With a Little Help from a … Machine. Digital Welfare Technology and Sustainable Human Welfare

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Abstract: *This article discusses the role of technology as a new political welfare strategy in relation to health care, health promotion, and human welfare. The transitions into the era of digital welfare and the implementation of welfare technologies alter previous notions of treatment, prevention, and health promotion. Self-monitoring chronic diseases can be regarded as empowering and augmenting feelings of autonomy and independence, but may also have negative implications due to reduced social encounters with health professionals. When the provision of public health care services is no longer solely in the hands of health professionals, the patient is designated greater responsibility. This means that with the introduction of digital welfare technologies, that is, telemedicine, human interaction between health professionals and patients is transformed, and in some cases is absent. Replacing man with machine creates a stronger focus on (self-) maintenance of physical health, diminishing social and mental aspects of health care. These hypotheses divide the article into three main parts. The first scrutinises policy documents behind the emergence of digital welfare technologies, and their presented affiliation with certain rationales of health, welfare, and socio-economy. Second, the article discusses health as a welfare strategy from a critical sociological perspective, pointing to how the introduction of new health technologies as a welfare strategy also forms a new concept of health and health promotion. The third section discusses how a new concept of not only welfare, but also of health, requires work on the population's mentality. This, I argue, leads to a strategy of governing citizens via discourses of promises and optimisation where the encouragement of virtue and responsibility is presented as a new sustainable strategy for human welfare. The overall conclusion of the article is that in the new strategies of digital welfare technologies are underpinned by new strategies of health care and health promotion, strategies of which we have yet to learn the sustainable effects on human welfare.*

Key words: *digital welfare technologies, sustainable human welfare, health care, self-technologies, governance, bio-citizens.*

Introduction

In 2013, the Danish government introduced a new strategy on welfare entitled Digital welfare. Empowerment, flexibility and efficiency (Danish Agency for Digitisation, 2013). This strategy aims at digitally transforming welfare services. The rationalities of digital welfare are to provide the right quality of health services at the right prize (Ibid., 2013). Apart from being a new governmental strategy, digital

welfare, I argue, can be said to impact the concept of welfare, as well as the concepts of health, health care, and health promotion. The latter is the focus of this article. As I aim to demonstrate, increasing the introduction of technology in welfare services modifies public health care by redistributing the responsibilities of health services from the provider (the health professional) to the receiver (the patient). Accordingly, the overall contribution of this article is to discuss the implications of digital welfare technologies in terms of how they affect understandings of health, health care, and health promotion, conjoined in the notion of human welfare. The first part of this article discusses policy perspectives and rationales on the interrelations between health, welfare and digital technology. The analysis in this section is built on policy documents from the Danish Agency for Digitisation, (2013); the WHO (1986); the Nordic Council of Ministers (2007); the Ministry of Internal Affairs and Health (2002); Report of the World Commission on environment and development: 'Our common future' (Brundtland, 1987); and the European Patients Forum (2015), as well as documents from a influential interest group and member of the authority of the Danish municipalities (KL, 2013). The second part of the article is informed by critical sociological perspectives on how quantifiable self-tracking practices subsidise new concepts of health, patient identities, and self-technologies (Loader, Hardey & Keeble, 2009; Lupton, 1995, 2013; Sanders et al, 2012; Siren & Knudsen, 2014; Wenger et al, 1996). This leads to a discussion on how self-monitoring practices give rise to new concepts of health promotion and prevention (Langstrup, 2013; Nordenfelt, 1993; Otto, 2009; Wackerhausen, 2005). In response to the introduction of more digital health technology in order to sustain a modern welfare system, this article further explores the risk of bypassing crucial social aspects of promoting a healthy life when managing patients' need for care at a distance.

