better than those exposed to negative age stereotypes on both tasks. The behavioral pathway is exemplified through healthy practices. This is because negative age stereotypes are often based on the assumption that health problems are an inevi-
table consequence of growing old. It has been found that people with positive age stereotypes live 7.5 years longer than those with negative stereotypes. The assumption is that people with positive age stereotypes have a stronger will to live. Which in turn, might affect their ability to adapt to the hardships of old age. The physiological pathway is illustrated by the part of the nervous system that responds to stress. It was found that older people who were unconsciously exposed to negative age stereotypes demonstrated a heightened cardiovascular response to stress whereas those who were exposed to positive age stereotypes demonstrated reduced cardiovascular response to stress, which is accompanied by effects of ill health. Thus, compared to people with negative age stereotypes, people with positive age stereotypes are more likely to eat a balanced diet, limit their alcohol consumption, exercise, undergo regular physical examinations and stop smoking. Hence, people with positive age stereotypes are likely to have a higher level of physical functioning over time. As positive age stereotypes are also associated with a greater sense of control, this enhances older people's sense of self-efficacy – their ability to remain captains of their own ships.

In conclusion, it is evident that the media spreads negative images of age stereotypes more than positive ones. In turn, people carry these negative images from early childhood into old age, which influence their interaction with older people as well as how older people may come to see themselves in the future. Older people tend to be underrepresented or portrayed less positively in the media. This in turn promotes ageism and reinforces negative age stereotypes, whether we are aware of it or not. SET proposes that such negative images have harmful effects on older people's health outcomes. Further, SET suggests the need for more positive images if people are to improve their health outcomes in old age. Which will consequently help them to age successfully. The media thus needs to recognize that old people are not useless and stop portraying them in this manner. It is essential that we replace negative age stereotypes with positive age stereotypes if people's attitudes towards the older generation is to change and if older people are to feel good about themselves as well. However, it is also important to note that overly positive portrayals can create an unrealistic model of ageing that many individuals may not be able to attain. Further, it is essential to increase interaction with older people, so as to reduce ageism. This will increase the collaboration between researchers, policy makers, health practitioners, community members and older adults as key stakeholders in the advancement of successful ageing at an individual as well as social level.
References


Robotics for Successful Ageing
Sai Krishna and Amy Loutfi

Centre for Applied Autonomous Sensor Systems (AASS), Örebro University, Örebro, Sweden

Abstract

The main idea of the ongoing research is to use robotics to create new opportunities to help older people to remain alone in their apartments which can be achieved by using robots as an interacting tool between the elderly and their family members or doctors. This can be done by building a system (software) for Mobile Robots to work autonomously (self-driving) and semi-autonomously (controlled by the user) when necessary, depending on the situation and the surroundings. This system is integrated with social cues, particularly proxemics, to know and understand human space, which is very important for social interaction. In conclusion, we are interested in having a Socially Intelligent Robot, which could use the social cues, proxemics, to have a natural interaction with people in groups.

1. Introduction

The changes that are expected with an increasing elderly demographic bring both challenges and opportunities at the same time. One expected challenge is how to provide high quality services and contacts despite many countries, such as Sweden, expecting a reduction in the workforce to sustain the growing elderly population. Another expected challenge is that as there are an increasing number of elderly people receiving social benefits, the burden on the welfare system will be too great and unsustainable. Technology is often one solution that is put forward to mitigate this challenge. However, with the advance of technology, there is also a concern that the technology per se may also increase isolation, the sense of loneliness, or stigmatization. As a consequence, new subsets of technologies are being proposed with the sole purpose of promoting interaction, whether this interaction is directly between two people, or between an artificially intelligent agent (a social robot) and an elderly person. For example, recently, robots have been used for many things for elderly people in the context of telepresence (MRP). Mobile Robotic Telepresence (MRP) systems allow users to teleoperate a robotic platform while interacting with elderly people in remote locations. Telepresence robots are specially designed for elderly people who wish to remain at home alone and video calls can be provided enabling a Skype-like interaction with the added advantage that the remote user can move around in a remote environment. Other examples include an increase in the use of social robots as personal assistants. These are robots, which display full autonomy and have important functions like reminding a person to take his or her medication, raising the alert or providing a general social interaction by answering queries.
During this interaction, the robot either operated manually or automatically, should respect the elderly person’s space, understand their behavior, dynamics and the intentions behind their actions. For this to happen, they need to understand human social signals, which include non-verbal behavioral cues such as facial expressions, body postures, gestures and proxemics. Proxemics in particular is very important in social interactions and is defined as the study of human spatial and orientational behavior, while interacting with each other in co-present face-to-face social interactions. The concept was developed by E.T. Hall [1]. Robots need to understand, learn and execute proxemics while interacting with humans. Proxemics is divided into four different zones: Intimate Space, Personal Space, Social Space and Public Space. Interaction between partners falls under Intimate Space. Interaction between family members and close friends falls under Personal Space. Social interaction, which includes interaction between colleagues, little known or unknown people fall under Social Space. Speech in public and similar conversations where one person is speaking and others are far away listening can be considered in this Public Space. We are mainly concerned with Social Space as humanrobot interactions fall under this zone. In social interactions, humans have a tendency to organize themselves spatially while interacting with each other. Regarding these spatial arrangements, one promising framework is Adam Kendon’s Facing Formations [2] famously know as F-formations. These F-formations are very helpful in increasing the quality of interaction and further, could be used for a collaborative effort between humans and robots. For the social interaction between humans and robots, the robots should be enabled to automatically adhere to F-formations while joining groups. For this, the robot should firstly detect the formations in which people are standing. Secondly, find a spot in the group and navigate itself into the formation to socially interact with the people.

During the process, it is possible to categorize the challenges faced into two groups. One is people detection such as body occlusions, cluttered background and image quality. Body occlusions entails that while people are standing in formations one person may occlude another person. The background has many objects, which makes detection difficult. If we increase the image quality, the processing speed of the robot should be compromised and either the image quality or the robot’s number of frames per second should be selected. Second, formation detection such as the theoretical model to mathematical model, changing formations and multiple group formations. There is a psychological model for F-formations but there is no standard mathematical model. The robot should be in a position to cope with the formations as they change and also with multiple formations.

Solving this problem is very useful for both social and telepresence robots. In our case, we are studying both the robots. The project is about developing methods to enable the robots to join the groups and to understand the effect on users.
2. F-formations:

Adam Kendon’s F-formations were originally defined as “F-formation arises whenever two or more people sustain a spatial and orientational relationship in which the space between them is one to which they have equal, direct and exclusive access” ((Kendon, 1990), pg. 209).

An F-formation gives rise to three social spaces. The *O-space* is the convex empty space where all the people standing in the formation surround this space and look towards it. The *P-space* is the narrow strip on which people are standing while conversing and the *R-space* is the space beyond the P-space, which can be observed in Figure 1a.

F-formations are spatial patterns formed during face-to-face interactions between two or more people. Kendon proposed different spatial arrangements depending on the number of people in social interactions and the type of interaction. There are four standard F-formations, which are generally formed without any physical constraints and independent of any particular situation. They are: Vis-à-Vis, Side-by-Side, L-shape and Circular. When two people are facing each other while interacting, that is called a Vis-à-Vis formation. A Side-by-Side formation is when two people stand close to each other and face the same direction while conversing. The L-shaped formation is when two people face each other perpendicularly and are situated on the two edges of the letter ‘L’. When three or more people are conversing in a circle, the arrangement is called a Circular formation, which can be observed in Figure 1.

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![Figure 1: Kendon’s F-formations](image)

(a) Triangular  (b) Rectangular  (c) Semi-circular

**Figure 1: Kendon’s F-formations**

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![Figure 2: Constraint-based formations](image)

(a) Circular  (b) Vis-à-Vis  (c) L-shape  (d) Side-by-Side

**Figure 2: Constraint-based formations**
There are some other formations, which are constraint-based formations proposed by Marshall et al [3]. These formations are formed when the physical environment limits the interaction. These are three formations: when one person is facing two or more people while interacting, it is called Triangular Formation. Rectangular Formation is formed in board meeting rooms or at dinner tables. When three or more people are focusing on the same task while interacting with each other, the arrangement is called a Semi-circular Formation. This formation is mainly seen in front of a wall while looking at information or a work of art, which can be observed in Figure 2.

3. Research Plan

The research plan is divided into 3 phases, which are:

❖ Phase I: Finding the importance of F-formations in robotics.
❖ Phase II: Developing methods to detect F-formations with respect to robots.
❖ Phase III: Developing an approach to navigate the robots into the formations.

3.1. Phase I

In social interaction, people organize themselves in F-formations for better interaction as proposed by Kendon [2]. A better quality of interaction was observed between human and robot while socially interacting using these F-formations [4]. When telepresence robots were placed according to F-formations, the elderly people and the teleoperator enjoyed a nice quality of interaction [5] (which can be seen in Figure 3a) but we are not sure, would the teleoperator follow F-formations while teleoperating the robot and place the robot in the formations?

For this, we studied the behavior of teleoperators of mobile telepresence systems. The purpose of the work was to determine to what extent teleoperators adhere to spatial and orientational relationships known as F-formations, while remotely interacting with groups. To prove this, we have drawn 3 expectations. The expectations are:

[E1]: People teleoperating a mobile robot will respect F-formations while joining a social interaction or group.
[E2]: Teleoperators will take the time that it takes to simply approach the group to place themselves within a configuration.
[E3]: An autonomous feature is necessary to navigate the robot to join the social interaction or group.

In order to validate our expectations, a simulated environment was created with simulated characters and we conducted the experiment by inviting the participants. The simulation environment is a conference lobby where humans are having their break after the sessions. From Figure 3, we can observe the robot and the humans standing in different formations. The participants
joined the groups by teleoperating a mobile robot. The evaluation was made using different tools. On the one hand, a questionnaire was provided for participants to answer and on the other, a qualitative method was used to validate the formations made by the teleoperators. From the results obtained, we conclude that people teleoperating the mobile robot respect F-formations while joining the groups or social interactions.

From this experiment, we have also found that teleoperators take more time to place the robot in the group and there is a need for an autonomous feature to navigate the robot to join the social interactions.

3.2. Phase II

From Phase I, we have found that there is a need for autonomous features to join the groups. Developing an autonomous feature can be further divided into two phases, which are, Phase II, a method to detect F-formations and Phase III, an approach to navigate the robot into the groups or social interactions.

![Image](image.png)

Figure 3: (a) The older person is interacting in L-shape formation, while cycling (b) The robot is observing the humans interacting and the inside image shows the view from the robot's camera (c) Humans standing in different formations in the simulation environment.

Regarding developing a method to detect F-formations, many researchers have proposed different methods to solve this problem but all the strategies are developed from computer vision and machine learning communities and none of them have been implemented on robots. The problem should be approached from a functional point of view so that the developed algorithm works on a mobile robot with an egocentric camera, in real time, with low memory, less computational time and in natural scenarios. Some researchers have worked in robotics but still do not satisfy the mentioned requirements. Therefore, there is still an open question regarding the detection of F-formations in real time on a robot in a natural setting [6].

For this, we have developed a preliminary approach to detect F-formations using a Pepper robot. Further, we would propose a new method, which would take into account the present limitations and handle the uncertainties, and would also be a probability model. When a person is going to join or leave the
group, the robot should be in a position to calculate the probability for the next formation, which is going to occur and also detect multiple formations in one scene.

3.3. Phase III
In this phase, we wish to develop an algorithm to estimate the best spot in the group and move the robot automatically into the group to socially interact with people in the group.

4. Conclusion
Our work presents robotic software, which could be used by the doctors, nurses and caretakers who visit the older people from time to time. The older people could use this technology to stay in touch with their family and friends on a daily basis, which is also good for their health and decreases the risk of illness. Thus, for effective interaction, the robots need to be integrated with the presented software.
References


It should taste good, look good, feel good and be enjoyable!

Hospital meals in the hands of Culinary Arts and Meal Science

Ann-Sofie Jonsson

“(…) the perfect meal involves so much more than merely how the food on the plate tastes. As such, it suddenly becomes clear that we need to draw on a whole new range of scientific disciplines/insights in order to really understand what is going on in the diners mind in response to the all-new multisensory experiences that they find themselves exposed to”

(Spence, C & Piqueras-Fiszman, B, 2014, p. 12)

The aim of this chapter is to provide you as a reader an insight into my research area and how I plan to address it. The purpose is also to highlight hospital meals and their importance in relation to the ageing population. The chapter starts with a brief introduction about meals in hospitals and an outline for my doctoral project. You will thereafter be introduced to the objectives of my studies and a more thorough description of the research area and the frameworks that will be used to further explore older patients’ meal experiences. I will subsequently end my chapter and contribution to this book, with a discussion on the importance of hospital meals in the light of the ageing population.

A brief introduction

Food can be seen as trivial or just something that you need for survival. But food and enjoying a meal in a nice setting with people that you hold dear is something vital and important to us regardless of culture, religion or age. In times of illness one could argue that a meal may play an even more important role. To be able to fully recover and respond well to the treatment given, nutrition is of utmost importance. However, nutrition as a part of treatment is often overlooked within the hospital arena. This is something that I, and something other researchers have also identified, strongly believe needs to be valued and emphasized to a greater extent. Too recognize food as something that of course is not as important as lifesaving care but a valuable contributor to both treatment and well-being. Moreover, food as a way of providing a moment that is not about the medical treatment per se, but a way of providing a break, to be a person consuming a meal.

Older patient’s meal experiences in hospitals

I would like to start off with some quotes representing results from other researchers that can provide you as a reader with a first glimpse of the area of interest. The quotes are from older patients admitted to hospitals in Australia and the UK that express their experience of hospital meals. The quotes rep-
resent voices which relates to factors that I intend to further explore in my research project, namely the importance to see and address the patients with dignity during mealtime and to work on enhancing the meals sensory quality in the menus to hopefully enhance appetite.

“Some of the food is nice, but it’s far too much . . . Just looking at this [menu order form] puts me off the food. Reduces my appetite.” (Female, 83 years) (Hope et al., 2017, p. 9).

“The nurses don’t even see the plate. The tray gets taken away and the nurses don’t know what you’ve eaten. They don’t care if I don’t eat the food.” (Female, 92 years) (Hope et al., 2017, p. 9).

“[The food] was never close enough…and if I couldn’t reach it nobody else tried to give me it…it takes nothing for them to think about what they are doing…it takes a little time, okay to stand by them or sit by them and give them the food, but they don’t try... whether it’s [the amount of work]...or whether it’s just not taught...[or] that they don’t ...give it credence that something as simple as that could be the reason that the person in the bed isn’t eating...and if [patients] are encouraged to...eat it then they would”.
(Patient 2, stroke) (Heaven et al., 2013, p. 633)

The doctoral project
The aim of my doctoral project is to explore and discuss how the notion of hospitality (the Swedish word “värdskap”) and Sensory Science can be used as valuable perspectives to understand older patients’ meal experiences. The project is mainly qualitative which means that the voices of the older persons themselves are highlighted together with the experiences and thoughts of the staff working most closely with the patients in the care setting and when providing the meals. The project will contribute with knowledge about how the notion of hospitality and Sensory Science may affect the multisensory experience of consuming a meal when admitted to hospital.

How it will be done
To be able to tackle this overall aim I will use theories, perspectives and practical knowledge from the discipline of Culinary Arts and Meal Science. The focus will be on Sensory Science (what we experience with our senses taste, smell, vision, hearing and touch) together with the notion of hospitality.

Older patients will be approached and interviewed to be able to grasp how they experience the meeting with the staff during mealtimes. The interviews will focus on the daily meal activities on the wards. We will also use observations to be able to study how the daily work is performed by the staff during the mealtimes. The observations will concentrate on how the meals are served, the meeting between the staff and patients, how the tables are set and the overall atmosphere in the dining room. In addition, the older patients are going to participate in developing the menus, to be able to use words that
describe the food in terms of what the patients themselves express to be most suitable for that particular dish.

Since this project is part of the research school Successful Ageing, at Örebro University, my research focus is on people over the age of 65. The age limit is set due to the normative age of retirement in Sweden but also because our senses seem to decline from approximately the age of 65 onwards. The implication and choice of including this age group will be developed further below together with a discussion about the possible implications of this choice.

Hospital meals
When studying hospital meals it is important to consider our expectations. The term “hospital meal” is loaded with expectations and presumptions regarding what a meal in a hospital consists of, something that has been called “Institutional stereotyping” and may thus affect how a meal is perceived and experienced. Hospital food service systems are a broad operation with several professionals employed and the structure of the food service and the quality of food that is served depend not only on funding and incentives given but also on the knowledge inherent within the organization. Institutional meals thus need to be structured so that it provides high quality meals served by skilled employees to be able to provide healthy, nutritious food to a diverse clientele in times of need. In spite of the important role the food organization plays for patients in hospitals their work is often not emphasized enough.

Eating and sharing a meal with others is an expression of our culture, and it has been described as a social event and not merely a consumption of calories. This shows how important it is to view a meal as an event that is more than merely providing the right amount of nutrition. It has, moreover, been stated that eating together is an important part of the entire meal experience. Mealtimes are therefore a way of socializing, meeting family and friends and enjoying the food served. Studies have found that eating together in a hospital setting increased the food intake, which shows the importance of the social connection during mealtime but also the sense of “normality” in a hospital environment. Even though the average stay in somatic European hospitals is between 5–10 days (all ages), it is important to remember that nutrition is still an important part of the treatment and should not be overlooked especially since nutrition in itself may be the key to getting better.

Eating enough to stay well
One of the major concerns for the health status of the older population is malnutrition. For the elderly population, risk factors for malnutrition are multidimensional and concern both factors related to ageing itself; i.e. reduced lean body mass, changes in the oral cavity and sensory functions, but also the presence of chronic disease. Malnutrition is related to longer stays in hospital and a reduced quality of life and it has been reported that approximately two out of three patients in hospitals did not consume/eat all the food provided. The problem is seemingly, not (only) that the patients are not provided with food, but also how we are to approach the problem of the patients not
wanting to or being able to consume the food served. Lack of appetite due to disease has been stated to probably be the main cause for malnutrition in hospitals.

The prevalence of malnutrition in older patients at admission to hospital varies in the literature and the figures depend on the age group and also the measurement method that has been used. Nevertheless, a recently published hospital study in Sweden reports that 55% of the patients above 65 were identified as being at risk of malnutrition. To be able to decrease the prevalence and prevent the onset of malnutrition, there is a need for strategies that promote a positive atmosphere at mealtimes and that include the whole meal chain – from production to the serving of the food. The knowledge about our senses and how we approach and like the food presented to us thus becomes important in the task of promoting a better food intake.

**To be able to taste and smell the food**

We perceive our world through our senses (taste, smell, vision, hearing and touch) and then act upon the information that we perceive. When we consume food, all our senses are involved in identifying the sensory properties in that particular food or meal; if it tastes sweet, sour, salty or if we like or dislike the food item. Even before we place the food in our mouth the food has been judged by its appearance and smell and may influence our expectations (of that food). What we eat can be influenced by both internal (i.e. appetite, flavor perception, hunger, thirst etc.) and external (i.e. social environment, visual presentation, time of day etc.) signals. However, the interest and knowledge regarding older person’s sensory loss, as perceptions of taste and smell, is lacking.