As a continuation of the analyses on the policy rationales that underpin digital welfare technologies and critical sociological perspectives on how welfare strategies create new concepts of health self-technologies, the third section of this article turns to the implementation of digital welfare technologies and how to make citizens adhere to new understandings of health care and health promotion. When technology becomes an integral part of socio-economic

solutions in order to alleviate national expenses on health services, it can be seen as a consequence of a political, as well as technological, process striving for the sustainability of the welfare state (see, for example, The Danish Agency for Digitisation, 2013; The Danish Society of Engineers [IDA], 2012). Yet, in encouraging autonomy, independence and freedom, it can also be regarded as a way of governing and disciplining populations to become responsible, proactive citizens (Halse, 2009; Rose & Miller, 1992; Wright, 2009). Thus, this final part of the article discusses how to govern populations towards new understandings of promoting and sustaining a healthy life as well as a sustainable welfare society through political discourses and promises of optimisation.

1. Policy Documents on Welfare Technology, Health and Human Welfare

Introducing technology as a main provider of public social services naturally has impacts on individuals (Lupton, 2013a; Oudshoorn, 2011. In Denmark, digital welfare technologies were initially implemented to empower elderly people in order '[…] to live more autonomously and with greater quality of life' (The Danish Agency for Digitisation, 2013: p. 3). The main technologically changes have been achieved by implementing telemedicine, mostly to elderly citizens with chronic diseases. However, from 2012, telemedicine is targeted to also include other citizens in need of health services, for example, pregnant women with or without complications: 'The goal is that citizens should be able to receive high-quality and coherent patient care from a modern and efficient Danish healthcare system' (The Danish Agency for Digitisation, 2013: p. 8). In the general health sector, online bookings, patients' self-reported information, video interpretations, and videoconferencing were launched in 2014 and 2015. The objectives have been to reduce mistakes, to provide speedy access to medical consultation, and to ensure swift and effective coordination. Furthermore, 'This will save the patients from many frequent but simple check-ups at the hospital' (The Danish Agency for Digitisation, 2013: p. 8).

Within a broader field of nursing and care, welfare technologies have also been implemented to target citizens in need. For example,

[…] ceiling-mounted lifts (lifting and transfer aids); shower toilets; assistive devices for eating; and a project on 'better use of aids and appliances' in which municipal homecare and aid centers intensify their focus on training citizens in the use of aids and appliances' (The Danish Agency for Digitisation, 2013: p. 12).

It is the intention that these nationally implemented welfare technologies

[…] will empower citizens to be more self-reliant and improve their quality of life (The Danish Agency for Digitisation, 2013: p. 12).

An example of welfare technology is telemedicine, which has been developed in order to reduce physical encounters with doctors and nurses and, hence, to decrease the time and resources spent on the patient's transportation, as well as consultation meetings with health professionals. This is achieved by decentring clinical appointments and having 'virtual clinical encounters' (Langstrup et al, 2013) by taking care of the patient's needs at a teleconference. Another presumed positive aspect of telemedicine and other new digital welfare technologies is the perception of the emancipation of individuals who depend on a professional to talk, eat, shower, clean, move, and so on. Oudshoorn (2011) claims that the support of new technologies is often presented alongside with a conviction that technologies will not only solve societal problems but also improve lives. As such, digital technologies are introduced into settings of care and nursing as a way of reducing the provision of human services to improve lives and optimise everyday life practices. In other words, digital welfare technologies (i.e., telemedicine and technological aid devices) introduce a transformation where the health professionals are replaced by machines. Official policy documents support the introduction of digital welfare technologies and the purpose of technological solutions is presented as an empowering mechanism, aimed at creating flexibility and independence, as well as strengthening the individual citizen's ability to contribute and augmenting responsibility for the common good: 'Digital welfare solutions provide the individual citizen with better opportunities to contribute to welfare' (Danish Agency for Digitisation, 2013: p. 12). Contributions to welfare are thus connected to the empowered citizen or patient.

Outside of Denmark, the notion of 'empowering patients' is at the core of the European Patients' Forum (EPF). This umbrella organisation works with certain chronic disease groups at EU level and defines patient empowerment as follows:

To promote the development and implementation of policies, strategies and healthcare services that empower patients to be involved in the decision-making and management of their condition according to their preference, whilst raising awareness about their rights and responsibilities (European Patients Forum [EPF], 2015: p. 3).