With increasing age, illness and disease, the sensory abilities decline and the ability to taste and smell the food may not be the same as before, just as with our ability to see and hear our surroundings. How the food is presented (vision), how it tastes and smells and also how it feels are thus important to consider for the older adults. It has been argued that chemosensory (taste and smell) loss is one of the most important reasons for the development of malnutrition in the older population. However, this is an argument that has been contested. Some researchers have found that chemosensory impairment does not affect either appetite or eating pleasure, and that the role of chemosensory impairment in the development of undernutrition may be overrated. Factors that were regarded as having a significant negative impact on eating pleasure were instead; eating alone, having dietary restrictions and the *perceived* rather than the *actual* chemosensory impairment. It is important to note that this study was conducted on free-living independent adults (>65) that were reported as not having any severe medical conditions, which might have affected the outcome. Other researchers even argue that age-related changes in sensory perception have little effect on food liking. It has been suggested that this might be due to that the sensory deficits develop gradually and are therefore not noticed. However, more research is called for concerning ageing and sensory abilities in relation to liking to better meet the sensory needs and wants for the current as well as future older generations.
Culinary Arts and Meal Science

Who creates the meal? Who serves the meal? And what knowledge is required? The discipline of Culinary Arts and Meal Science is multidisciplinary and studies the meal experience (not exclusively) and how the overall experience can be understood from different perspectives (including Sensory Science and the notion of hospitality). Creating and serving meals is thus something that is not common sense; it rests on empirical as well as theoretical foundations, from how to, for example, prepare the perfect soufflé, to how one serves the soufflé with hospitableness. Therefore, it can be of importance to highlight and understand the knowledge from the “restaurant world” and how the medical- and care discourse can use this knowledge to develop the food organizations in hospitals to promote meals that are both nutritionally adequate as well as pleasant. However, the discussion has foremost focused on the increasing numbers of especially older patients, which will come into contact with hospital meals and on concerns with the provision of adequate nutritional care. The discussion of the importance to understand how to provide enjoyable meals in times when one may need it the most is however scarce.

The Five Aspect Meal Model

The Five Aspect Meal Model (FAMM) is a framework or more correctly perhaps a “tool for understanding and handling different aspects involved in and producing commercial meals offering the guests the best possible meal experience” (Gustafsson et al. 2006, p 90). The model was developed by the School of Hospitality, Culinary Arts and Meal Science and is today a model that has been identified as a valuable tool for developing and creating meals in the hospital setting. The FAMM includes; the room, the meeting (between the guest and staff but also between the guests and between the staff), the product (food and beverages) and the overall management control system (for example, but not exclusively, the laws, regulations, and the logistics of providing the meal) that together with the other three aspects result in the atmosphere. The FAMM will be used in this project as the main framework to develop the themes for the interviews and the observation protocol.

The research questions in this thesis are based on the aspects of the meeting, where the notion of hospitality will be discussed, and the product, where the menus sensory quality as well as the perceptions of the patients will be assessed. The project will also consider the aspects of the room and the atmosphere as part of the observations. The overall management control system will also be of importance since the food distribution system in hospitals (how the food is prepared and delivered to the wards) will supply the frameworks that the staff need to work with.
Sensory Science

Sensory Science is by nature multidisciplinary and includes different perspectives to be able to grasp how peoples experience and perceive with their senses. To be able to study how, for example, consumers perceive a specific product or meal, different methods can be used depending on the purpose of the test. Analytical sensory methods should be used if the purpose is to describe and measure the sensory characteristics of a product and the assessment is made by a trained panel. The other group of sensory methods is affective methods that concerns liking and preferences of products, and the approach is more directed towards qualitative methods. We will use affective methods in our project to elicit the older patients’ liking and how they themselves describe the food they have just eaten. Sensory Science is thus used to explain the older person’s meal experience by assessing all the senses that are active in the meal experience, i.e. how the food is presented on the menu (vision) and how the meal is served (vision, hearing, touch, taste and smell).

Hospitality

The notion of hospitality and its applicability to mealtimes in hospitals has been acknowledged albeit not studied to any great extent. There are several definitions of hospitality, one of them has been suggested by Brotherton (in Lashley & Morrison, 2000, p 142); “…a contemporaneous human exchange, which is voluntarily entered into and designed to enhance the mutual well-being of the parties concerned through the provision of accommodation, and/or food, and/or drink”. In a hospital environment, the guest is a patient, who is, arguably, not there voluntarily, and the host (the nurses or other medical staff) are not primarily there to provide, food, drinks or accommodation. The use of hospitality in hospitals thus need further exploration to be able to be applied to a setting where the notion of being hospitable may be of more importance than in a commercial restaurant or in the privacy of our own homes. The notion of hospitality will therefore be used as a framework; from how the meal is served by the staff to how the menu is designed, to explain the social interactions and implications this may have on the meal experience.

Culinary Arts and Meal Science in relation to successful ageing

In my doctoral project, the framework of successful ageing will be discussed in terms of viewing the older population as capable and active in their own care (as much as possible and wished for) and the sensory abilities that may (but often will) decline, as something that can be manageable, to some extent, through better communication and presentation of the food. In order to be able to include the ageing perspective in my doctoral project, I have leaned towards a theory that emphasizes diversity, dignity and harmony in relation to ageing.
The theory of harmonious ageing

The theory of harmonious ageing takes its stand in a critical discussion towards the successful ageing framework and proposes a new framework called harmonious ageing. The theory is based on the Yin-Yang philosophy that promotes diversity and differences, and therefore may “heal the integrity of body and mind, and emphasize the interdependent nature of human beings” (Liang & Lou, 2012, p 327).

The theory of harmonious ageing emphasizes cultural diversity, a focus on body and mind, and social relationships together with a view of growing old as something that is experienced differently and where these differences should be valued. The researchers behind the theory discuss that the framework of successful ageing can be argued to be embedded in a “belief of staying young and active” as being “the key to a good old age” (Liang & Lou, 2012, p 328) and that the framework promotes agelessness and thereby overlooks the body’s changes and fails to acknowledge the uniqueness of old age.

The framework is therefore of interest to my research and to be applied to the perspectives of the older person’s experiences of meals served in a hospital setting. Also how, with the theory as a guide, may introduce a novel approach to understanding the individuals’ experience of mealtimes. Both harmonious ageing as well as the discipline of Culinary Arts and Meal Science share common terms and views. Such as the importance of providing dignity, harmony and balance, and that every individual is unique. To be able to provide a good meal, the sensory properties on the plate needs to be in balance (something that has been named the six culinary success factors) with each other but also with the environment. The meal is thus experienced in a multisensory way that needs to behold that every guest is somewhat unique. It can therefore be argued that the chronological age per se is not of the greatest importance in my research. However, since it has been found that sensory function decreases after the age of 65, it could be argued that the inclusion of those below 65 in my research would not answer the purpose of the study. Nevertheless, the experience and voices of older persons, are of utmost importance in the project. Especially since we are not measuring the actual sensory losses in these patients but rather asking about their perceived sense of taste and smell together with their overall liking of the meals and the hospitableness of the staff.

A way forward

To summarize, we need more knowledge about how hospitals can strive for better food service that create positive meal experiences for the patients, not just to reduce the rates of malnutrition, but also to create an ambiance surrounding the meals that may influence a more positive food intake. One way may be to highlight hospitality approaches in combination with knowledge about sensory abilities and how that may affect the overall meal experience. Therefore, the project hopes to provide new knowledge that goes beyond the product in enhancing meals that delivers more than is expected.
References


Elderly people with dementia and assistive technologies, can there be a perfect match?

Antonios Tsertsidis

**Introduction**

One of the challenges faced by society today is the demographic shift which entails that people live longer and healthier lives than in the past. With this demographic shift, we can also see a rise in the number of elderly people who have cognitive disabilities (mainly Alzheimer’s or dementia). The four most common subtypes of dementia in order of frequency are Alzheimer’s disease, vascular dementia, dementia with Lewy bodies, and frontotemporal dementia. Each type of dementia comes with its own symptoms. Some symptoms may be psychological and more difficult to deal with while others may be milder so that the individual (elderly person) is still able to live on his/her own with little additional help. From another point of view, you might also say that the differences in types of dementia may affect the decision regarding the sort of technology that could be used in order to assist the elderly person. Today, there is little knowledge about how this group of people views assistive technologies and this is the gap that my research targets. It is also important to mention that this research targets people who are over 65. This was a decision which was made after reviewing reports from Socialstyrelsen (The
National Board of Health and Welfare) regarding the prevalence of memory disorders.

Only one out of ten people in need of assistive technology has access to it because of the high costs and lack of awareness, availability, trained personnel, policy and funding. Funding is a problem that often arises, and more so bearing in mind that the elderly population is on the rise. In Sweden, approximately every fifth person has a disability, and about half of these individuals use assistive technologies. This paper is structured as follows. The section below is an introduction to another term for assistive technologies, which is used in the Nordic countries. Following that I present how welfare technology and my research group relate to each other and subsequently move on to explain some of the issues faced in dementia research. Lastly, I highlight the lack of theories used in ICT research when it comes to dementia and draw my conclusions including a brief/short description of the aims of this PhD topic.

**Welfare technology**

In the Nordic countries, the term assistive technology is not in such widespread use as it is in the rest of Europe. Instead, they prefer to use the term welfare technology (välfärdsteknologi). This is because these two words combined, welfare and technology, makes sense in the welfare society of the Nordic countries. More explicitly, you could say that welfare technology is...
Successful ageing in an interdisciplinary context

the technology used to improve the services provided by the welfare state (the
government) and make them more efficient. Today, welfare technology can
be described in many different ways. In Sweden, this is a slightly more recent
term and not as widely recognized as it is in, for example, Denmark. For that
reason, I believe that the description provided by the Danish Centre for Assis-
tive Technology can be used as an excellent starting point in order to gain an
understanding of the meaning behind the term: Welfare technology includes
technical solutions that are used by citizens in receipt of special welfare ser-
ves and either compensate for or support a disability. Welfare technology
also includes technological solutions that are mainly used by and support the
staff who deliver or carry out welfare services. Welfare technology can take
the form of dedicated assistive devices, consumer goods, home adaptation
solutions, educational equipment, tools, etc., and is mainly defined in relation
to them by its twin focus. Welfare technology solutions have both an
individual and a social perspective.

Why should there be investments in the development of welfare technolo-
gy? Some important answers to that question would be that welfare technolo-
gies might (1) enable people to be more independent, (2) use human resources
more efficiently, (3) make it possible to perform manual or heavy work us-
ing technical solutions instead of staff and lastly (4) help to prevent and re-
duce the effects of chronic diseases and age-related complaints. Particularly
in Sweden, the Ministry of Health and Social Affairs has drawn up a report
called Care is the Brighter Future ("Den ljusande framtid är vård"). In or-
der to meet the ever-greater challenge of a growing elderly population, the
report suggests an increase in the use of technology to ensure the continued
provision of good nursing and care. Between 2010 and 2012, the government
allocated 66 million SEK for the development of technological solutions for
elderly people in the “Technology for the Elderly” programme, which was
run by the Swedish Institute for Assistive Technology. Additionally, research
into welfare technologies is also conducted by several Swedish universities
and colleges, often in collaboration with regional initiatives or as part of a
European project in the field. Another reason for investing in welfare technol-
ogies is the shortage of labour in the public sector, combined with the difficul-
ty of motivating and retaining staff. While the elderly population increases,
the number of staff taking care of them will either decrease or remain at the
same level, which means that there will not be enough people to take care of
the elderly in the future and this is where welfare technologies enter into the
equation. An increase in healthcare costs and a shortage of trained healthcare
workers have led the European Union to invest millions of euros in innovative
technologies for healthcare such as robotic projects as well as innovations for
living well in old age.

Welfare technology and elderly people with dementia in Sweden

According to an interview which was conducted at Örebro Demenscentrum,
welfare/assistive technologies for elderly people with dementia are still not
widely used due to a number of challenges. It is difficult for people to come to
terms with using them because different generations have a varied knowledge regarding the use of a computer or its more “advanced” functions. It is not always easy to get these people to use new technology and expect it to work, even with the proper training. Learning to use something new is no easy task. Try to imagine being introduced to a robot which could possibly replace the person taking care of you. Depending on the individual, this thought can be either terrifying or fun. Another problem faced when using these technologies is that most of the time the person with dementia cannot handle the technology on his/her own so there is a need for a relative or a personal assistant to help him/her to use the technology. The most common type of welfare/assistive technologies used is devices that help the elderly plan their time (e.g., calendars and day planners), which seems to be one of the areas that is most difficult for elderly people with dementia.

The exclusion of real voices from ICT research

I have partially investigated the research that has been conducted so far on elderly people with dementia and information and communication technologies (ICTs). What came to light was that elderly people with dementia, even though they were included in ICT studies, in most of the cases, the data collection occurred mostly through observations which could be interpreted in a number of ways by the researchers who conducted the research or by conducting interviews with staff working with the elderly or their close relatives. As sound as that may be, it is also very important to note and highlight that the real voices of elderly people with dementia were not really heard. There have been some controversies regarding the fact that people with dementia are often “muted” or remain “a silent and excluded voice”, something which unfortunately my review also showed. It seems that observations as a means of data collection is the safest option when conducting research on elderly people with dementia, and as Moore & Hollet mention, social research tends to marginalize their experiences, focusing instead on the views of caregivers, or their own through “proxy” informants. Another issue dementia research is faced with is the need to obtain ethical approval. Sometimes, due to ethical issues, research has been either stopped or access to people with dementia has been declined, which is why acquiring ethical approval is of the utmost importance. Having elderly people with dementia as my research group is interesting because research has shown that even though this group has been researched, their true voices are still not being heard and the use of proxy informants such as caregivers and family members still prevails. As regards the interview I conducted at an early stage, I was informed that the majority of elderly people with dementia are able to participate in interviews except maybe those who are at a terminal stage. This statement heavily contradicted what was found in the review since most of the elderly people included in the studies were at the early-mild stages of dementia but still their voices were not being heard. My grandmother suffers from Alzheimer’s and I would hate to see her excluded from research or have someone else do the talking for her when, in my view, she is still perfectly capable of expressing her thoughts. If
the research is about something that might benefit her, why would she not have the right to let her voice be heard?

**A Lack of Theories**

Another issue, which has arisen from my research on ICT and elderly people with dementia so far, is that there is a slight problem regarding the use of theories in research. Most of the research conducted in the field of ICT and elderly people with dementia seems to follow an empirical trail, meaning that the research questions are being answered by specific questions provided by the researcher instead of guiding the research with a framework or a theory. Research on ICT and the elderly usually focuses on the technology but not on the elderly and their characteristics. It can be said that elderly people with dementia are viewed as a homogenous group by researchers even though they are not, and each individual clearly has different views, opinions and life experiences which in the end affect their decisions.

**Conclusions**

What we wish to achieve, is to gather the voices of different actors such as caregivers, family members and of course elderly people with dementia and see what needs to be done in order to increase the acceptability of welfare/assistive technologies. The target group is ultimately elderly people with dementia who are going to benefit from the use of the welfare/assistive technologies, but we still need the voices of their caregivers or family members to have an all-inclusive point of view. My goal is to identify the current mindset regarding welfare/assistive technologies in terms of how they are being viewed by elderly people with dementia and subsequently investigate what factors influence the use (or non-use) of these technologies by elderly people with dementia, and lastly, come up with suggestions for improvements to encourage the elderly to have the technology in their lives. In short, what needs to be taken into consideration when designing assistive technologies for elderly people with dementia. Let us make technology a product that is no longer feared by people.
References


A Dignity Care Intervention – for dignity conserving care for older persons’ with palliative care needs

Annika Söderman

Do we need our Dignity?

None of us wishes to die, but all of us would like to die with dignity. Apart from this I guess that we would all like to live with dignity throughout our lives: from our younger years to our very final day. That is why health care and palliative care also need to focus on living. In older age it is important to live a decent life with your dignity maintained even when life is challenged with an illness or other difficulties. Naturally, we all would like our final years to feel meaningful and memorable. But what is required to achieve this?

This chapter will describe dignity and dignity care for older persons (in the third and fourth age), in relation to successful aging and person-centered care, guided by the theories of Locus of Control and Consumer-Directed Theory of Empowerment, and the Dignity Model. At the end, an intervention for Dignity will be described. The target group for this chapter will be older persons, with or without an illness, but still in need of palliative care, as the role of palliative care has increased and expanded in recent years to also include older persons in care facilities for the elderly. For these persons there is a great deal that can be done to help them live their lives ensuring a good quality of life and with their dignity intact.

Dignity, a part of the process of successful aging

A part of the process of achieving successful aging is maintaining our dignity. One relevant description of dignity, (of many) was made by the philosopher Linda Barclay. According to her, the respectful treatment of a person’s dignity is about respecting that person’s capacity to preserve his or her individual standards and values. This is one way to avoid humiliation. Further, her view is that it is crucial to respect the person’s equal status and capability to realize his or her wishes regarding his or her principles and ideals. In addition, the Word Health Organization (WHO) has described successful aging as an optimizing process were a person’s life may be improved in relation to health, social life and safety while aging. But what does this mean, when you are an older person with palliative care needs? Later on in the text I will explain how dignity can be maintained with dignity conserving care as a part of successful aging. In a previous concept analysis of dignity performed by Professor Jacelon and colleagues, it has been suggested that this essential value is important for successful aging. Research has shown that the loss of dignity may at worst enhance depression, a sense of hopelessness and even a wish for a hastened death. Wounded dignity may be demoralizing for how we view and value ourselves. The Swedish researcher Lennart Nordenfelt declared that a person who loses his or her dignity may experience total despair. This is not a good place to be, for any of us. However, we have to be aware of the fact that there can be different degrees to our feelings of indignity. A great deal can be
done to avoid this state. Research conducted by Professor Gallagher and colleagues, indicates that 50% of older persons cared for in the home, feel that their dignity has been wounded, while another study by Professor Chochinov and colleagues, reports that 6% of frail old persons’ have experienced a loss of dignity. Further, earlier research has shown that dignity-related distress is the same for cancer patients and older persons, which supports the idea that the care pathway towards death can be similar for these two groups. This may be helpful while planning care.

The description above may serve as the relevant answer to why dignity is important, and therefore I argue that dignity must be a part of successful aging.

The term successful aging has been used in various ways but I choose to see the concept as a process. The process of successful aging in this text focuses on the life span perspective of the final years of life of an older person when he or she may suffer the challenge of morbidities and losses of different kinds that may affect the feeling of dignity. It is important to be aware of the fact that the concept of successful aging has been criticized for being too focused on the presence of disease in a person’s life and to only include a small exclusive group of people. This view is no good when meeting older persons’ with palliative care needs which is the target population of the current text. Therefore, I would like you to broaden your horizons and to go one step further. For this is something we can do for them, our parents and grandparents, it does not require very much of us. We need to focus more on social situations and on who the person really is, all while helping them in the process of successful aging. In addition, in order to enhance the dignity of older persons, it is really important to ask the question: Who is the person behind the illness? It is essential to, try to look behind everything that obscures the view. Theories and models may be of help here. An important standpoint for older persons as a target group is that successful aging is part of a psychological process where the person navigates through life, develops strategies and makes choices to compensate for losses in life. Strategies for maintaining dignity is a large part of this. The successful aging concept must involve the opportunity to develop new roles, to see the power of older person’s knowledge and experiences. Further, we have to see the concept of successful aging as multidimensional, and as a process of adaptation where resilience in the older person may be underpinned by good palliative care, helping the older person to deal with an illness or difficult symptoms. Self-rating may be a helpful and necessary part of this, since a person may still rate him or herself as aging successfully despite an illness. This is important for all researchers and health care providers to bear in mind – which is why, the voice of the older person must be heard. As dignity forms a part of successful aging, a part of providing dignity conserving care is to give older persons’ the opportunity to rate their dignity and to express their needs to uphold it. For this, the Dignity Care Intervention, developed by Professor Johnston and colleagues may be helpful, and I will explain more about it later.
The perception of an older person’s beliefs and wishes may help the providers of palliative care to offer person-centered care. This type of care may be a pathway of providing good quality palliative care where dignity can be preserved. Thus, below we will review the concept of person-centered care (PC) or consumer-directed care (CD) as it is also called.

Figure 1. Successful aging is a process, and one piece of this puzzle is dignity care guided by person-centered care, two central theories and the Dignity Model.

Figure 1. Successful aging is a process, and one piece of this puzzle is dignity care guided by person-centered care, two central theories and the Dignity Model.
Person-centered care – a way to see a certain star among the stars

Person-centered care has been described as useful when implementing strategies for older persons, and one of the principles this type of care is guided by, is dignity. What is meant by this is that dignity is an important core value for PC. There has been a paradigm shift in the care provided to old persons from a medical technical view to a more person-centered view, in the last 20–25 years. This approach emphasizes that care should be based on the person, and the consideration of what is most important for the individual. What has also become more central is the focus on the outcome of the care that is provided instead of only looking at how the care is provided. This means that the health care providers need to take the whole person into consideration when providing PC, including all the personal dimensions of an older person. We must all be aware of the fact, that even though people today live longer, the final years of our lives are also hampered by chronic diseases, which complicate our life situation. This requires thoughtful well-developed care, and PC is one solution. In addition, 70% of people over 65 will need long-term care during their lifetime, which is a lot of people, and it is likely that one day we ourselves will become one of these people. We must also bear in mind that we all have our peculiarities that we wish to be respected for, even when we need care. The old medical view that has dominated the care of older persons contributes to a loss of power for the individual, – which is something that should motivate us to concentrate more on PC. This rather new PC paradigm and its components (self-determination and control over decisions) has been seen as a human right. Dignity, one of several core elements of PC, has also been described as a human right. Therefore, coordinated systems with practice initiatives like for example, the Dignity Care Intervention (explained later) are needed to respond to the needs of older persons’. One positive aspect, is that health care aimed at the consumer has been described as having the potential to improve health care. But old persons cannot transform health care on their own. Researchers and the providers of care must tailor support and let the old person participate in the planning of care, which may subsequently lead to more PC. The view that one type of care fits all, is an idea that we, both care providers and researchers, have to discard now. It is really high time we do so! We have to build up and develop systems that can help older persons obtain valuable information to help them make good decisions and systems that pay careful attention to core values, like for example, dignity. This will give better outcomes in health care and palliative care, which means older persons, will become more satisfied. Today, there is a strong need for more research on care pathways and the development of practical solutions in palliative care. Testing and implementing the Dignity Care Intervention could be one step along the road to achieving a more targeted approach that may lead to a better quality of care. For this to happen, the culture within health-care also needs to change. Older persons must be regarded as companions. A nurse in a palliative care setting has an important role to play here, because he or she meets the older persons in need of care. Further, for the nurse to be person-centered, he or she requires the therapeutic narrative approach that
may emerge between the nurse and the older person. This approach must be based on trust and understanding as well as shared knowledge. In addition, this therapeutic approach needs to be underpinned by the individual person’s values and how he or she makes sense of his or her situation. Health means different things to different people which is why one type of intervention may not suit all of us, and why tailoring care is crucial. In addition, the values of nurses’ contribute to the process of shaping PC. For example, it may provide the older person with an alternative view which is, helpful when considering care options. Furthermore, the care environment plays a significant role when providing PC, because it has the opportunity to facilitate or limit the person-centeredness in the care provided. Nurses must, however, relate to the organization they are working for and balance competing values since, developing PC is not an easy task. We have to be aware of that. It cannot be achieved by using point actions, it requires more. Care providers and researchers have to work across the board. PC is underpinned by several traditional care theories where the practical care is founded on theoretical perspectives. In the PC approach, the process is an important part. But what does this process entail? Well, the nurse, for example, or any other health care provider needs to work on a daily basis with the beliefs and values of the older person (as stated earlier) and needs to be involved and present. Moreover, one important measure is to create a partnership with the older person where decision-making can be shared. As mentioned above, a psychological process is part of successful aging. Everything is connected. This is how we need to look at it, – as a process. In that process it is important for the old person to be respected, seen and acknowledged as being the person he or she is. Some theories may guide health-care providers in the process of making PC possible. These are the theories of Locus of Control and the Consumer-Directed Theory of Empowerment. I will explain them briefly now, as well as the Dignity Model.

A guiding lantern may light up the care pathway
Remember the question in the title at the very beginning of this text. Do we need our dignity? I think we do, just imagine how we would feel without our dignity. A little guidance may be required while PC is provided to help maintain dignity in older persons. One guide might be the Consumer-Directed Theory of Empowerment which upholds the mechanism where individuals develop their own skills to take control over their own lives. Further, this theory highlights that the more an individual is consumer directed the stronger the ties the person has to his or her community, and the more able he or she is to create important relationships. The theory was developed by Professor Kosciulek and involves informed consumers that are seen as experts of their needs, which must have access to information that helps them make choices regarding their different options. In addition, the person needs control over policies and practices that have an impact on that person’s life. This process enhances the person’s sense of power and may therefore improve the person’s quality of life. The theory was first developed for disability policy and rehabilitation services but may still be applied in other groups and care contexts.
For example, in the group of older persons’ with palliative care needs. We must see these persons as being competent, and if illness or frailty makes them powerless, researchers and care providers have to address interventions that distribute power more equally and provide them with opportunities to act for themselves. Empowerment involves internal, psychological, and social aspects. Moreover, a person’s situation has to be taken into account. Empowerment includes factors like a sense of control, obligations, participation and an orientation for the future. A person will be empowered if he or she has control over his or her own personal resources, or over more organizational resources, helping the person to manage in the daily life. In the field of gerontology, as regards older persons’ with palliative care needs, the empowerment process must be seen as enhancing dignity as part of successful aging. The older population is increasing and future generations will not accept to not be involved in care decisions. Safety will not be enough for the next generation of older persons. Essential to the care of tomorrow will be increasing choice in daily routines and living arrangements. Another way of empowering older persons is to help them review their life with a focus on the experiences they have encountered. This may improve their emotional health and wellbeing. Making life reviews is well-known knowledge within the palliative care context. Therefore, interventions that support communication in care may be useful in this care context. I think this may enhance dignity in persons, too. But now let me describe in greater detail the other theory that may facilitate PC, the Locus of Control Theory.

This theory lies close to the afore-mentioned described Consumer-Directed Theory of Empowerment. You could say that they go hand in hand by focusing on person-centered-ness. Health Locus of Control may help an individual person to enhance health self-efficacy. This is a psychological theory which may help predict a person’s wellbeing and also the effectiveness of PC. If the person experiences control together with social support, the competence and health of that person may be improved. Hence, social support is an essential part of this theory as it may facilitate more optimal outcomes for a person later in life. These two important components may help an individual to find the resilience required to manage and adapt to his or her situation, for example, when a person becomes severely ill towards the end of the life. However, it is important to know, that increasing the social network of an older person – cannot alone create these beneficial ties. The person also has to feel a sense of control over the social relationships. Thus, in order to shape a successful aging process it is not just enough to help the older person to remain in and belong to a social context. Health care providers need to work with optimizing the person’s relationships as well. It may also be necessary to challenge the way older persons today are met and taken care of in residential homes as well as when they receive care in the home, to help the older person maintain a sense of control. A more permissive environment, where these persons’ can have a greater impact on their daily activities could be one way to achieve this. Presumably, we have to challenge old organizational patterns to succeed. Internal Locus of Control has been found to give older persons a
more positive perception and attitude towards their health. But older persons’ often suffer from chronic illnesses that make them prone to negative perceptions about their health. Therefore, interventions focusing on giving the older population a sense of control may be beneficial and help increase their well-being. It must also be said that a person’s Internal Health Locus of Control is something worth working for because it has the possibility to change a person’s life situation for the better, unlike personality characteristics which are more steady and unchanging. Predictors of Health Locus of Control in older persons’ have been shown to be demographic factors (for example, gender and level of education). Men often report greater Health Locus of Control than women. Education is associated with a greater Health Locus of Control. In addition, psychological and health factors may have an impact, but if the older person has strong and helpful people around him or her, this might compensate the person’s declined health. This may still help the older person maintain a sense of control. Health-care providers can play an important role here. I do not know what you are thinking right now, but the role of Health Locus of Control in older persons’ seem to be relevant for their health. Using the two described theories above as a guiding light, makes me think that they can help care providers and researchers to improve the quality of care for older persons and help them amend the process of successful aging and maintain their individual dignity. From now on I will focus more on dignity-conserving care.

An added guide for the care pathway may be the Dignity Model developed by Professor Chochinov and colleagues. By viewing the Dignity Model below, it can help us understand that conserving a person’s dignity is much more complex than it would seem at first glance. This model was developed from interviews with patients with a terminal illness, and it constitutes a therapeutic map helpful in clinical work regarding finding solutions to individual situations, for example, for older persons’ with palliative care needs. It is possible to grasp, by viewing the model that dignity, as well as indignity, springs from many sources (themes). There are many aspects to consider but the major categories are Illness Related Concerns, Dignity Conserving Repertoire and Social Dignity Inventory. Hence, the question of why dignity is important is a complex one to answer. You have to reach within and ask yourself what is important to maintain your dignity. And as a care provider or researcher, you have to go to the persons’ needing care and ask them: what is important to you? Which brings us back to the person-centered-ness, remind us that it is important to underpin the care that is provided with information about who the individual person is, and what his or her wishes are. Maybe for one person the care tenor is the most important thing to consider, but for another person it may be more important to work with death anxiety to uphold the person’s dignity. The model can help us understand how people with a terminal illness or who are frail face their situation, and how to promote the person’s wellbeing and quality of life later on in life or close to the end of life with the relevant care actions. By using the Dignity Model health-care providers may be strengthened to give dignity-conserving care, because it targets
the upholding of a person’s dignity. While it was developed in the palliative care setting, it is easy to understand that it can be helpful for health-care providers providing care to old persons. Dignity-conserving care with its therapeutic approach has the opportunity to enhance wellbeing of persons’ who need care, their families and care providers equally. But what defines dignity for each person is unique so tailored interventions are needed, as explained earlier.

![Figure 2. The Dignity Model (Chochoinov, 2002).](image)

Further, as old age sadly has been shown to be a risk indicator for poor end of life care, – the Dignity Model may confidently underpin a better quality in the care provided. Let me now describe the Dignity Care Intervention, as it is based on the Dignity Model.

**The Dignity Care Intervention – one piece of the puzzle of successful aging**

The Dignity Care Intervention [DCI] developed by Professor Johnston and colleagues in Scotland may be an important contribution to palliative care, and while caring for older people. Older persons’ with different morbidities are the largest group who need to be cared for in general palliative care often provided in the municipalities. Interventions are needed to maintain a good quality of care, whether the person is still cared for at home or in residential care. Interventions that promote the person’s own choice and takes who the person is into account are essential. If you or someone near you, ever becomes
seriously ill, I think it will be important for you to meet health-care providers who can help you feel as good as possible, and someone who remembers important core values like dignity to uphold your wellbeing. In such a situation, it is, for example, valuable to meet a nurse who can meet you in a proper respectful way, who knows what you need, to provide you with dignified care. Care that will not only keep you safe but also help you to sustain your own person as far as possible. In such a situation, you certainly do not wish to be met in an undignified way, because you are already in a difficult situation. Of course, most care providers would like to provide good relevant care, but today I would argue that all health-care providers do not always have the right conditions to do what they know is best for their patients. Therefore, we need standardized care. The DCI provides nurses along with their health care team opportunities to offer dignity-conserving care with care actions based on evidence. It has been translated and adapted to the Swedish context by the team of DCI-SWE and provides nurses with a communication and care support that allows nurses to ask the relevant questions that are needed for health-care providers to be able to understand you as a person and to preserve your dignity in a difficult situation. DCI may therefore also facilitate the possibility for nurses to provide PC. The intervention consists of an instrument with questions related to dignity, and reflective more open questions to deepen the knowledge of the person. Further, it consists of helpful proposed care actions that the nurse can discuss with the older person to find the best way to help him or her. In this way, DCI may be a tool to help the older person gain greater control over his or her complex situation as well as empower them by allowing them to become an involved figure in the care planning process. This may help a person in later life, as well as at the end of life, making it easier to receive what he or she needs without it consuming too much energy because care is supported and can be more focused by the intervention. It may help the older person to save energy for more useful activities like, for example, concentrating on creating memorable moments with family and friends. DCI has recently been tested in a feasibility study in one municipality in Sweden.

Before concluding this chapter, I would like to end by saying that research is needed to meet the challenges of the future regarding care, as well as regarding a more modern clinical practice, where communication with older persons’ with palliative care needs must be prioritized. This will be a strong part of continuing the development of palliative care so that older persons can be helped with the process of successful aging. To achieve this, the application of PC needs to be in focus and core values like dignity need to be considered, otherwise the provision of high quality care is in doubt. Finally, we really need to maintain our dignity.
References


Is age more than a number?

Bettina Widell

The demographic situation of age and work

Would you give the same answer to the two questions What is your age? and How old are you? Most people would answer both questions with the number of years that has passed since their birth, but there is a broader way of understanding age and ageing for humans in society.

As a geographer I am concerned with how people and their activities are dispersed and constituted in different geographical areas. My research focuses on the senior working population in different geographical settings and the aim is to analyze the patterns that appear in urban and rural localities and to explain the reasons why these patterns appear. One of the research questions concerns what distinguishes the working life of seniors from the working life of the rest of the population. Do the preconditions for being active workers differ between different groups or environments and in what way is age of importance when it comes to work life participation?

The changing demographic situation with a greater share of the total population over the age of 65 requires, for national and regional economic reasons, more people to continue working past what today is the normative retirement age. The ageing population is unevenly geographically distributed and urban populations are in general younger while rural populations have a greater share of older people. The aim of recent political agreements on raising the ages in the retirement system in Sweden is to ensure that the working senior population in all settings remains in the labor market longer than previous generations. While my research has a geographical take on this issue, this text is more general in the sense that it aims to elaborate on the concepts of age and work, and also to problematize the relationship between these main concepts with a special focus on working seniors.

Age and work

Age and work has historically been intertwined and when the first statistical institution was founded in Sweden in 1749, it soon started to measure the productivity of different age groups. At the end of the eighteenth century, children under 6 and adults over 80 were graded as dependent on others for their survival. Children between 6 and 15 and adults between 65 and 80 were seen as capable of earning their own living but not more than that. The remaining group of the population, 16 to 65-year olds, made their own living as well as a surplus that could be used to care for others. In conclusion, the population was linked to a certain expected productivity based on age (or age group). Since then there have been some changes in the structure of society (for instance demographically and institutionally) but the productivity of the population is still a central issue. Today, Statistics Sweden measures work and labor activities the ages 15–74.

The example above is one way of classifying people based on age criteria which is common when studying people and their activities, but often the age
categories are narrower than the ones given above. In my research on individuals that are active workers after the age of 65, the age group of interest is the 65 to 75-year olds. I have selected this age group because when studying extended working life it is necessary to define from what point the extension starts. Since 65 is the current normative retirement age in Sweden, all people who continue working after the age of 65 will count as participants in the extended working life. The upper age limit in the group is chosen partly because the employment rate above the age of 75 is fairly low and partly because of the availability of data.

While studying a specific age group, it is possible to make general descriptions and comparisons between this group and other age groups when it comes to labor market behavior and representation. It is also possible to look inwards and study differences within the group from other perspectives than age to see variations in behavioral patterns based on gender, socioeconomic positions, ethnicity, working life background and geography. In my studies, a geographical analysis of statistical data is made to find out in what way geography may impact the working life participation of individuals of different ages.

A more qualitative way of handling age in research is to ask critical questions regarding why and how age matters or does not matter in the specific research situation. Reflecting on age as a relevant variable or not in the analysis of social phenomena is also a way of taking on the age perspective. Considering the social phenomenon of working past your retirement, the following age-related questions could be posed:

- Does everyone in a defined age group experience age the same way?
- Does how others treat you (fellow human beings or institutions) vary with age? In what way?
- What kind of restrictions (or possibilities) do people meet related to their age?
- Are those restrictions (or possibilities) related to rules and regulations, social norms, or to their own capacity?

Answering these questions requires different methods which target both an individual as well as a social perspective on age and ageing.

**Work from an individual or a societal perspective**

When discussing work and what work means to people in societies, and for societies in general, there is also a need for both an individual perspective as well as a societal one. Work could, on the one hand, be seen as something the individual does to fulfill a certain goal. That goal could differ within the population but usual goals are: to receive a paycheck, to pursue a career, to do something meaningful or to fulfill a need or a dream. Work could also, on the other hand, be seen as a societal project where companies aim to produce high quality goods or services for the market and to make a profit. And from
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an even broader societal perspective, the aim of work is to boost the employment of the population with an overall goal of full employment. The different actors meet in the labor market and since their aims and goals are diverse there is not always a match between what an individual has in mind and what society can offer.

Age perspectives
Inspired by Nilsson (2017), I will now provide some different perspectives on age followed by a discussion on how different age perspectives could affect the working situation for individuals active in an extended working life.

❖ **Chronological age** describes the number of years that has passed since birth. This dimension of age is often used as an organizing principle in institutions in society, for example, as regards age limits that regulate education and working life, such as school attendance and pension rules. Other examples are entrance fees (which are often also linked to a supposed level of income) or when using age in statistics and sometimes research. The importance of chronological age for social structures differs between cultures and societies in the world. Chronological age is the most objective way to consider age while the following perspectives are slightly more subjective or social.

❖ **Social age** is based on the collective understanding that life consists of different stages and that certain activities and attributes are connected to certain stages in life. The individual is subsequently expected to behave in a way that is suitable for their present stage in life. This view is changeable over time and space which means that a certain behavior that is considered “normal” in a specific geographical setting might not be so in another place or in the same place at a different point in time. Typical activities that constitute the different stages of life could be education, work and retirement. When you perform these activities in your life is regulated both with age limits and by social norms. The transition between the stages is no longer as fixed as it used to be and today it is possible to go back to school after entering working life and even to return to working life after retirement. Research shows, however, that it is essential for your individual health to be able to choose when the transition between these stages in life should occur.

❖ **Biological age** is connected to the body and the body functions of the individual. These are affected both by the genetics that you inherit and by different things that occur during your lifetime. One factor that could affect your biological age is situations at the workplace where an individual is exposed to heavy work that wears out the body. Bodies and body functions also change during your lifespan due to the biological ageing process. There are common states in this process but the ageing process of the body is also individual.
The mental age of an individual relates to the state of the cognitive functions, namely the functions in the brain that are essential for thinking, learning, remembering, interpreting and so on. Basically, this is about how we receive and process information and what amount and difficulty of information we are able to handle and at what speed. Just like body functions, mental functions change during your lifespan both individually and at group level.