In the EPF's report, patient empowerment is further defined as: '[…] a process through which people increase their capacity to draw on their personal resources in order to live well with chronic conditions in their daily life, as well as navigate the health care environment' (European Patients Forum [EPF], 2015: p. 4). The latter definition is in line with the World Health Organization's definition of health promotion: 'Health promotion is the process of enabling people to increase control over, and to improve, their health' (WHO, 1986). In the light of these two definitions, the introduction of welfare technologies to citizens and patients can be regarded as both empowering and health promoting since the reduction of physical encounters with doctors and nurses can strengthen individual autonomy and enable control over life processes.

However, from the same health promoting perspective, reducing social interaction, or removing it altogether, from treatment, prevention of disease, and health promoting initiatives is in opposition to prevailing understandings of what constitutes a healthy life. According to the WHO (1948) health is not only a matter of reducing symptoms or preventing diseases, but is also "[…] a state of complete physical, mental and social well-being" (WHO, 1948: p.100). This definition raises the issue of how to ensure a healthy life if the care provided, as a result of digital welfare technologies, focuses primarily on physical well-being. Or, as this article seeks to explore, what is a healthy life in the era of digital welfare technologies, and for whom is it healthy? Furthermore, what are the implications of digital welfare technologies in terms of taking care of health? and how are digital welfare technologies sustainable in terms of promoting a healthy life – physically, mentally and socially? These health-promoting dilemmas of the increased

role of technology in modern welfare form the basis of this article's discussions on digital welfare in relation to sustainable human welfare.

1.1 Sustainability, Digital Welfare and Neo-Liberalism

For many years, sustaining human welfare has been discussed in relation to the moral obligation of sustaining the environment and biodiversity, not least by the Brundtland Commission in 1987. This has led to environmental-economic models of governance in order to preserve the nature and, thereby, the future of human welfare. The focal point in these kinds of environmental welfare strategies is on natural resources or natural capital (Jespersen, 2001). Contemporary strategic welfare changes in the Danish public sector also strive to sustain welfare. However, in these strategies the focal point is not on natural resources, but on human resources or human capital. With regard to theories of health promotion, health and environment in conjunction form a social concept of health:

> *Health promotion continually challenges health policy with a socio-ecological perspective on how we organize health in our societies in a more sustainable manner. Its commitment to a social concept of health creates a special affinity to the concept of social sustainability* (Kickbusch, 2010: p. 11).

According to Kickbusch, it is how we organise health in our societies, and how closely we connect health to a social concept of health, that will determine social sustainability and, thereby, human welfare.

The work of ensuring human welfare through social sustainability requires innovative solutions that both accommodate the need for national savings, as well as the need to solve the problem of too little human capacity to accommodate the needs of social care and services. By scrutinising official policy documents on the implementation of digital welfare it becomes clear that the ambition of digital welfare strategies is to provide welfare services that will accommodate basic, human needs at a minimum cost and of a high quality (The Danish Agency for Digitisation, 2013: p. 3). With a shortage of humans, machine power has become more, or equally, valuable to manpower. Thus, replacing human capacities with technical remedies not only appears as a rationale of economic benefits, and an option for a pervasive

welfare problem, it also paves the way for a new model of social welfare through an extended number of welfare technologies.

In Denmark, the government has made an agreement with the Danish municipalities and the Danish regions as part of a new economy plan of reforming through digitalisation. The aim is to increase the population's self-reliance as well as to promote a greater potential for welfare effectiveness. This has resulted in a joint agreement on exploring and augmenting welfare-technologies within seven areas of focus, which disperse into three main areas: social services; health services; and education (The Danish Agency for Digitisation, 2013: p. 7). The government initiative of introducing a technocratic approach to a sustainable welfare system is based on a significant combination of scientific engineering and rational economic assessments of how to solve the problem of fewer financial means and higher human needs. From this, digital welfare seems to be the most innovative, profitable, evident and sustainable solution. Those in need, with biological abnormalities, defects, impairments, or inadequacies will continuously receive services. The main difference is that machines, rather than people, will increasingly provide state services and that the services offered are aimed at making the individuals become self-reliant and self-supportive. In other words, the aim is to minimise human based services and to diminish dependency on human-based state funded services.