Age perspectives and an extended working life

How do these aspects of age affect the possibilities and the choice to continue working after 65? To connect the four dimensions of age to an extended working life and to problematize the age concept as a whole, I will also draw on the initial example where the population is divided into age groups depending on their expected work productivity. This kind of division of working life is also used today, both in legal systems and in the cultural norm system.

Currently, in Sweden, there are changes in the regulations that also aim to change overall behavior in a direction towards a longer working life. Both the minimum retirement age and the upper age limit in the Employment Protection Act will be raised. This will essentially mean that the population will be both forced and allowed to work later in life. Raising the age limits based on chronological age may in time lead to changing norms about when it is suitable to retire and thereby also contribute to a changed social age.

These kinds of institutional changes in society are based on the argument that age groups or cohorts are entities with similar attributes based on chronological age. By structuring a system based on these premises, the age limits in different systems might interfere with the more complex situation of the individual which includes all four dimensions of age. Work capacity differs between individuals in the same age group and functionality is also related to a working situation and the work environment. Not everyone in the same age group works with the same tasks in the same working conditions. In conclusion: the system that values work capacity (or productivity) based on chronological age will necessarily form auxiliary systems for those who do not fit in the norm that the overall system describes.

When structuring a society according to the assumed productivity of the population based on chronological age, situations will arise where, due to the heterogeneity of the population, individuals do not fit into the system. Examples of restrictions that could appear in the sphere of the workplace when considering age as a broader concept is when the biological age of an individual hampers the continuation of working life at any age. Another restriction is when the regulations prevent employees from continuing to work because they reach a certain age even if the working individual has the ambition to continue working and the capacity to do so. Yet another restriction is when age stereotypes affect the possibility to perform certain activities at certain ages, for example, when older people either are not employed due to their age or when they find that they need to change their looks (e.g., dye their hair) to
look younger to be able to get or keep a job. These are some examples of restrictions that affect the life paths of the working population that are linked to age and ageing.

**Does chronological age really tell us anything?**

The consequence of using chronological age as a measure when determining age limits will also be that the transition between considering an individual as capable of performing work or not will change quite radically from one day to the next. This of course applies for all age limits, that it is the age turnover instead of intrinsic capacity that determines when an event is suitable or illegal. In the case of the retirement age, research shows two counterparts within the senior working population. The first are those who regard retirement as a right that they have earned after having completed a long working life, and on the other hand, you have those who regard an infinite working life as a right because they consider themselves productive and wish to contribute by working as long as they can. Both of these groups are represented in the population that actually continues working past the age of 65 and you could question whether remaining in working life is a matter of “wishing to work” or “having to work”. A study that supports this differentiation used a questionnaire to ask the participants in extended working life whether they would still continue working if they won the lottery and were five million Swedish crowns the richer. 65% of the participants answered that they would continue to work anyway. This shows that a majority of working seniors works for other goals than receiving a paycheck while there is a somewhat smaller group that might work because they consider that they need the money.

The different dimensions of age are one aspect that could help to analyze survival in the workforce from an individual or group perspective, while another aspect is the working environment that a worker faces. The preconditions for a longer working life differ between individual workers but also depend on the sector or line of business. It is not a wild guess that, for example, a farmer, an industrial worker, a nurse and a journalist experience different working environments; environments which are more or less suited for a long working life when it comes to how work affects age and ageing (mostly mental and biological age) at the individual as well as the group level. To include work history and health history therefore provides a broader understanding of what could have an impact on whether an individual is able to continue working or needs to retire.

A “bridge job” is a term that describes the activities in the transition from a fulltime career to fulltime retirement. Research shows that it has become more common to either gradually work fewer hours in the regular job until full retirement or to change workplace or working tasks to a less qualified job for the last few years before retirement. This could be a sign of declining bodily functions or mental capacity that force individuals more or less voluntarily to either downshift or change workplace when the workplace fails to adapt the working tasks to the cognitive competence or the physical ability of the individual. The bridge job phenomenon could also, if we look at it from
How can we understand the discussion about the retirement age?

Politicians would like the population to extend working life to ensure that the welfare system does not collapse when a greater share of the population is above the age of 65. Changes in the retirement system also aim to view the elderly as capable of working and in this way to counteract ageism. This text tries to differentiate the specific age group of 65 to 75-year olds by widening the age concept from only seeing age as a number to also considering age from a biological and mental point of view as well as a social one. In doing so, the basis for viewing this cohort as heterogeneous and with a wide spectrum of needs and ambitions is created.

The need for retirement or the need to continue working could also be discussed in the light of successful ageing. One of the components that defines successful ageing according to one of the most well-known models is *active engagement with life* which is defined as *engagement in paid work or volunteering*. This could be interpreted as the importance of exercising cognitive functions as well as socializing with others and having a daily routine as factors of health. Whether these criteria could be fulfilled in working life or outside working life is most likely dependent on the specific context of every individual.

Is age then of relevance when it comes to participation in extended working life? If age is considered as more than the number of years that has passed since birth and also as including the specific context that the individual is a part of, then yes. The physical and mental state of the worker along with the working situation that the worker is a part of makes every situation special, but also possible to map out and connect to a group level to see general patterns.

Providing an age perspective in research thus means to problematize the general understanding of age and my ambition is that my research will contribute to the view of seniors in society as a diverse group with different lifestyles, ambitions and preconditions also when it comes to participation in working life. Some wish to continue working and some are forced to continue working, some do not wish to continue working and some are not allowed to. They are all covered by the same institutional regulations but the decisions that are made based on generalizations affect individuals in different ways.
References:
The Exchange of Care between Generations in Stepfamilies

Hanna Samzelius

In the following text, I will discuss one important aspect of aging, that of being part of a family. Regardless of whether people consider themselves as part of a family or not, all people relate to the family concept in one way or another. From the cradle to the grave people have different family roles, such as being a child, a parent, or a grandparent. The roles may be pleasant, difficult, satisfying, ambivalent and/or fraught with conflict. Different norms about family life, age and gender interact with how family roles are “done”.

In my contribution to this book I will depart from my ongoing work on a dissertation in sociology on the relationship between step-grandmothers, step-daughters and (step)grandchildren. My ambition here is to give you a glimpse of my research area and discuss how care between the generations can be seen as a part of the aging process from birth until death. I will also consider whether these relationships may differ if they are biologically or socially constructed. As I am part of a research school called Successful Ageing, I will end the discussion with some reflections about this concept and relate it to the myth of the evil stepmother.

Changing family patterns

As a consequence of increased freedom in society to choose how to construct a family, more and more families in Sweden consist of same-sex parents, single parents with children or reconstituted families after a divorce or separation. Nevertheless, the “nuclear family” is still the norm upon which we base our understanding of what a family is, how we do it and how social structures such as legislation or social policies are designed. Moreover, grandparents are not included in what we think of as nuclear families. A common view is that intergenerational relationships have lost some of their meaning and use, since children as well as old or sick people are now cared for either by professionals in preschools or by the healthcare system. However, research shows that intergenerational relationships are still just as important both as regards the socialization of children and caring for the elderly generation, as they were for earlier cohorts, although the social norms regarding how these relationships should be “done” have weakened.

Demographic changes such as people living longer and healthier lives have led to parents, children and grandchildren spending more and more time together in life. The extended time that elderly people, adult children, grandchildren and sometimes even greatgrandchildren spend together also affects how the relationship between generations are constructed; the expectations, and the conditions for an exchange of help and care between the generations. During the last few years, the aging population has increasingly been regarded as a resource for the younger generation’s everyday family life. Grandparents are often involved in babysitting, picking up or leaving children at preschool or caring for sick children. Moreover, grand-parents have
shown to be a protective factor for children in various risk situations like, for example, a divorce, when there is violence in the family or when the parents are depressed. Engaged grandparents contribute to children’s health, school performance and financial situation. As for the grandparents, their relationships with their children and grandchildren are important sources of social support which contribute to better health, self-esteem, social competence, a sense of safety and prevent feelings of loneliness. Furthermore, in so-called “nuclear families”, a substantial flow of resources, both practical and material, is exchanged between generations, especially from the elderly to the younger generation. With increasing age, the older generation receives more practical, and sometimes even financial help from the younger generation. In addition, attitudes and values are transmitted between the generations.

In view of the increasing number of divorces between parents recently, especially from the 1970s onwards, there has been an increase in the number of aging “stepfamilies” in today’s society. More and more aging men and women live or have lived together with a partner who has children from one or more previous relationship(s) with whom they have had some kind of social adult-child relationship. Many of these grown up children have now got children of their own. This means that “stepparent” relationships have expanded to include (step)grandparent relationships. However, very little is known about those relationships and what they mean in terms of care between the generations.

Under what circumstances do family members actively engage in care?

Although the Scandinavian welfare states support ideals of professional care, a lot of care is carried out by families even in Scandinavia. Knowledge about ideals of care and caring practices is valuable from a variety of perspectives. First, care has a significant value for society because all citizens are in need of it at some time in their lives. Secondly, care has a significant impact on gender equality, since care and femininity are intimately associated. Third, care is important for the social and economic future of western societies. How care for both older and younger generations is organized will therefore be an important issue for all societies.

To be part of a family may contribute to different life conditions. But it is not clearly defined who counts as a family member and how people think about giving or receiving care in reconstituted families. Who receives care and who gives care is a question for negotiations. Norms about who should give and who should receive are of importance for those negotiations. There are norms stipulating that family members should help each other, especially that parents should help their children. Moreover, most people expect a balance between giving and taking, even though the payback may be in different values or may even be a payback to a younger generation. For example, you may be expected to visit your parents more often, or help them with mowing the lawn if they give you financial help, or if parents save money for their chil-
Children’s future, the children might as adults be expected to save money for their own children. Some researchers argue that people may help their children because blood-ties cannot be cut off, that people invest in their children because they expect something back later in life, like a form of security. Reconstituted family ties might be easier to cut off, why invest in those relationships where an investment may not lead to the same security. In that context, it is interesting to ask the question whether adult stepchildren help their aging parents in relation to what they have received before. Another way of regarding the help between generations is to see it as an altruistic action, and it would be interesting to find out whether this generosity is also reflected in reconstituted family relationships.

In my dissertation I will discuss how intergenerational relationships develop and under what conditions the exchange of practical, emotional or financial support and care for the elderly or younger generations are taking place. I will by a qualitative and narrative study investigate how the relationships are discussed and negotiated and under what social circumstances these negotiations take place. By studying caring practices regarding intergenerational relationships in reconstituted families, it is possible to create an understanding for the changing meaning of families, which is of importance for equality as well as reproduction of class society.

**Doing Age**

For a qualitative sociological study of family relationships, it would not make much sense to regard the intergenerational relationships as a matter of chronological age, as age is experienced differently by different individuals. I will instead emphasize the social and cultural meaning of age and highlight the importance of life phases. In addition, I regard age as a negotiated and doing activity. Indeed the body’s chronological age limits the possibility of how to do age and family as, for example, when a woman is fertile and able to bear a child, the child’s need for nutrition and care, the need sick people have for care or when death is likely to occur. Those biological limitations also contribute to norms about how to do age in society.

Theories about aging often refer to elderly people and exclude childhood, adolescence and adulthood. Childhood or adolescence are more commonly understood from developmental theories, which focus on the normal stages for development, whereas theories about ageing more often highlight the problems experienced by the elderly, with a focus on biological or psychological decline. Age in itself is seldom the only or the most important cause of changes during the course of life. Discussions about age from a sociological perspective did not take place until the 1960s. In the 1980s, age began to be seen as a continuing process from birth (or conception) until death in sociology. The life-course perspective focuses on age as a process of social change. Accordingly, a person’s biography cannot be seen as an isolated phenomenon, but must be understood with regard to social relationships important to the individual, such as the family. A certain age means different things to different people and must be seen in a context of both personal and societal
history. People’s reality changes over time and new meaning is created by social relationships based on new life situations as well as the modernization of society.

Norms about how to do age in different life phases may differ between cultures, class or between men and women. For example, there may be different expectations regarding when to have children or what you are expected to do as a grandparent depending on whether you are a man or a woman, whether you come from Sweden or China, or whether you are an academic or a worker. These norms influence how people talk about age, how they interact and how they do age. The concept of “doing age” (like the concepts of doing gender and doing family) focuses on how age (or gender or family) is used and done in everyday practices. It is one way of understanding how the meaning of age, or life phases, is constructed between people in a social and cultural context. A point of departure is that age is produced and reproduced in social practices and in relation to other people. Age is done in a context of norms about how to behave in different situations and in relation to different circumstances, as for example, material conditions. To view age in terms of doing may contribute to understanding the meaning of age in different situations or social relationships, and highlight norms about age which may underpin negotiations on how to behave.

**Intergenerational relationships as gendered practices**

In most societies there are set ideas regarding what constitutes a good mother. Notions of femininity are intimately linked with notions of motherhood. You only have to be a woman for there to be expectations that you should develop motherly tendencies. Women are expected to take, and generally take, greater responsibility for the cohesion of family relations than men do. From a life-course perspective, women provide more practical support to other family members than men do. For example, women help their aging parents to a greater extent than men do, and grandmothers provide more help to their grandchildren than men do. The reason behind this greater responsibility for care is the different expectations we place on men and women. Since women generally have a poorer financial situation, live longer and poorer physical conditions, they also have greater needs for practical support than men do during their life course. It is common for women to provide a lot of help to their aging or sick partners, but when the women get old and sick they are widows who need help from someone else other than their partners.

One aspect of intergenerational care is that if grandparents take care of their grandchildren when they are sick, pick them up from preschool, or as in a lot of countries care for them full time when parents are working, this kind of care could be seen as contributing to equality between men and women as both are then able to be work and earn a living. However, as it is common that it is the grandmother rather than the grandfather who takes this responsibility; it also consolidates the motherhood norm. Moreover, this intergenerational care may lead to expectations that the parents should pay back by caring for the older generation, which rather impedes women’s opportunities for full-time work as women take greater responsibility even for this care.
When studying intergenerational relationships in families it is important to take into account the fact that ideals about motherhood and fatherhood have radically changed in Sweden over the last hundred years. Changed social structures such as the entry of women into the labor market and the fact that expectations of fatherhood have gone from primarily consisting of a financial and legal responsibility to gender equality and responsibility for children and home affect fathering and mothering at different times. Consequently, both individual and social conditions must be taken into account in order to understand intergenerational exchanges of resources.

In my dissertation I will focus on women’s experiences of intergenerational relationships in reconstituted families. I hope that this will increase the knowledge about what special expectations women may perceive regarding providing or receiving care.

**Theories about intergenerational solidarity, conflict and ambivalence**

The theory of intergenerational solidarity is often used to describe different dimensions of intergenerational relationships in families and may be used as a theoretical framework to understand what keeps families together, besides blood-ties. The theory, as it was constructed from the beginning by Bengtson & Roberts (1991), highlights six dimensions of solidarity between the generations. These are; 1) *Associational solidarity* – the frequency and patterns of interaction 2) *Affectual solidarity* – emotional closeness, trust, respect and feelings towards other family members 3) *Consensual solidarity* – common values, attitudes and beliefs 4) *Functional solidarity* – exchange of support and care 5) *Normative solidarity* – commitment of how to do family relations or about obligations between generations 6) *Structural solidarity* – opportunities for meeting, having contact etc.

This theoretical framework may be used to understand how the exchange of intergenerational care, which according to the model is called functional solidarity, is linked to other dimensions of family solidarity. The theory is the most used theory, in both quantitative and qualitative studies, about intergenerational relationships. Nevertheless, it is important to bear in mind that relationships within families may also be complicated and ambivalent and that describing a family in terms of solidarity may contribute to norms about how relationships “should be”. Accordingly, the main criticism against the intergenerational solidarity theory states that it does not take that ambivalence into account, which was the point of departure when Lüscher (2000) constructed the theory of intergenerational ambivalence.

The intergenerational ambivalence theory consists of two statements: that ambivalence may occur because of competing norms regarding family roles and that ambivalence may occur as a subjective feeling when a person has both positive and negative emotions towards another family member at the same time. The theory has been developed since then by adding that social structures such as gender, class, age and ethnicity affect both how people are able to cope with ambivalence and what ambivalence they experience.
Most research using the intergenerational solidarity or ambivalence framework, investigate intergenerational relationships at any given moment. By combining those theories with a life course perspective I would like to capture how solidarity, conflict and ambivalence change over time and how this process influences intergenerational care. Family relationships change over time. Experiencing different types of intergenerational transmission over your life course may contribute to solidarity or conflict or trigger ambivalence. Experiencing ambivalence may also lead to different decisions about how to do the relationships and therefore may contribute to the constructions of the relationships.

Each of the concepts of intergenerational solidarity or ambivalence contributes to an understanding of how intergenerational relationships are negotiated, what keeps families together and what pulls them apart. A great deal of research has shown that the relationships in reconstituted families are often characterized by conflict and the stepparent role is often experienced as stressful. Moreover, step-relationships are even more sensitive to norms about how to do the relationships as stepparents do not have the legal rights or obligations as biological parents have by law. Moreover, norms have been shown to be competing and conflicting. In this regard, ambivalence is likely to arise in stepfamilies.

My dissertation will further explore when and under what circumstances the intergenerational relationships in reconstituted families are characterized by solidarity or by ambivalence or by both at the same time.

**Intergenerational relationships in reconstituted families and the concept of successful aging**

You have all heard the stories about the evil stepmother in, for example, the fairytales about Snow White and Cinderella. In those stories, the mother is the good one while the stepmother is the evil one. Research has also shown that the constructions of the evil stepmother is something that stepmothers today still have to relate to and that there are many prejudices about members of stepfamilies. More recently, those relationships have been described as “bonuses”, like bonus families, bonus mothers and so forth. This might be seen as an attempt to reconstruct the meaning of the relationships by renaming them as good relationships. But are there good step(grand)mothers and evil step(grand)mothers? Would a good stepfamily look more like a traditional family based on biological ties? Would it be good to transfer a great deal of resources between the generations in stepfamilies like in nuclear families?

Those questions lead to a discussion on the term successful aging which has frequently been used in the gerontology research field during the last 25 years. The term successful aging implies that aging is a consequence of active choices. The theory encourages people to stay active, engage actively in grandchildren, avoid diseases, eat healthily and so forth. A common criticism concerning the concept is that it is not a free choice for anyone as biology as well as social structures may limit how free those choices really are. One dimension of social structures which might be discussed as contributing to
the potential of aging successfully is the family. However, how to define what is successful and for whom is already a topic of discussion within the field of gerontology. One way of defining it in relation to my thesis area might be to look at how well adult children have been integrated into society or whether the stepgrandparents receive the help they need from their children. However, what may be regarded as successful depends on how and in what context you look at it. Biographical research aims both to illustrate the individual in society and to visualize social relationships from the individual's perspective. In my opinion, life stories should not be seen as either true or false, but rather as one of several ways of reproducing and recreating the meaning of past events. If, for example, a grandmother speaks about how she is actively involved in her grandchildren because she picks them up from preschool three times a week, this separate experience could be reported as positive in some ways and negative in others, it depends on how she perceives the issue. From this perspective, it is difficult to speak about aging as a problem or as successful as it depends on how the story is constructed and understood by both the storyteller and the one who listens to the story. Even if the concept of successful aging should be defined subjectively, each event, social role or life phase could, through the ambivalence of the individual, be regarded as both positive and negative depending on the circumstances.

Hence, my answer to the matter of whether there are good or bad, successful or unsuccessful ways of doing intergenerational relationships in stepfamilies is no. I see no need to contribute to this black and white polarization. Nevertheless, I believe that the word “bonus” as a prefix for those relationships may help to reduce the stigmatization of these social roles. A bonus can also mean “one more”. In today's society, reconstituted families are more often consequences of divorces rather than the death of a biological parent, which was more common a hundred years ago. In other words, that stepmothers or stepgrandmothers could be seen as potential extra resources, or bonuses, in addition to the biological parents or grandparents. However, it is not certain that either the adult or the child wishes to speak about these relationships in terms of parenthood or grandparenthood. This is an empirical question.
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Successful ageing for people over 65 with dual sensory loss

Elin Lundin

Conclusion
In order to facilitate and create good conditions for successful ageing for people over 65 with dual sensory loss (DSL), it is important that they meet competent professionals who use an interdisciplinary approach with knowledge of DSL and not solely loss of vision or hearing. It is therefore essential that research is conducted in the field to enhance our knowledge and understanding. We all grow old and we will all meet someone with DSL, or perhaps even you might be affected.

Introduction
When you run into a friend in town, you use your vision to from a distance see who it is approaching you by recognizing the face, clothing and maybe your friend’s gait. As the person comes closer, you can often identify who it is by listening to their voice. When you talk to your friend, you use facial expressions, body language and different tones of voice to reinforce what you are talking about. This is not something that you think about; it is something completely natural to you. Imagine instead that you are in the same place, but it is very dark and the streetlights closest to you are broken. There is a lot of noise around you: many people speaking at the same time and a truck is driving nearby. In that situation, it will be a lot more difficult to discover your friend from a distance. Instead, it is not until your friend comes up very close to you and speaks clearly that you realize who it is and hear what the person is saying. We will revert to this example later on in this text.

In the literature, the combination of vision and hearing loss is at times called dual sensory loss (DSL) and at others deafblindness. In this chapter, the term DSL will be used. We have all met people with some form of DSL, old as well as young, active and involved or inactive and isolated. However, we may not have noticed it, because DSL is not a visible impairment and it can vary from a mild to a severe loss of vision and hearing. The purpose of this chapter is to describe from a holistic perspective what DSL may entail for those over 65, and the International Classification of Functioning, Disability and Health (ICF) is the chosen framework.

The basic structure of this chapter starts with a description of DSL in daily life. This is followed by a section on what DSL might entail for people over 65 and whether these people have congenital or acquired DSL. Since the framework of this chapter is ICF, there is a short introduction to ICF and the Model of Function and Disability. Finally, a presentation of an example in the light of ICF and what research says about DSL are included.

DSL in Daily Life
Two of the body’s senses are affected; vision and hearing. These senses interact and usually compensate each other when either of them does not function
optimally. This is sometimes very difficult and in certain cases even impossible for people with DSL. Since DSL affects two significant senses, the impact is so much greater, sometimes referred to as 1+1=3.

For most people, these senses are of significant importance in their interaction and communication with other people as described in the introduction, when you meet your friend in town. Vision and hearing are also important in order to obtain information, news and to go about your daily activities, such as shopping for groceries. Most of us are most concerned about whether or not we brought our shopping list. For a person with DSL, the shopping list is important, but the light and sound environment in the store might be even more so. Is the lighting sufficient but not too dazzling so that you can see and find what you intend to buy? When you reach the right shelf, are you able to identify which of the milk cartons you want since they all have a similar pattern of color? Once you have done that, can you see what date the milk expires? Several grocery stores also have music playing in the background, and there may be many people in the store at the same time. If the person with DSL needs to ask the staff in the store about something, it might be difficult to hear what is being said.

**DSL and Ageing**

DSL occurs at all ages and varies between different people depending on at what age they have developed DSL and how much their vision and hearing are affected. DSL can be caused by an injury, syndrome or disease. DSL is usually divided into four groups:

- *Acquired hearing and visual impairment*
- *Congenital deafblindness*
- *Congenital visual impairment with acquired hearing impairment*
- *Congenital hearing impairment with acquired visual impairment*

In the first group, we find the largest group of older persons. Most of them are individuals who have age-related changes and pathological conditions associated with vision and hearing loss. For people under 65, genetic causes are most frequent. These people may also develop age-related changes. The consequences depend on when in life the person develops DSL as well as on the degree of the vision and hearing impairment and which senses are affected first. A person with congenital deafblindness requires a lot of support and is dependent on others when carrying out many activities in their daily lives compared to someone with acquired DSL.

As we age, both our vision and hearing are affected. This is part of natural ageing, but it can also be due to a disorder. If your vision deteriorates when you are older, it could mean that you become more sensitive to glare, that you have reduced visual acuity and visual field, that there are losses in contrast sensitivity and delayed dark adaptation. For a person with DSL, this might mean that the screen on the mobile phone is dazzling. They might also find it difficult to distinguish the batteries from the hearing aid because of the lack
of contrast and also to understand where and how to place the batteries when replacing them. When our hearing deteriorates, we have problems perceiving sounds. It may be difficult to distinguish who is saying what when people are talking at the same time. It may also be hard for a person with DSL to have a conversation with another person, as it may be difficult to read the person’s lips and facial expressions.

**ICF (International Classification of Functioning, Disability and Health)**

In 2001, ICF was adopted by the World Health Organization (WHO), which is the founding organization of the ICF. ICF describes function and disability based on the health condition. ICF has a biopsychosocial approach, which means that it has a holistic focus. DSL affects the individual at all biopsychosocial levels.

![Figure 1. The Model of Function and Disability (WHO, 2001, p. 18).](image)

The ICF model of function and disability applies to all people, old as well as young. All people experience better or poorer health at different times of their lives.

ICF describes health conditions such as injury, disease or syndrome. It can also be linked to the natural process of a person’s life, such as ageing. All this affects the individual’s functions in one way or another. Any given health condition is at the center of a dynamic interaction between the various components of the model. These components are divided into two parts, the first part is function and disability and the second part is contextual factors.
In the first part, function and disability, we find body functions (vision/hearing), body structures (eye/ear), activity (seeing/watching, hearing/listening) and participation (participating in visible and audible signals). In the second part, the contextual factors, we have the environmental factors (the physical world and its features, roles, attitudes, social services, rules and laws) and personal factors (age, gender, life experiences). According to ICF, function and disability are more coherent than divided concepts. For example, activity limitations and participation restrictions may vary depending on how the environmental factors work as barriers or as facilitators. Therefore, there is not a clear boundary between having a disability and not having one; rather there is a continuum of greater or fewer restrictions regarding function.

ICF and DSL

When you use ICF, the focus is mainly on factors that create wellbeing for the individual. What facilitates or might facilitate life is therefore of significant importance to the individual.

People with DSL are a heterogeneous group, for example, depending on when in life they have developed DSL. Therefore, what is regarded as facilitating and what is regarded as a barrier varies hugely. As environmental factors differ greatly, the situation for a person with DSL may change rapidly as regards the activity of seeing, hearing and being able to receive visible and audible signals. The personal factors also affect the outcome. Some people are better than others in using their life experiences for his/her advantages than others.

Below I will use “Agda” 82, as an example of a person with DSL.

Agda

Agda lives with her partner in an apartment. She has a vision loss that has reduced her vision acuity and visual field, and given her problems with contrast sensitivity. She is also sensitive to glare and it takes time for her to adapt when she moves between different light and dark conditions. Agda uses glasses for everyday use and various magnifying aids. She has also a loss of hearing and has used hearing aids for a few years. Agda has always been very active and sociable. Visiting the knitting café has been one of her weekly highlights. Contact with her grandchild who does not live in the same city is also important.

Based on ICF, Agda’s situation can be described as follows. Body structures and functions in ICF terms are Agda’s eyes and vision, ears and hearing. The activity is seeing and hearing and the participation is to be able to receive visible and audible signals, and good environmental conditions are required in order to be able to do that. Agda has been at the low vision clinic and she has met an optician and occupational therapist. There she has received advice and information on different environmental factors she can use to make things easier for herself in her everyday life. For example, Agda has been ad-
vised to have a single-colored tablecloth on the kitchen table and select one which contrasts well with the china. Agda would like to use a plastic tablecloth and thus, to reduce the glare she has been advised to buy one that is matt. Agda uses a black surface to create a better contrast so that replacing the batteries and cleaning her hearing aid become easier. In addition to the magnifying aid, she has also received fitted lighting in the kitchen and bathroom. This makes it easier for her to find the right saucepan and to sort the laundry for the correct color and temperature. She has also received tactile and color marks on light switches, her alarm clock and the washing machine. In order to keep in touch with her grandchild, pay her bills and read the newspaper, Agda has started to use a computer. Since she used to work as a secretary, she knows the keyboard settings. This meant that it was easy for her to learn some of the new shortcuts she needed. She has installed a magnification program as well as help in setting color and text size. This means that she can now read the newspaper and chat with her grandchild.

Agda has tried out different hearing aids from the audiology department. She uses them diligently and when she visits a facility where there is an induction loop system, she adjusts her hearing aid to the correct position. This is something that Agda appreciates and which has enabled her to participate in her partner’s interest in going to the theater. A technician from the audiology department has also been at her home and installed an alarm system that is connected to the fire alarm, alarm clock and the doorbell. This is to alert her if one of the different devices is activated. These factors help Agda feel safe when she is at home.

Above, I have set out some examples of facilitating measures that enable Agda to receive visible and audible signals – both through personal factors like life experiences but also through environmental factors. However, none of the services have been based on a dual-sensory perspective, or been offered by an expert on DSL.

As mentioned earlier, function can be described as being greater or lesser. To clarify this, we return to Agda. In her home, she knows where everything is, “everything has its place” is one of the strategies Agda uses. Her partner is understanding and knows that this makes life easier for Agda. Agda also has various tools that facilitate her daily tasks. In this environment/context, she is not affected as much by her vision and hearing loss. In contrast, when she visits a restaurant the environment is different. The lighting is cozy, the menu is perhaps written on beige paper with red text that makes it very difficult to distinguish the words. The menu is also inserted in a plastic pocket that is shiny. There is music playing from the speakers, and the tables are placed close to each other, making it hard to avoid hearing the people sitting at the table next to them. In this situation, Agda’s vision and hearing loss becomes more apparent and she may have difficulty in participating in choosing food, distinguishing the food from the plate and conversing with her partner. Agda’s function is, in this context, restricted and she becomes more disabled. We can also return to the very first example, the meeting with our friend in town. When it is dark and there is a lot of noise around us, it is harder to par-
ticipate in the meeting with our friend compared to when the environmental factors are good. In these situations, our functions are restricted to various degrees.

As has been said, there is a dynamic interaction between the various factors in the model. ICF can be a way of clarifying the structure, visualizing different components and improving our holistic knowledge of how different factors interact – something that can also lead to unexpected or completely new insights.

**DSL and Research**

As described above, DSL affects the life of an older individual. Research has shown that people’s health and quality of life are adversely affected. There is also an increased risk of people with DSL becoming more isolated and not included in social contexts. Many also have difficulties adapting to their situation. Relatives, healthcare and rehabilitation professionals often do not have the necessary knowledge about DSL. Individuals with DSL are usually offered rehabilitation based on only one of their impairments, not based on the combination. Collaboration and knowledge between departments of ophthalmology/low vision clinics and audiology/ENT departments may also be insufficient. In order to achieve success in rehabilitation, different professions and disciplines need to work together.

There is an ongoing research project at Örebro University with a focus on people over the age of 65 mainly concentrating on acquired DSL. The plan for the project is first to find out how many people have severe DSL, what the causes of DSL are and what rehabilitation people with DSL have been offered. Thereafter, a rehabilitation intervention is planned and finally, the goal is to establish recommendations concerning the provision of healthcare in this context.
References
Having That Good Old Gut Feeling

The Fields of Questions: Ageing and Gastrointestinal Health

Text and illustrations: Frida Fart

Why a Field of Questions?

Welcome to the start of your journey into the Fields of Questions about ageing and gastrointestinal health, or gut health as it can also be called. In this chapter, I will touch upon these two major fields of research, which my PhD research is about, and bring up some of the questions that may be raised in these fields. But before we go into the questions, there is one thing that we do know for sure and that is: we do get older.

The Ageing Population

The world is changing – and so should we. With an ageing population and the subsequent changes in our society, we need to adapt financially, politically, socially and individually. But how do we best adapt to this change? That is where ageing research plays an important role. Through research, there are now several theories (which we will come back to later) on how to manage our present as well as our future. But there still remain several questions before we can get a clear picture of what the situation actually looks like as well as what we can do about it. Some of these questions could be: Why do we even get older? Why do we age the way we do? And why do we experience so many problems when we get older? These are just some of the questions that may arise in this field. The most dangerous answer to these questions is probably “because it is part of the natural ageing process”, since this may then hinder any further attempt to try to reveal any answers that might lie behind this issue. So, if we take nothing for granted, what can we find?

That Gut Feeling – Do you feel your gut?

Interaction, or our ability to interact, might be the humans’ foremost capacity – not only with each other, but with our environment as well. What we usually consider as our interaction centre is normally the skin, but we commonly forget our by far largest interaction centre: the gastrointestinal tract. But, in comparison to the skin, the gastrointestinal tract is designed to let materials pass – it is our filter to the outer world – our environment.
However, with this role comes a responsibility – the gut has to guard what is allowed to pass across the intestinal barrier into our system. This important duty, as all important duties are, is not performed alone. In addition to the gastrointestinal tract’s cellular and mucosal barrier, the gastrointestinal tract also constitutes of our immune system and our microbiota, which helps the barrier and filter to function properly. Together, they can perform the task of our guardian without us experiencing any problems, or symptoms, from our gut – we do not feel our gut.

Nonetheless, sometimes this process might not work as smoothly as usual, resulting in gastrointestinal symptoms. These symptoms may be there for a short time like, for example, vomiting or diarrhoea, but may also be there for a longer time, be persistent or come and go in life, as part of a gastrointestinal disease (for example, inflammatory bowel disease). Sometimes the cause is evident, like food poisoning, but mostly there is always the question of why. Why were only two of us affected by the food poisoning? Why do I get constipated so often? Why did I, and not my twin, get inflammatory bowel disease at an older age? And lastly, why do some people suffer more gastrointestinal symptoms when they get older?

**Finding your way in the forest of answers – Theories of ageing**

There are many questions to be asked, but this also means that there are many answers to be found. Today, there are several different theories that try to explain and help people to get closer to the answers, both from a biological and psychological point of view.

**Inflammation + Ageing = Inflammageing – A Biological Theory of Ageing**

There are several things that are uncertain in our lives and in our futures, but why is it that some people experience disease when they get older, while others stay as healthy as always? One of the suggestive theories about diseases with age is inflammageing.

Inflammageing is a persistent inflammation in the body, which is not correlated to an ongoing infection but instead correlated to an increasing age. This inflammation stems from an inflammatory imbalance, with too many pro-inflammatory agents driving inflammation to kill harmful invaders and a too little anti-inflammatory response, which strives to keep the inflammation at a bay. This pro-inflammation state could then, instead of killing pathogens, damage our own cells and tissues – leading to some of the diseases that are more common in older adults, for example, cardiovascular disease, type 2 diabetes, cancer and dementia.

The cause of this increased inflammation is still not completely certain. Some of the current explanations are based on genetic variations or environmental exposures in form of different types of stress that we experience.
during our lifetime. Another explanation is that our environment has undergone a lot of changes during a short period of time, which our evolution has not yet caught up with. Although there are some suggestions regarding how to decrease this inflammageing: inflammatory modulators, gut microbiota and diet. Thus, we come back to the role of our gastrointestinal tract and its role as a guardian – could improving our filter, with for example diet, result in fewer gastrointestinal symptoms? Or even better ageing? And if so, how much would this affect the ageing process?

**Stereotyped Diversity – A Psychological Theory of Ageing**

Let us start with a quick experiment: if you think of an older adult, what image comes into your mind? Now, try to remember that image until the end of this section.

We all have pre-set beliefs, or stereotypes, concerning most things, from how birthdays should be celebrated to what we consider an older adult to be like. Some of the common attributes that are stereotyped to older adults (usually categorized as equal to or above 65 years of age in Sweden) are that they are knowledgeable, wise, as well as being frail, dependent and having a decreased functional and learning ability. Furthermore, there is a global trend towards more negative rather than positive stereotypes about older adults.

The truth is, however, that older adults are the most diverse age group. Not only have they developed different experiences and personalities throughout their lives, they also have different levels of functionality. Nonetheless, this biased stereotyping towards negative aspects exists and often does not include the multi-diversities.

The problem with putting this large diverse group into a small box of stereotypes is that they will not fit – even worse, is that they might try to. The stereotype embodiment theory explains this through the fact that you become what you believe yourself to be, like a self-fulfilling prophecy. This belief will be shaped, not only by your own conception of yourself, but also by what everyone else around you believes you to be. The problem with this, is “fitting-into-a-box” or “Cinderella’s shoe” behaviour may subsequently affect their mental and physical health. One examples of this is that if you tell an older adult that they are slow or have poor memory skills, they will indeed be slower and have a poorer memory than if you tell them the opposite. In addition, a negative stereotype could exaggerate older adults’ stress response, while on the other hand, a positive age stereotype might lead to a health promoting behaviour of a balanced diet – which might affect our gastrointestinal barrier and hence our gastrointestinal symptoms.

In summation, biology is not the only thing that can affect our health, which is something we need to bear in mind. This may then lead to the ques-
tion of how much of our gastrointestinal symptoms, that have been seen to increase with age, instead stem from a psychological process, like a stereotype? This is a limitation in many research fields – because we have limited tools, knowledge or even possibilities to include all variables when doing research – we have limited research.

And the worst thing about stereotypes? We ourselves are the affecters and effecters. So, if we go back to our small experiment, what does your image look like now?

**Creating the way forward**

Even though we have several models and theories about why somebody is ageing or experiencing a gastrointestinal symptom, the picture is as life itself, not easy. The same question could lead to different answers, depending on how you look at it. So, what do we need to do, if we want to study ageing and gastrointestinal health and how can we do it? It is impossible to keep everything in mind and control for everything that could possibly influence ageing or gastrointestinal health – and even harder to understand what affects one without the other. Perhaps, the most important thing is to bear in mind that the complexity of the research fields reflects our complexity as human beings as well. We can never exist without our context and we can never get rid of our history, but we can aim for our future.

Hence, we can question our reality to make it better, not just blame age itself. We can choose not to accept things as they are, when they can be improved and not passively accept discrimination or negative faulty stereotypes about ageing. We can investigate the effects of different mechanisms at a small level, such as what might increase our stress levels or inflammation or what might improve our gastrointestinal health. We can do all this, while remembering the complexity of the whole picture and while trying on a small scale to improve the quality of the picture bit by bit.

And why should we conduct research about ageing and gastrointestinal health? Well, because we do know one thing: we do get older.