1.2 Customising the Good Life

In the name of sustaining welfare, digital welfare strategies in general are adopting '[…] new information and communications technologies to organise and deliver health and social welfare services' (Loader, Hardey & Keeble, 2009: p. i). As mentioned earlier, digital welfare initially evolved as a response to the growing population of elderly citizens. However, in accordance with digital welfare technologies being dispersed to a broader section of the population, Loader, Hardey and Keeble (2009) argue that digital welfare ought to be seen, in the light of neo-liberal policies, as the implementation of welfare technologies to reinforce the individual's role in society, from being a part of the community to becoming a customer in the public welfare system (Loader, Hardey & Keeble, 2009: pp. 1–2). The aim of welfare technology is to increase individual autonomy and diminish the number of citizens who

are a burden to either society or to the family. This transforms the responsibility of health care from the institutional systems to the individual (Loader, Hardey & Keeble, 2009). These transformations of responsibility, I argue, point to the fact that strategies of digital welfare translate human welfare into a sense of independent, burden-free, and self-reliant human care. This can be said to stand in opposition to traditional health care in social welfare societies where the citizen in need is accepted on the premises of being dependent on state support to achieve quality of life, and tolerated despite being incapable of self-sufficiency.

Understanding human welfare from a health philosophical point of view, a good life is related to contemplations on what constitutes quality of life (Jensen, 1994). Quality of life is closely related to concepts of health. From a holistic concept of health, a good and healthy life is defined by capacities or possibilities of action that enable the individual to exert his or her life objectives and thereby to achieve quality of life (Nordenfelt, 1993; Wackerhausen, 2005). But a self-sufficient, goal-achieving individual does not alone constitute a healthy life, as the sustainability of a healthy life with high notions of quality of life only can be achieved through a social life with other individuals (Jensen, 1994). The point is that a crucial element within the holistic concept of health, and this understanding of quality of life, is that without social engagement or interaction the notion of quality of life is challenged. A healthy life and the perception of quality of life are intertwined with a sense of belonging to a community but, more importantly, interacting socially with other people. The sustainment of health and quality of life from this theoretical perspective is, thus, the opposite of independence: rather, it is interdependence. In the new strategies of digital welfare technology, the concepts of both independence and interdependence are found in descriptions of what kind of citizens are expected to respond positively to the implementation of health technologies. It is the citizens with resources who are eligible for further optimisation.

The changes to the role of the citizen as having plenty of resources, who is prone to optimisation, and expected to be responsible for their own health is one significant element of the new role of citizenship. Furthermore, as I unfold in the second part of this article, Lupton (2013a), Oudshoorn (2011),

and other social theorists also point to how it is the reinforcement and construction of different kinds of subjectivities, through engagement with health technologies, which is encouraged to reconceptualise their identities, selves, and understandings of health and quality of life.

2. Critical, Sociological Perspectives on Digital Welfare Technologies

2.1 The Impact of Social Support

When the patient takes over some of the health care function (i.e., monitoring blood pressure or blood glucose level) that previously required a regular visit to a health clinic, this impacts on prior understandings of social support for those in need of health care services. According to Oudshoorn (2011) and Pols (2012), telemedicine has created a hybridity as well as a transgression of physical boundaries, and a variability of new roles and identities in terms of computers representing caring-devices, patients becoming medical experts, and homes becoming clinics. As Oudshoorn initially sums up the tendency, 'The introduction of [these] new technological devices has major consequences for healthcare. The most drastic changes involve a transformation in the order of care' (Oudshoorn, 2011: p. 4). Historically, practicing healthcare outside hospitals and health clinics can, in some respects, be said to revert to previous practices when healthcare took place in private homes in where doctors would diagnose and treat patients (Vallgårda, 2002). Hence, healthcare entering private homes is not a new phenomenon. What Oudshoorn points to is a redefinition of the identity of the primary user of technology. As a consequence of the implementation of digital welfare technologies in the health care sector, doctors and nurses are no longer the primary operators of care as the patient is expected to play a more active role by learning how to maintaining their own health through health technologies (Oudshoorn, 2011).