**Author box: Frida Fart**

Frida Fart is a PhD student in the field of medicine and participates in the Successful Ageing research school. Her PhD project, *The Gut As An Important Player In Healthy Ageing*, aims to find ways in which you can improve your general health as an older adult by improving your gastrointestinal health, or vice versa, as well as mechanisms behind gastrointestinal problems. She graduated from medical school in January 2017, as a Medical Doctor, and has been a PhD student since September 2016. This chapter was written based on some of the aspects and questions that she has discovered during her PhD studies so far. The chapter will hopefully serve as an inspiration for ideas, an eye-opener and provide an understanding about the complexity and importance of research within these fields.
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Why do we lose muscle mass with aging?
Is it possible to avoid it?

Janelle Tarum

According to American editor Judith Regan, the key to successful aging is to pay as little attention to it as possible. Irrespective of the meaning of successful aging which varies from one individual to another, the fact that the population is aging rapidly remains and this so-called “ticking time-bomb” situation comes at a price with several social challenges. Nowadays, we live longer than ever before, mainly thanks to improved healthcare. Consequently, our lifespan is long enough to face several chronic diseases which are nowadays the leading cause behind age-associated pathologies and mortality. The increase in life expectancy together with an epidemic prevalence of chronic diseases among older adults have encouraged the field of gerontology to focus on establishing strategies to delay the onset of disabilities and comorbidities. In line with this, the goal of this paper is to depict my doctoral studies based on the concept of increasing the health span while compressing morbidity. Furthermore, I aim to discuss my area of research from the perspective of contemporary concept(s) of aging processes, described as Theories of Aging by established researchers in the field of gerontology.

Within the framework of my doctoral studies, conducted as a part of the Research School at Örebro University called “Successful Aging”, the majority of the experimental work is carried out in the laboratory of the Department of Sport Science at Örebro University. In addition, my studies include epidemiological aspects and collaboration with external research groups. The focus of my research is related to functional and physiological aspects of geroscience, and integrates the fundamentals of biological ageing to identify strategies to increase the health span. The development of aging is roughly divided into four disciplines, which in addition to the abovementioned approach, includes also theories of policy and practice, psychology and social sciences. Since aging is a multidisciplinary process affecting humans from cell behaviour to complex social interactions, it is interesting to know how we might combine these concepts in experimental work. There is also a necessity to address the aging process from the perspective of well-known theories and how existing molecular biology together with theories on genetics contemplate the mechanisms behind age-related functional decline and the interventions that may delay this.

The biological theory of aging

The biology of aging has for centuries fallen into two main categories: programmed and non-programmed theory. The former suggests that genetics lead the biological mechanisms that limit our lifespan to live beyond our internally determined age. However, the latter, non-programmed or damage modern theory, holds on the contrary that the aging process is the result of accumulated environmental factors affecting the life time of an organism. Modern biological aging theories are initially derived from Darwin’s con-

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cept of essential evolutionary mechanisms where the “fittest will survive”. In 1960s, Medawar suggested the now widely accepted modified theory of Darwin’s mechanisms that lies between the two traditional theories. He argued that effective fertility declines with age and individuals with similar internal living and reproducing capacities have such different lifespans due to external causes (mutations, diseases, environmental conditions). However, these assumptions cannot be considered as completely valid since controversies regarding traditional programmed aging theories still remain. By now it is obvious that there is no consensus between gerontologists concerning whether aging is an actively or rather passively occurring process. These controversies have led to the assumption that none of the theories can be exclusively applied over time and that the human body has most likely adapted to both concepts in order to handle external changes. There is no doubt that a living organism is genetically meant to age. The question is simply about the design of that process.

Theories versus my research – intrinsic regulators

The main goal of my studies is to investigate the cellular and molecular mechanisms responsible for gradual age-related loss of skeletal muscle mass and to understand how lifestyle factors such as physical activity and dietary habits could mediate this process. From the methodological aspect, this is done by culturing pieces of muscle from young and old adults in sterile conditions, where we can stimulate muscle cells with several bioactive compounds found in the human body. In this way, we are able to see, in controlled conditions, how changing the environment of skeletal muscle affects the gene expressions, the release of crucial health-related markers and the morphology of the muscle. By examining these responses in both young and old human muscle cells, we can hypothesize how these processes might occur in the living organisms, what impact they have on skeletal muscle mass and whether there are any age differences. It has been suggested that aging is accompanied by the internal variability of certain genes and subsequent changes in cell metabolism, eventually leading to senescence, where cells are no longer able to renew themselves. This results in age-related disorders and impaired longevity. In accordance with the programmed aging theory, which is based on signalling within different genes and on cross-talk between tissues/organs, my studies follow the theory regarding how aging occurs based on a biological timetable and whether related changes are based on altered gene expressions. For instance, I will be observing whether levels of genes responsible for both skeletal muscle growth and decline are different compared to young and old muscle cells. Furthermore, if any of those responses are hampered, can it be “recovered” through exercise? In fact, we have developed a method to “train” muscle cells using a specific electrical stimulator to make cells to contract like they do when we exercise. Using this approach, our laboratory is the first to show a significant increase in the size of muscle cells by using an exercise model in sterile conditions. This method gives us an excellent possibility to examine underlying pathways at both the gene and cellular levels and the role
of endocrine signalling in exercise-induced adaptations in skeletal muscle of older adults. Furthermore, being able to imitate exercise using muscle cells provides us with an invaluable tool to answer the pivotal age-related question of why we lose muscle mass and what could be the countermeasures to prevent that loss.

**External factors**

Another theory of biological aging is rather non-programmed and emphasizes the role of the environment in the aging process. Cumulative damage to the cells and physiological systems over the years results in the “wearing out” and impaired functioning of the body. This “wear and tear” theory, also referred to as fundamental limitation theory, was first described by Weismann in the 19th century. Probably the best-known damage theory-based approach to explain aging is the overproduction of free radicals derived from oxygen during cell metabolism. The build-up of invading by-products causes deleterious modification in lipids, nucleic acids and proteins essential for the proper functioning of the body. Although we have natural enzymes to counteract the free radicals, this defence mechanism gradually slows down with age, and reactive oxygen species (ROS) start to accumulate. To date, the beneficial effects of supplementing antioxidants to reduce oxidative damage is controversial as studies conducted both on animals and humans have suggested that the ingestion of antioxidants blunts the positive effect of exercise and decreases the activation of the endogenous defence system. Despite the remaining controversies, research has shown that antioxidant supplements are favourable on training adaptations among older adults. However, even if there is not complete agreement on the suggestion that ROS are a primary contributor to aging, free radical signalling at gene and enzyme level has been shown to play a crucial part in cellular physiology. Therefore, free radical accumulation and the consequent oxidative stress are of interest in my research as this concept plays a big part in the loss of skeletal muscle mass. In this light, we have observed the beneficial effect of natural compound with antioxidant characteristics on cultured muscle cells, indicating the plausible health-promoting quality of antioxidants in such experimental set-up. Our ongoing experiments allow us to hypothesize that the regulation of ROS levels through the contraction of muscle cells and/or antioxidant application rather than just suppressing the free radical content, makes it possible to combat the processes of several pathologies and aging.

**Age-related changes in our body**

In line with the free radical theory of aging, age-associated changes in body composition are explained by increased oxidative stress, which is the underlying cause of muscle mass loss (sarcopenia). Furthermore, increased obesity has become a demographic problem and more people are diagnosed with both sarcopenia and obesity. It has been shown that a higher fat content in our bodies is associated with an increased pro-inflammatory environment, indicating a strong relationship between muscle and fat cells (adipocytes).
Main inflammatory markers, like cytokines, are released by adipocytes and thus, the increased concentration of those markers is associated with higher fat and reduced skeletal muscle mass. It can be claimed that the interaction between fat mass, inflammation status and muscle mass is strong, but the signalling pathways through which this crosstalk is regulated, are still not fully understood. One part of my research project is to study the effect of adipocytes on skeletal muscle characteristics, such as function and quality. In addition, we have sought to determine whether and how the fat compartments found inside the muscle cells of older adults contribute to a systemic metabolic profile. Furthermore, the epidemiological approach of the studies aims to investigate the associations between skeletal muscle mass and several markers of metabolic homeostasis among older adults. In addition, using a similar model, we could also predict how dietary habits together with physical activity behaviour impact the skeletal muscle mass of the elderly. The epidemiological perspective provides my studies with another tool to investigate links between the loss of skeletal muscle mass and the systemic environment, which are the underlying factors leading to the functional decline and onset of co-morbidities.

Large inter-individual variability in longevity has led to the hypothesis that people who live longer have a more stable genome than individuals with a shorter lifespan as their genome is not as prone to mutations and external changes. In fact, prolonging the maximum number of years for humankind will impede natural evolution in an undesirable way. Despite this, it is very important to identify biomarkers of longevity as this will be very useful in studies addressing effects of lifestyle on the aging process. The concept of successful aging is complex and has a different meaning for each one of us. From the perspective of my studies, increasing the health span while trying to maintain the highest functional ability level possible, can be viewed as successful aging. In line with the WHO framework, functional ability applies to your capacity to do anything that has a personal value and provides a sense of wellbeing. It is well known that regular exercise and healthy dietary practice are key behaviours to maintaining your overall physical and mental health. However, aging successfully does not mean training like an Olympian or following the diet of a bodybuilder. In summary, the purpose of the paper is to give a brief overview of my studies and to highlight the role of healthy lifestyle habits as a possible “tool” to prevent losing skeletal muscle mass and thus, improving functional capacity. All things considered, successful aging is not about how many years are added to our lives. In fact, it all boils down to how much health is added to the years we live.
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Music as a promoter of wellbeing for older men
Katarina Lindblad

Music has been used in all ages and in all cultures, to heal and support wellbeing, strengthen social bonds and create a sense of joy and connection. Nowadays, many people use music as a sort of self-therapy to enhance their wellbeing. This article focuses on the role music plays in the lives of older men, a group with specific health and wellbeing challenges, largely neglected in both research and healthcare.

It is a Sunday afternoon in the community building. The dance floor is full of couples whirling around dancing. While others, mainly women, stand along the sides, listening, resting, and waiting to be asked to dance. The minority of men are busy dancing most of the time. A band is playing popular dance music. Most of the songs are about love and tell the stories of either the intoxicating feeling of falling in love, or the bitterness of being left for someone else. The atmosphere is full of life and joy. Everyone is sober, there is no alcohol involved. The average age of the participants seems to be somewhere between 60 and up to 80 +.

Dancing is known to promote health in many ways. The participants get physical exercise, there is body contact with other human beings, they are included in a social context and their state of mind is positive. All this has been explored in research as important aspects of a health promoting way of life, good for everyone but not least for older people.

A majority of the people in the dancehall are women. This is the case in many similar settings. Women in Sweden are consistently more prevalent as consumers of culture and are also more socially active. Why is this? Where are the men? Why are not more men interested in being active in these joyful, pleasant and health-promoting activities? No studies have focused on this particular question, though some have speculated that masculine norms shape men's fear of being associated with “soft” or “female” interests.

The question could also be reversed. Instead of trying to find out why men do not engage in different kinds of social or cultural activities, the focus could be on those men who do engage in different ways. When a phenomenon is hardly studied at all, the most efficient way to learn more about it is to look at it in its strongest form. This is the angle taken in the research project Older men, music and wellbeing, which is part of the research school Successful Ageing at Örebro University.

But let us go back a little and start from the beginning: Why older men? And why music? To answer these questions, a little background is required.

The ageing population – new challenges, new directions
All over the world people live longer. While this is often described as a problem and a challenge for individuals and societies alike it could also be seen as a success and a considerable improvement. Many people live long, mainly satisfying lives, filling these extra years with whatever interests them. Most
older people see their lives as being mainly a positive experience, even despite diseases.

In fact, research has shown that ageing is not experienced as negatively as people often think. Most young and middle-aged people think about ageing with mixed feelings. We might look forward to not having to work, but many of us fear becoming sick and lonely, or dependent on others to help us with our daily lives. However, this fear may have its roots in more negative stereotypes which are impressed on us every day from the media, and the way we think and talk about ageing, than reality.

Contrary to popular belief, studies have shown that many people are emotionally more content when they become older than they were when they were younger. They are more appreciative, more open to reconciliation, and invest more in emotionally satisfying aspects of life. Negative feelings such as stress, worry and anger often decrease with age. Older people are capable of having a wider variety of emotional experiences; for instance, they are often more comfortable with sadness than younger people which, in turn, leads to greater enjoyment and emotional satisfaction. When people realise that they do not have all the time in the world, they establish their priorities more clearly.

This is called the “positivity effect”, as noted by Socioemotional Selectivity Theory, SST, coined in 1999 by Laura Carstensen, Professor of Psychology at Stanford University, in the USA, and co-founder of the Stanford Center on Longevity. SST covers the whole lifespan, claiming that people’s motivations in life depend on how much time they think they have left to live. As they grow older they naturally feel that there is less time left. This creates a shift in their priorities, so that they choose to spend their time with whatever puts them in a positive state of mind. Experiments have shown that older people, who are presented with all kinds of pictures, tend to choose the positive ones. They look at the pictures showing smiling faces rather than angry ones, and turn their attention to images with positive rather than negative information. In real life, they tend to choose fewer but deeper relationships and to prioritise more emotionally satisfying activities. To put yourself in a positive state of mind thus seems to be part of the developmental change in old age in the normal ageing process.

There is also no self-evident correlation between physical health and subjective wellbeing. It is perfectly possible to enjoy a sense of wellbeing despite physical illness, as well as feeling distressed despite being physically well. Research has shown that older people may experience high levels of wellbeing despite physical illnesses or impairment. In the United States, people of all ages were asked about their mental wellbeing, in other words how they experienced their lives. It turned out that the group feeling least satisfied was the middle-aged, whereas children and older people were quite content with their lives.
The above figure shows clearly that the experience of subjective wellbeing is at its lowest during middle age, and increases in old age. That is at a group level. This is not to say that individual suffering and despair do not exist. There are many older people who suffer severe health and wellbeing challenges. People suffer from loneliness, depression, illnesses or financial hardship. There is no point in trying to minimize these challenges. Older people live under considerable different circumstances in terms of financial, social and health conditions. The opportunities to enjoy a fulfilling life in old age vary considerably. Also, the figure is based on data from the USA. What the curve would look like based on data from somewhere else, is unknown.
Today, most researchers agree that there is a great deal that the individual can do to prevent illness. Through physical exercise, healthy food and by maintaining an active engagement in life, the individual can extend the period of healthy, fulfilling years. One of the most efficient ways of maintaining a sense of wellbeing, is to stay active and involved in anything that is interesting to you personally. This has been shown to stimulate the plasticity in the brain. Active ageing is even promoted in a policy document published by the WHO, *Active Ageing: A Policy Framework*. There is a great deal of research showing that engaged activity has a strong preventive effect, physically, mentally and socially.

**Older men and health**

The Swedish government and SKL (The Swedish Association of Local Authorities and Regions), have a gender equality plan which includes promoting “equal health” between men and women as one of its main goals. This points to the fact that health services are not always spread equally between the genders. There are specific health challenges both for men and women. However, in research and discussions on health-care for older people, the gender aspects are often overlooked.

Men live shorter lives than women. Although the gap is diminishing, women still outlive men by approximately four years; in Sweden the average life expectancy is 80 for men and 84 for women. This is not due to biological differences, but rather linked to gender norms and means that men tend to have riskier lifestyles. This includes a higher consumption of alcohol and more drug abuse, greater risk taking in traffic and an increased likelihood of being involved in violence. At the same time, men are more reluctant to seek help, especially for mental illness, due to the gendered norms surrounding masculinity which emphasise not showing weakness or vulnerability. Men have higher suicide rates than women. This is especially true of older men, who are largely over-represented in statistics on suicide. In Sweden, there are approximately 40 men aged 85 or older who commit suicide every year. Thus, suicide is a serious risk factor for older men.

Other specific health challenges for older men are loneliness and depression. It is often said that men do not to forge and maintain social contacts to the same extent as women. Divorced and widowed men often suffer from depression due to loneliness. Though depression is often believed to be more common among women, the numbers are evened out when you take into consideration the fact that women seek professional help more readily than men. This means that more women than men are diagnosed and registered by the healthcare system. When you take into account the fact that alcohol and substance abuse as well as aggressive behaviour could also be symptoms of depression, there are arguably many undiagnosed and untreated men with depression. These specific health challenges for older men are neglected as a research area, both in ageing research and often in research on men and masculinity.
Music as a healthcare resource

Throughout history and in all cultures, people have used music to heal both body and soul, and to strengthen social bonds. People have sung, danced and played for and with each other since time immemorial. With the growth in modern technology, music is now more easily available than ever before and with it listening to music has grown as the primary way people engage with music. Many people who listen to music in their everyday lives, use music as a healthcare resource or self-therapy, to reinforce and deepen an enjoyable state of mind, to change their mood at will, or just as good company. In this way, music can be both a health promoter and an illness preventer.

Modern neuroscience has shown that music works as exercise for the brain. There is no specific “music centre” in the brain, but the entire brain is stimulated, as well as the nerves, or synapses, between the different centres. The production of hormones, such as the “peace and quiet hormone” oxytocin and the “feel good” signal substance dopamine, are stimulated through listening to music. This in turn, strengthens the immune system and can reduce symptoms such as stress and depression.

However, humans are more than their brains. Music has been shown to give substantial health benefits at mental, social, existential, as well as physical levels. To engage in music can create a sense of meaning and purpose in life, strengthen self-esteem or support social engagement and a sense of belonging.

Most people who engage in music do so because it enables them to have emotional experiences. This can be arousing and exciting – or calming and relaxing. Usually, people listen to music to experience something positive. There is a link between these positive experiences and physiological, health-promoting responses in the body. These effects can be generated both from active music making, such as singing in a choir or playing an instrument, and from listening to music.

There is substantial research on the effects of music used in elderly care, or in activities such as choirs for seniors. Singing in a choir can lower the number of falls and visits to the doctor, prevent depression and loneliness and give the participants enhanced self-confidence and a sense of achievement and coherence in life. Both music therapy and music facilitated by other caregiving staff or the individual him/herself have been shown to have a positive effect on dementia, depression, stroke, COPD, Parkinson’s and other diseases often occurring in old age. Music is often used as an activity in care homes for the elderly.

Older men, music and wellbeing – a new study

Due to the specific health challenges facing older men, and since there are no previous studies linking older men and wellbeing to music, Older men, music and wellbeing was started in September 2016. The aim of this study is to form an understanding of what role music can play in the lives and wellbeing of older men.
For the first part-study, 15 retired men, aged 66–76, have been interviewed about their lives and what role music plays in relation to their general lives and wellbeing. The men are all involved in music in different ways, through playing an instrument in an orchestra or rock band, singing in choir or dancing, and through listening to music. Many of them see music as a vital part of their lives, noting that “I couldn’t live without music” and “I need music for my life”. Music is not necessarily the most important interest in all the men’s lives. Yet, even then it clearly has a function as a mediator to keep up an intimate relationship, or to reinforce social bonds with friends.

Since the study is still at a very early stage, there are no final results to present yet. A striking impression from the interviews, however, is that all the men interviewed had a positive outlook on their lives. This contradicts the notion that many men lose their sense of meaning after retirement, since they associate much of their identity to their profession. To understand more about this positive attitude in these men, SST will be used as a theoretical perspective in the analysis of the interviews.

Generally, these interviews concern men who are mostly content and positive about their lives. From an objective point of view, their lives could be described and experienced in completely different ways. One man lives alone without a family, mentioning “sad experiences” and “grief” in his life. Three were dismissed from work, one has struggled with a severe, diagnosed depression. Two of them take care of their physically disabled wives at home. One of them lives alone, since his wife is in a care home. Two have just lost their wives after long, painful periods of caregiving at home, one to cancer, one to Alzheimer’s disease. Thus, these men could just as well have landed in a negative outlook on life, feeling lonely, bitter or depressed. For one reason or another, this is not the case. In line with SST, they seem to choose to focus on positive events and emotions.

Clearly, though, music is an integral part of these men’s lives, and much more than just an activity. They describe music as part of their identity. It helps them regulate their moods, makes them relax or cheer up and helps them to be in touch with and to develop their emotional lives. Music also facilitates the creation of social bonds, and strengthens these men’s relationships. Thus, music can be regarded as a mediator that strengthens the “positivity effect” for these men, as stated in the ageing theory SST.

The project Older men, music and wellbeing is still at an early phase. When completed, the aim is to generate results that might contribute to a deeper understanding of how older men use music as a strategy for enhancing their subjective wellbeing and successful ageing, and thus how music might be more effectively understood as a resource in the lives of this specific group.
References


A longer lifespan and the aging of modern societies have led to an “epidemic” of chronic diseases. Most elderly individuals live with several chronic diseases at the same time. The overly fragmented healthcare system in its current form often fails to address the challenges posed by the simultaneous management of several diseases. Patients often lack the necessary information and the possibility to become actively involved in their own treatment and are instead being treated in specialist silos that focus on single diseases. There is an urgent need for a paradigm shift in the healthcare system to achieve a more patient-centered care and to promote successful aging. Patient empowerment is a key concept behind patient centered care. Research and development in the health information technology domain has a strong potential to drive the empowerment of patients by providing them with access to accurate comprehensible information about their disease(s) and access to their own medical records, and also tools for enhanced communication and intelligent decision support.

My PhD research embraces different types of information technology interventions with the common goal of successful aging through a more patient-centered and integrated care. Within the framework of the major, EU-funded and multinational C3Cloud project, we aim to develop a complex, multilevel information communication technology infrastructure to improve the obvious shortcomings of the healthcare management system of elderly people with multiple chronic diseases. Patients will be empowered by a specific platform and their care team will be coordinated and supported by the development of a personalized care plan and a coordination platform, and the clinicians’ work will be boosted by an evidence-based clinical decision support system. As part of these efforts, all existing health information systems will be interconnected by interoperability middleware. The EMPARK project both integrates various data from different devices and sensors used to monitor the symptoms of elderly people with Parkinson’s disease and would like to proceed with the computerization and transeral of the Parkinson’s disease clinical guidelines into computer-interoperable language, which could be utilized later for evidence-based clinical decision systems. The hypothesis throughout this project is that healthcare information technology can empower elderly patients to take control of their diseases which in turn increases their quality of life and the clinical outcomes.

This chapter will discuss the problems of and possible solutions for the current healthcare system regarding the medical management of the elderly and multimorbid population. It will make the reader familiar with the concepts of patient-centered care, patient empowerment and successful aging. It will also provide evidence for the importance of health IT development as a tool in achieving a paradigm shift in healthcare. Finally, this chapter will describe the researchers’ ongoing e-Health projects at Örebro University which all focus on patient empowerment.
The epidemic of chronic diseases and healthcare

Our societies have already undergone substantial demographic changes. The proportion of elderly individuals is constantly increasing in our modern societies as a result of a longer lifespan and lower birthrate. For most of us, an extended lifespan means a life with an increasing number of coexisting chronic diseases. More than half of the people over 65 suffer from more than one chronic disease and it is not uncommon to live with 5 diseases simultaneously. This is called multimorbidity, a common problem in the elderly population. Multimorbidity in the elderly accounts for 80% of healthcare expenses, and is a major contributor to a low quality of life and high mortality among these people. If these chronic diseases are well-managed with the active participation of the patients, and possible complications avoided, even the multimorbid elderly can maintain an active lifestyle and continue to be active both in the community and the family. This is an important aspect of successful aging, a concept which will be discussed in detail later. Unfortunately, this is often not the case. It is common that the elderly and sick people lose their social network, experience socioeconomic hardships and suffer from the psychological consequences of their diseases. It is also common that while they are being treated by many different doctors, nurses, homecare givers, they feel lost among them and left without any real control over the management of their diseases.

The different diseases are simultaneously managed by a number of specialist doctors, primary care physicians, nurses and homecare personnel without or with very little coordination. Each healthcare professional pursues his or her own specific agenda without paying enough attention to the other health problems. This renders patients with a feeling of being powerless and dependent in a process which easily makes them confused. The lack of empowerment, in turn, further increases their dependence and decreases their compliance with the treatment recommendations. Aging itself reduces patient compliance with the prescribed medication or lifestyle measures, but this deteriorates even further if you add the confusing effect of receiving conflicting instructions from different specialists, a typical situation for those suffering from several diseases.

To demonstrate this we use the example of a fictional 78-year-old lady, Mrs. Andersson.

Mrs. Andersson suffers from chronic obstructive lung disease, hypertension, diabetes, and also a lighter form of heart failure and has reduced kidney function. Although she feels limitations regarding her physical capabilities, she is still physically active, visits her grandchildren regularly and helps out in her local community. Due to a recently developed swelling of her legs and an increased shortage of breath, she is instructed by the primary care physician – who suspects a worsening of the heart failure – to take diuretics. This has only a limited effect and a control blood test after a couple of weeks reveals manifest kidney failure as a side effect of the diuretic treatment. She is referred to a nephrologist (kidney specialist), who informs her that she must stop taking the diuretics and moreover, because of her deteriorated kidney...
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function she should also stop taking one of the diabetes drugs. Another medication against hypertension should be continued at a reduced, 50% dose. When she asks the nephrologist what the subsequent effect on her diabetes and hypertension will be, he answers that this issue is out of his scope, and she should instead contact her primary care physician. At the subsequent examination at the family doctor, her blood pressure is measured and found to be high and an impaired control of her diabetes is discovered. She is recommended to take new medicines instead of the ones which were stopped or reduced in dose. After taking the new medicines she experiences further breathing difficulties and finds information on the internet that this can be due to the worsening of the lung disease as a possible side effect. She contacts the family doctor who decides to refer her to a pulmonologist. The pulmonologist asks Mrs. Andersson to stop taking the new hypertension medicine as it may worsen her lung function and contact the family doctor for alternatives. She is also recommended to start taking diuretics (the same she recently had to stop taking due to the side effects) as the pulmonologist suspects that her heart failure contributes to her breathing difficulties at night. The pulmonologist writes a referral to the cardiologist for an examination. When she tells her primary care physician, she is advised not to take the suggested diuretics but to wait 2–3 months, the approximate waiting time before she sees the next specialist, the cardiologist. After all these medical visits, Mrs. Andersson, who still has swollen legs and breathing difficulties, starts to feel helpless and powerless. In her opinion, the healthcare system deals with her individual diseases and their complications only one at a time and with substantial delays, and she as a patient is lost in this process. She would like to be able to communicate better and faster with her doctors and above all that all her doctors somehow would speak to each other around a virtual table to find together a common solution to all her problems with her active involvement.

This story illustrates how the current, overly fragmented healthcare system may fail a patient. The fragmentation of the healthcare system into increasingly narrow specialist areas is a natural consequence of the fast accumulation of scientific evidence and the increasing complexity of treatment options. To keep pace with the developments and be able to provide the most up-to-date care, the healthcare providers and the medical specialists are being forced to narrow their field of expertise. This provides great advantages for many patients as they can receive the best available treatment for specific diseases. However, when these diseases affect one individual, the situation can take a turn for the worse. Treatment recommendations (namely clinical guidelines) and protocols are available for single diseases and they often build on evidence that is exclusively derived from patients who suffer from that single disease only. Therefore, often little is known about how these single-disease treatment guidelines affect the other chronic diseases that a patient suffers from at the same time, and it may even be the case that they directly contradict each other. Specialists with expertise and resources for one single disease fail to pay the necessary attention to the possible clashes between recommendations, and leave the patients confused and without autonomy.
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Over the management of their own medical conditions. In the worst case scenario, as the story illustrates, this may give rise to unnecessary side effects and complications. The late reactions from the health professionals to an emerging problem has its roots, besides the fragmented healthcare structure, in the slow and outdated communication channels that do not link the specialists, primary care and homecare givers effectively with each other.

Successful aging, patient empowerment and integrated care

It is very interesting how people in different societies and different periods have looked upon aging. Aging in the industrialized world had been long perceived as a negative process associated with a constant loss of functions in life. This was largely reflected by the first scientific theory behind aging, Cumming and Henry’s “Disengagement Theory of Aging” from 1961. In the subsequent 50 years, the concept of aging has evolved into something potentially positive in both public and scientific opinion. Havighurst described aging not as a loss of but more as a maintenance and replacement of functions, exemplified by the positive adaption to loss of work through active grandparenting. In the last 20 years, the concept of “successful aging” has become increasingly popular. The definition of successful aging is not easy as it is simultaneously used as a research theory, a paradigm or model, a process, a clinical program or a goal in itself. Using the more complex psychosocial approach and definition to successful aging, the concept encompasses physical health, cognitive function, and social engagement as described by Rowe & Kahn in 1998. The more simple biomedical approach defines successful aging mostly as the avoidance of the development of chronic diseases with the age. All models of successful aging, however, emphasize the importance of continuous empowerment and maintained self-control in life with the advancement of the years. Even in the presence of chronic diseases it is possible to age successfully providing you adapt to them using appropriate coping strategies aiming to maintain the activity and initiative, and not losing self-control. Taking the example of Mrs. Andersson, she was capable of adopting an active life style and remaining in control over her life despite all her diseases until the point when she found herself lost in the confusing largely dysfunctional healthcare system. Despite the obvious efforts from multiple healthcare providers she failed to improve her physical well-being, experienced side-effects, received contradictory instructions and was disempowered so that the empowerment that she had otherwise enjoyed and got used to in her life was lost.

As the story of Mrs. Andersson illustrates, there is an urgent need for a paradigm shift from a paternalistic and fragmented healthcare system towards an integrated and patient-centered one. Patient-centered care – according to the definition of the Institute of Medicine in the USA – is “respectful of and responsive to individual patient preferences, needs, and values, and that ensures that patient values guide all clinical decision”. Patient-centered care as a concept has its scientific foundation in two theoretical models, the person-centered and participant-directed models of care. The person-centered model postulates that it is the patient who knows best what his/her in-
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Individual preferences, capacities, strengths in life are, and is best able to assess the availability of additive or alternative support (i.e. family, other caregiver etc.). This puts the patient at the heart of the planning and implementation of the individual care plan. Participant-directed initiatives are one step ahead from person-centered model towards almost complete autonomy and empowerment, including the decision-making and financial authority of the patients. An example of this is when a patient with a functional impairment has financial freedom over a given budget to “employ” or pay a bonus to the well-deserved assistants and is able to decide what kind of support is needed to enhance his/her individual quality of life.

Patient empowerment is actually the process needed to achieve patient-centered care. The most important tool for patient empowerment is patient participation, in other words, the active involvement of the patient in disease management. An empowered patient can make decisions not least because of the unrestricted access to his/her medical records and other relevant information about the diseases and their possible treatment. He/she must also be able to effectively communicate with the caregivers, and must enjoy the autonomy to make autonomous choices in the care plan according to his/her own preferences. The most well-established scientific theory of empowerment focuses on customers in general, but can also be applied to the empowerment of patients, not least if you also consider the patients as customers of healthcare services. This scientific theory is called Consumer-Directed Theory of Empowerment and states that consumer-direction, the autonomy over informed decisions, the availability of autonomy-enhancing support is the key to empowerment. The distinction between different types of support is very relevant to the healthcare system. Support can both enhance and decrease autonomy and can be perceived completely differently by those who receive it compared to those who deliver it. Taking the example of Mrs. Andersson, she probably perceived the support as ineffective and autonomy decreasing even though the actual quantity of support was substantial. Indeed, elderly sick people often receive a large amount of unsolicited help, which actually further reduces their autonomy, self-esteem and competence. Unrequested help has also been associated with worse health outcomes in research studies. On the contrary, patients with a perceived (not necessarily received) high level of support, and perceived control experience better health outcomes and have a greater chance of aging successfully. The way to achieve this leads to patient empowerment, which gives the feeling of control back to the patient and simultaneously eliminates a large part of the unsolicited efforts by letting the patients decide for themselves what they actually need.

Information technologies for patient empowerment

Health information technologies can function as an important facilitator to more integrative and patient-centered care, but it depends on whether they have interoperability, patient support domains, and interactive and intelligent functions. The most important component of patient-centered care is patient empowerment, which in turn is based on the active participation of the pa-
tient in the care team. If we consider a care team, let us recall the example of Mrs. Andersson again. She was surrounded by many doctors and nurses but their performance could hardly be defined as teamwork. She was constantly engaged in two-sided, instead of multi-sided communication and at the end she wished to somehow bring them all together, including herself, around a big table for effective communication and decision-making. Mrs. Andersson’s difficulties could have been prevented and her problems could have been effectively solved if she had been treated by a real team. Teams need teamwork and for teamwork all the members of the team need to be engaged in efficient, multi-sided and real-time communication for proper decision-making. This is particularly challenging in the healthcare system, where the medical information which is required for decision-making is abundant and high in complexity. In the case of multimorbidity, it means a large amount of present and past patient data in the context of multiple complex guidelines and medical expertise. Additionally, team members in this case sit in different offices and are not readily available to each other at any moment.

Health information technologies are said to overcome most of these issues and be able to provide all the necessary instances for an effective and much less error prone communication and decision-making in the healthcare system. For many healthcare providers, information technologies already play a key role in patient empowerment by providing patients with up-to-date, accurate, and comprehensible information about their diseases and access to their own medical records, and also a platform for electronic communication and engagement with the care provider.

However, most health providers currently rely on rather mechanistic health information systems which function rather more as a data repository then an interactive tool. As a consequence, it is easy to add information to the system but rather more difficult to rapidly retrieve or share complex information that might be required for the decision-making. Additionally, these health information technologies, such as the healthcare system itself, are also deeply fragmentated even within the same care “team”. The most common situation is that different IT systems support the primary, the secondary and homecare and these systems cannot exchange information which is what is called a lack of interoperability to use the technical term. Without interoperability, specialists, family doctors, social workers make their own decisions based on the limited information they can see or retrieve from their IT systems at any given moment. These decisions may often not be optimal, or in the worst-case scenario directly erroneous. IT systems also lack computer-aided intelligent support for treatment-related decisions although the theoretical and technical grounds have been established.

With interoperability, and the application of such supportive health information technologies, physicians and nurses sitting in distant offices could build and implement together individual health management plans with the patient in focus and taking all chronic diseases into consideration at the same time. Interoperability can be achieved by applying data standards. There are several standards available which can serve this purpose. One of these
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is openEHR from the open Electronic Health Record Foundation. This is an open source standard specification, which has been developed with the purpose of assuring interoperability by introducing the concept of a two-level modeling approach. It means a complete separation of the clinical data modeling from the core programming tasks (the information modeling), something which is washed together in the current health IT systems. Over the last decade, openEHR has been successfully applied both as a self-standing health IT system and as a tool to provide interoperability in multi-system environments and for computer-aided clinical decision support. Once interoperability is guaranteed, it becomes possible to add modules for common care planning which can be readily utilized by all the members of the caregiver team. Such a care-planning module would ensure multilateral communication and rapid interactions in the planning and implementation of care, which was lacking in the case of Mrs. Andersson.

It may also be important to consider adding intelligent decision support for the care team. Clinical practice guidelines can be seen as the cornerstones of quality care, as they reduce unjustified practice variations and ensure that the treatment is evidence-based. The challenge is that in order for them to be effective, clinical guidelines need to be integrated with the complex and individual care plan of the patient, which must take into consideration many diseases, socioeconomic factors and patient preferences at the same time. The formalization of single-disease and narrative clinical guidelines as computer-interpretable guidelines are a way of overcoming this problem. There are several guideline representation languages. We use the Guideline Definition Language developed in Sweden but published by the international openEHR organization. With the help of computer-interpretable guidelines, it becomes possible to build decision-support systems, which can improve clinical decision-making. One of the really hard issues in this type of research is not only how to synthetize all the relevant narrative clinical guidelines into computer-interpretable guidelines but in the case of multimorbidity to minimize the potential conflicts between the different recommendations.

The Health Information Technologies are very promising as regards their great contribution to patient empowerment and the transition into a patient-centered, integrated care system. This is probably most important for the elderly and people with multimorbidity as the story of Mrs. Andersson illustrates. It is, therefore, somewhat surprising that there is a lack of established theories when it comes to an estimate or model for the impact of technological (i.e. eHealth) development on aging itself. Several theoretical frameworks have emerged to explain the effects of technological development and intervention on people’s behavior. The most well-known and widely used models are the Ritterband behavioral change model and the Persuasive System Design Framework. The Behavior Intervention Technology Model combines the elements of the previous two and helps to define the why, the what, the how and the when questions regarding the application of technology to change the behavior. However, none of them are specifically for elderly people. On the contrary, nearly all of them were developed with the participation
of young individuals. This warrants caution as older adults were shown to be cognitively different to younger adults. For instance, they are less prone to be swayed and deterred by messages about the negative health consequences of a type of behavior, but can be more motivated by positive messages than younger adults.

Research aim and objectives
The transformation of the fragmented and single-disease centered healthcare system into a patient-centered and integrated care system is the key to a better and more efficient healthcare system. The greatest benefit of patient empowerment and integrated care is in the management of the elderly and multimorbid people where the fragmentation of the healthcare system and the dependency of the patients is most noticeable. My PhD research embraces different types of information technology interventions with the common goal of successful aging through a more patient-centered and integrated system of care. These studies address the shortcomings of the current healthcare organization and information technologies with special attention to the fragmentation. The research and development will follow the participatory action design which is based on the patient-centered theory. In particular, my research aims to develop IT artifacts through three major projects. These projects and my research contribution are presented below.

The C3 Cloud Project: A Federated Collaborative Care Cure Cloud Architecture for Addressing the Needs of Multi-morbidity and Managing Poly-pharmacy.

The C3 Cloud Project (2016–2020) aims to provide individual and integrated care plans for the elderly, multimorbid patients supported by state-of-the-art health information technology solutions.

The project addresses several shortcomings of the current healthcare organization and health information technologies that serve as an obstacle to patient-centered and integrated care. This multinational project received 5 million Euros in funding within the framework of the EU Horizon 2020 project and its name is an abbreviation of its complex title: “A Federated Collaborative Care Cure Cloud Architecture for Addressing the Needs of Multi-morbidity and Managing Poly-pharmacy”.

The C3-Cloud Project, with Örebro University as an active participant, will establish an information communication technology infrastructure enabling a collaborative “care and cure cloud” for the continuous coordination of patient-centered care activities by a multidisciplinary care team and the patients/informal caregivers. A Personalized Care Plan Development Platform will allow, for the first time, the collaborative creation and execution of personalized care plans for multi-morbid patients through the systematic and semi-automatic reconciliation of clinical guidelines. This will be achieved through the help of the Decision Support Modules that help clinicians in risk prediction, patient stratification, recommendation reconciliation, poly-phar-
macy management and goal setting. The merging of multimodal patient and provider data that is otherwise derived from non-interoperable health information systems will be achieved via C3-Cloud Interoperability Middleware. An Integrated Terminology Server with advanced semantic functions will enable the meaningful analysis of multimodal data and clinical rules. Active patient involvement and treatment adherence will be achieved through a Patient Empowerment Platform ensuring patient needs are respected in decision-making. For the demonstration of feasibility, C3 Cloud will include pilot studies with a focus on 4 chronic diseases: diabetes, heart failure, renal failure, and depression in different comorbidity combinations. Pilots will operate for 15 months in 3 European regions with diverse health and social care systems and information communication technology landscapes, which will allow for a strengthening of the evidence base on health outcomes and efficiency gains.

Örebro University is participating in each of the major deliverables of the Project either as a leader, contributor or reviewer. The University is the leader of the ethical management and the data protection plan. My personal research interest in the C3 Cloud project is the computerization of the clinical guidelines to equip the care team with an intelligent clinical decision support module. This module will be a guarantee for the elimination of such clinical decisions that cause serious conflicts between the guidelines of the comorbid diseases and give a common planning base for the entire care team. Clinical practice guidelines will first be translated into computer interpretable guidelines with prior identification and reconciliation of possible conflicts between the individual guidelines. In this process, I have had the lead task of identifying the evidence-based clinical guidelines of the four chronic diseases included and translating them into logic flowcharts. My participation will later include the translation of the flowcharts into computer interpretable language using the Guideline Definition Language.

In my research related to C3 Cloud, I will focus on the previously discussed theoretical models, which help to understand the project’s effect on patient empowerment, such as the theories of person-centered/participant-directed models of care, and especially in the Consumer-Directed Theory of Empowerment model of empowerment. Bearing in mind that C3 Cloud will measure the effects of intervention on both the patient and health provider sides, it can even be viewed through the lens of the Socio-Ecological Model, a theoretical foundation that is often used to assess or predict the effects of health-promoting interventions.
EMPARK Project – The Empowerment of Patients with Parkinson’s Disease

The EMPARK project aims to develop and evaluate a system to empower elderly patients with Parkinson’s disease by giving them regular feedback about their disease activity. It is a 3-year project (2017–2019) which aims to recruit 30 patients with Parkinson’s disease and was initiated at Örebro University in collaboration with the neurologic departments of the University Hospitals in Örebro and Uppsala. It has received funding of 3.2 million SEK from the Swedish Knowledge Foundation.

The main goal and hypothesis is that the feedback on disease activity may increase patient awareness and improve self-management of the disease. Half of the participants will receive usual care (no feedback), the other half will be provided feedback for two weeks. The EMPARK researchers will combine an array of already existing health information technology tools to achieve this goal. These internet-linked tools will gather relevant and real-time information about the actual disease activity. Tremor, the shaking movement of hands, is one of the most characteristic symptoms of Parkinson’s disease and can be continuously measured by placing a wrist-accelerometer on the patients. Similar sensors on the patient’s bed will provide useful information about the diurnal rhythm and time spent in bed as these are often affected by the disease. Information about medication intake will be provided by an electronic dosing device. This device will also serve as a reminder function when the medication intake is due.

Daily activities and mealtimes are also important for the assessment of the disease but hard to measure objectively. EMPARK researchers will ask...

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**C3-Cloud architecture**

- **Personalised care plan development platform**
  - Personalised care plan (PCP) creation based on reconciliation of clinical guidelines

- **Coordinated care & cure delivery platform**
  - PCP execution/monitoring/update
  - Virtual care review meetings

- **Patient empowerment platform**
  - Active involvement in PCP and decision making
  - Goal achieving
  - Risk monitoring

**Clinical Decision Support Modules**

- Risk assessment & stratification
- Reconciling clinical guidelines
- Detecting & proposing resolutions for multiple treatment plans
- Poly-pharmacy: detecting unnecessary/contradicting medications
- Goal setting & monitoring
- Detecting deviations from goals

**C3-Cloud Interoperability Middleware**

- **Technical interoperability**
  - Patient data content standards
  - Patient data exchange standards

- **Semantic interoperability**
  - Patient data
  - Multi-morbidity care pathway
  - Personalised rules

- **Privacy & security**
  - Authentication
  - Authorization
  - Auditing

Electronic Health Record Systems
Social Care Record Systems
Home/Community Care Systems
Personal Health Record & Tele-monitoring Systems
EMPARK Project – The Empowerment of Patients with Parkinson’s Disease

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As feedback, patients will be able to view all the information gathered on the EMPARK application and this will provide them with a continuous update on their disease symptoms and activity. Besides the patient feedback loop, treating clinicians, neurologists at the Örebro and Uppsala University Hospitals, will also gain access to the data from their own patients. Separate web-based interfaces will be developed, one for the clinicians and one for the patients based on their needs.

In this project, my personal contribution will involve the design and development of the clinician interface applying a user-centered design. I will also be responsible for the subsequent evaluation of its usability and effectiveness with an emphasis on elaborating the main questions related to empowerment.

The project follows the participatory action design. This means that the patients are both the subjects of investigation and intervention at the same time, in other words they participate actively in the project. How this intervention, the feedback on disease, will influence the behavior of the patients and the clinicians and whether it will lead to better care are the main questions to be answered by EMPARK. For this purpose, the EMPARK project must build on those research theories that help to understand how and why humans behave as they do if they are subject to some kind of intervention.
These theories are called behavioral change models and some of them have been further specialized for health interventions.

If the project achieves its goals and the results suggest positive effects on disease control and patient awareness, patient self-autonomy and self-efficacy, it could be a useful tool in the future management of Parkinson’s disease.

**The Computerization of Parkinson’s Clinical Practice Guidelines**

As discussed earlier, the advantages that are derived from clinical guideline computerization and integration into intelligent decision support are numerous. Most importantly, it would allow the integration of the guideline-derived actions into a care plan that also incorporates treatments and care for other diseases and patient preferences. It could also speed-up the decision-making process and make it less error prone.

One possible additional project, that may become a part of my PhD research, is the translation of the narrative Parkinson’s disease clinical guideline into a computer-interpretable language. This would be accomplished by representing the clinical data and expressing the clinical rules, and by interviewing neurologists specializing in Parkinson’s disease to gain an understanding of and developing the clinical rules. These clinical rules will be represented by the utilization of openEHR specifications and the Guideline Definition Language.

A possible further extension of this project could be the investigation which assesses the compliance with clinical guidelines in daily practice. To
this end, data collected from patient treatments retrospectively will be run against the computerized guidelines to find the deviations which occur in daily practice. This can be accomplished by executing the rules on real Parkinson’s patient data, which will be retrieved from the electronic health records at Uppsala Hospital.

This work would also contribute to the growing knowledge regarding the feasibility of the openEHR and the validity of guideline definition language for computer-interpretable guideline development.

**Summary**

The healthcare system, in its current form, struggles to manage the complex challenges of treating an increasing number of elderly and multimorbid individuals. The care is fragmented, error prone and holds back patients from empowerment, a critical element for a more patient-centered and integrated care. There are a number of ways that healthcare information technology can be used to promote patient-centered care and increase patient empowerment. The benefits of these measures include better access to health information and health services, improved patient care and safety, greater coordination of care, and more empowered, autonomous patients. All these contribute to the overall goal and concept of successful aging which has gained a great deal of importance in the aging western societies. This chapter describes the ongoing research projects that I am personally involved in as a PhD student at Örebro University. Although the goals of these projects differ, they focus on patient empowerment and successful aging through health information technology development. These research projects and my personal efforts will hopefully contribute to ensuring that elderly and sick individuals remain self-autonomous and active members of their communities and families.

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**Author box: Liran Karni**

Liran Karni is a Ph.D. student in informatics and a member of the Successful Aging research program at the Örebro University. Her Ph.D. study focuses on the empowerment of elderly with chronic diseases through information communication technology, and she is an Active member of the eHealth research group. Liran was born in Israel and obtained her BSc. in Electrical Engineering from the Budapest University of Technology and Economics, Hungary in June 2005. She continued to work as a software developer at international companies both in Hungary and Israel. As a freelancer, she also participated in several IT startups. In July 2015 she received her MSc. in IT Management and Public Administration from the Oerebro University, Sweden, where she continued to work as an assistant researcher in the field of interoperability between the healthcare information systems before her PhD studies at the Informatics Department.
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The learning activities and health of older adults, a salutogenic perspective on successful ageing.

Magnus Schoultz

Most people think that education is something that you participate in when you are younger. You study to obtain qualifications that later on help you find employment. Getting an education at a young age is also positive from a health perspective and staying healthy throughout your life increases if you do. But in this chapter the focus will not be on the relationship between education and health throughout your life but on how learning activities may contribute to the health of elderly people. Older people participating in education is quite a new phenomenon. Interest in their education has, however, increased recently. In this chapter I would like to shed light on the question why it has become such an important matter and why there is such an interest in elderly people participating in education. I will also discuss the field of research and present some results regarding the relationship between learning and health for elderly people. I will also try to explain why a salutogenic perspective may contribute to a better understanding of this field of research and the concept of successful ageing.

Why education for older adults?

Researchers state that we should not regard the elderly as a homogeneous group of people, instead this population should be regarded as a very heterogeneous group with many different life perspectives. Some of them have been forced into an early retirement while others have been longing for theirs. Some have a strong financial position and good health so they are still able to participate in different activities. Others suffer from illness and impairments and increasingly require support from others. In order to develop healthy ageing, we need to gain better knowledge and information about life in our “golden years”. Different areas may contribute and therefore it will be important to find different aspects that may have a positive impact on the health of elderly people. In addition, society is changing more rapidly today, and education and knowledge have been put forward as instruments to face this challenge. People need to be adaptable and flexible. Both the European Union [EU] and the Organisation for Economic Cooperation and Development [OECD] have invoked education as a key factor for the future and the interest in the learning and education activities of the elderly has increased. In this context, lifelong learning has been put forward as an important concept to understand the learning of elderly people. The concept stresses the need to continue learning with education activities throughout your entire life, not only at a young age or during your working life. The concept has been used increasingly during the last few decades, and as it has become more important today to be at the forefront of developments, lifelong learning is now considered to be an important tool to achieve economic prosperity. National economies are facing new challenges more rapidly than earlier. People today
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are facing more changes in society than ever; the rapid technological changes in our societies are enormous and put great demands on the population. Therefore, lifelong learning has been considered as the main instrument to meet those changes. Swedish popular education is one of the most common providers of education for elderly people in Sweden. One example is Seniouniversitetet. It belongs to Folkuniversitetet, which is an association that provides a broad spectrum of different adult education activities. The activities may vary from more theoretical courses to practical courses like handicrafts. Most of the participants in my research will be taken from this context. Different activities and organizations may be included in the concept of popular education. In this text, education and learning will be used to conceptualize different learning activities for older adults.

What do we know?

On account of the two aspects mentioned above, a need for more education and a greater focus on healthy ageing, questions have been raised regarding the relationship between the learning activities and health of older adults. Previous research has shown that education can enhance an elderly person’s health, but more research is needed to explain the relationship between the two and also the type of impact education can have on wellbeing and health. Chandra Mehrotra, Professor of Psychology, finds that activities in the home environment are important for the cognitive ability of individuals. Therefore, learning and education can stimulate mental ability so that it can be retained or even enhanced. A decline in mental ability can be reduced with training. Participation in education has also been shown to have a positive impact on social and cognitive development and may reduce the decline that comes later in life.

Older adults also value social aspects greatly. Andrew Jenkins, research fellow at the Institute of Education at the University of London, analysed data from the qualitative study the English Longitudinal Study of Ageing (ELSA). The participants in the study were aged 50 and above in 2002. The study had a broad perspective and reviewed different information, for example, mental and physical health, wellbeing, quality of life, financial and social circumstances. The aim was to examine the effects of adult education on quality of life and wellbeing. Music, art and evening classes had a significant impact on the participants’ wellbeing. In contrast to that, formal courses and gym/exercise classes had no significant effect.

The study did not provide answers to why certain activities had an effect on subjective wellbeing. On account of the differences in the study, Jenkins believes that people participate in formal classes to develop in their occupation. The effects on wellbeing will come later when they are able to use their new skills. On the other hand, people who participate in dance, art and evening classes already have an interest in those subjects. They also participate in learning activities to meet new people. As a consequence, they feel a direct effect on their wellbeing and their quality of life. In short, research has found a link between the learning activities and health of elderly people. Thus, more
research has to be conducted to gain a better understanding of this relationship.

Elisabeth Mesthenos, researcher on ageing and health, and Director of the International Federation of Ageing, and Alexandra Withnall, Associate Fellow at the University of Warwick, argue that the link between learning and health is difficult to explain. In their review article, they state that there is a need for research that examines the impact of different subject areas on health. According to them, more quantitative research is required to highlight the effects of lifelong learning on health, but they also point out that there is a lack of good qualitative research. They also emphasize that focus should be more on how we can reduce different obstacles and make it possible to manage them rather than on creating new educational activities.

Besides Mesthenos and Withnall’s review article, little has been done to map out the field and the link between health and learning of older adults. Miya Narushima, Jian Liu and Naomi Diestelkamp, researchers in Health Science at Brock University in Canada, argue that more research, both quantitative and qualitative, is required to give us a better understanding of the causal effects. So, we know that there is a link between the learning activities and health of elderly people and that education can have an impact on wellbeing and the quality of life. But we also need to pay attention to the fact that education may also lead to more negative feelings like stress and anxiety. Education may have both negative and positive effects and we need to be aware of this when we discuss the links between learning and health. Hence, there is a need to explain more explicitly the educational activities older adults participate in and how different types of learning contribute to health and wellbeing.

The aim of my thesis is to shed light on the relationship between learning and health for older adults. I would like to focus more on different educational and didactical questions such as what is the learning process in different educational activities? How can different types of learning contribute to wellbeing and health? Is the content important? Are there any pedagogical or didactical methods that work better than others? I will conduct four different studies to obtain more information about this relationship. The first study, a literature review, is currently under way. The aim is to gain an understanding of the link between the learning and health of elderly people and to identify the research gaps in this field. A conceptual analysis will also be applied to identify different definitions and concepts used to describe health and learning. The literature review could be the starting point for the design of the other studies. So far, the systematic review shows a shortcoming in the field regarding explanations of the learning taking place in different contexts. Different concepts have been used to describe health and most research has been quantitative. A link has been found between the learning activities and health of older adults in terms of enhanced psychological wellbeing and quality of life. The results also demonstrate that more research needs to be conducted on the learning processes in different contexts. There is also a need for more qualitative research on how learning contributes to the health of the elderly.
and how health can be understood from a wider more salutogenic perspective.

**New ways to interpret health**

Present research has focused a great deal on illness and disease and the sources of these. But health should be viewed from a broader perspective. The World Health Organization (WHO) has in its definition of the concept included aspects such as physical, mental and social wellbeing. Thus, it is essential that we gain more knowledge about peoples’ estimated and subjective health, and not just focus on their objective health.

A concept that is very important in gerontology research is successful ageing. Another concept closely related to successful ageing is healthy ageing. There is no universal understanding or definition regarding successful ageing. And people have interpreted the concept in different ways regarding how to measure it and how to achieve it. Rowe and Kahn point out three aspects in their model regarding successful ageing. 1. Avoiding illness, 2. Retaining a high level of physical and cognitive ability and 3. Participating in social and stimulating activities. They focus on topics like good physical and mental functioning and wellbeing. Successful ageing has been criticized for overlooking the impact of different social factors on the health of older adults but also that it does not highlight peoples’ own thoughts about their health and what it means to them. A subjective component may contribute to the model of successful ageing.

To gain a better understanding of the kind of impact education and learning activities may have on older adults, new ways of understanding health are needed. A salutogenic approach can give new insights regarding this field and help us to understand health in a different way. It can also fill the gaps that have been seen in the concept of successful ageing. The salutogenic model could be very useful for health promoting research and practice and it should have a more central position. It can develop the field both in a theoretical way and also in different interventions, and how those best can be planned. One of the challenges for future research is to find out what type of environments and conditions maintain and develop the quality of life also for the elderly. A person will under his or her lifetime encounter different situations and environments. These encounters can create disorder and chaos.

Aron Antonosky, Professor in Medical Sociology, created the salutogenic perspective to better understand and interpret these mechanisms. The aim is to create a better understanding regarding how different living systems can survive and not break down. From this perspective, the focus should be on the resources of an individual and not on the type of diseases or unhealthy habits the person has. Antonovsky wishes to avoid the dichotomy between ease and disease. Instead we should look upon this as a continuum. As a result, people always have some type of health even if they have a broken leg for example. From this perspective, new questions can be raised in my research. Instead of focusing on what leads to disease and illness, I will point out what develops and maintains health. My questions will be directed to
what creates health in human beings and what tools we have to keep moving towards the healthy pole of the continuum. An important question in that context is whether education can work as a tool for elderly people. Sense of Coherence (SOC) is a theory that may provide an answer to such salutogenic questions. It is comprised of three factors; comprehensibility, manageability and meaningfulness. Important salutogenic conclusions emphasize that people with strong SOC seem to be better able to deal with the stressors of everyday life. In the salutogenic approach there is an interplay between SOC, life experience and generalized resistance resources (GRRs). Those resources may be found within an individual or the environment. The resources are for instance; attitudes, self-efficacy, beliefs, knowledge, social support and cultural stability. Sanna Read et.al, researchers in ageing and health at the university of Jyväskylä in Finland have also found that GRRs are connected to the Sense of Coherence, which on the other hand, are related both to social and mental health in later life. Those resources help us to deal with the stressors in our everyday lives and prevent us from developing stress.

Research has shown that even if the health of elderly people is impaired, their wellbeing remains constant. According to the researchers, this was evidence for the existence of a plasticity between health and wellbeing. Professors Ulrich Wiesman and Hans-Joachim Hannich at the Institute for Medical Psychology at the University of Greifswald claim that the feeling of wellbeing may be an indicator and a factor for psychological adjustment, and it can be used as a way to assess successful ageing. In their research, they show that the SOC mediates the relationship between subjective wellbeing and GRRs; the strongest effects were found for self-efficacy, self-esteem, expected social support and activity levels. A conclusion according to Wiesmann and Hannich should be that the promotion of a strong Sense of Coherence is a principal aim of gerontological interventions.

With this text, I have explained from a salutogenic perspective how health can be interpreted, but also, how it may contribute to the concept of successful ageing, with its deficiency in explaining subjective criteria like subjective wellbeing. Psychological adaption can be determined by SOC and be explained through greater subjective wellbeing. As mentioned earlier, the focus of my research will be more on educational and didactical questions. A salutogenic perspective can give us new insights regarding the relationship between learning and health for older adults. Thus, it is interesting to investigate how education for elderly people may act as a factor to create and maintain health. Can it help elderly people to recognize and use general resistance resources which in turn promote and increase their Sense of Coherence? And is the pedagogical and didactical form of importance for this relationship?
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