In 2014, a research project by Siren and Knudsen on elderly citizens and digitalisation in Denmark concluded that the overall reception of digital IT-services had been positive among the elderly. However, the majority of elderly people regarded the lack of personal contact with the public sector to be a disadvantage (Siren & Knudsen, 2014). This is in line with finding from a British team of

health science researchers (Sanders et al, 2012) who concluded that there are several obstacles associated with elderly people's engagement in telecare and telemedicine, for example, jeopardising and giving up exiting services, as these are highly valued for both the patient and the health care professionals. These findings point to the notion of quality in human welfare and the way in which both patients and health professionals do not necessarily connote quality with being self-reliant or without personal contact. In relation to resistance towards using health technologies, Oudshoorn explains that:

> *One of the norms of care underlying their [the health professionals'] resistance towards telemedical centres was related to the relationship between doctor and patient: in order to provide good care to heart-failure patients, you have to know the patient. […] Knowing and seeing the patients is thus considered as important […]* (Oudshoorn, 2011: p. 82).

In other words, the introduction of health technologies can undermine health professionals' understandings of a good health practice.

As for the patient, the introduction of digital welfare technologies constructs what Lupton terms 'the digitally engaged patient' (Lupton, 2013a). This means that the implementation of digital welfare technologies provides new identities and roles for the patient who is assumed to be not only the consumer of welfare services, but is also to be able to be an actively engaged patient (Lupton, 2013a). This repositions health care, as well as the patient. As Lupton points out, '[…] patient engagement assume[s] a rational, emotionally disengaged "empowered" subject who is motivated and equipped with economic and cultural capital to engage in self-monitoring and self-care' (Lupton, 2013a: p. 262).

The notion of social isolation, loneliness, and concerns due to illness, may represent a source of resistance towards the use of health technologies. This is particularly the case for elderly people who, as a consequence of significant reductions of social interactions in the everyday life in addition to lower levels of energy, physical immobility, and as loss of partners and friends, can regard the imposed role of technologically self-managing and keeping track of their health as a dis-service. To comprehend the sense of dis-service, Wenger et al. (1996) emphasise that

for elderly citizens, '[…] the absence of loneliness and isolation is seen as important for a good quality of life' (Wenger et al., 1996: p. 334). Feelings of loneliness and isolation can be argued to belong to a broader societal issue, one that goes beyond the main tasks of health professionals. Still, from a health promoting point of view, feelings of loneliness and isolation when needing professional health care cannot be detached from treatment. Health theorists, such as Jensen (1994) and Wilkenson & Marmot (2003), draw attention to the fact that the experience of health and quality of life is closely related to social interaction and *inter*dependence. Wilkenson and Marmot explain: 'People who get less social and emotional support from others are more likely to experience less well-being, more depression, a greater risk of pregnancy complications and higher levels of disability from chronic diseases' (Wilkenson & Marmot, 2003: p. 22). Therefore, resistance towards the use of health technologies, as well as feelings of isolation and loneliness, must be regarded as potentially deteriorating health conditions, but can also be regarded as a negative response to the imperatives of digital health care that provides new roles and patient identities.

2.2 Resisting Objectification

It might be an obvious conclusion to explain resistance towards digital health technologies as a temporary phenomenon as, compared to the younger generations, the current generations of elderly citizens have been less engaged with the global digital revolution. As such, the resistance towards technological know-how or feeling comfortable with digital technologies may be solved when the current and more technologically skilled generation become elderly. However, as Lupton points out, with reference to Oudshoorn, young individuals may also 'resent, challenge or simply ignore the tasks and responsibilities demanded of them by telemedicine' and, therefore, resistance towards digital health technologies cannot be ascribed solely to incompetence, indifference, ignorance or technophobia (Lupton, 2013: p. 262).

Thus, from a health professional point of view, as well as from a patient point of view, resistance due to either lack of technical skills or feelings of loneliness cannot be assessed as a temporary or an age-specific phenomenon. Social aspects of health should be regarded as one of the fundamental determinants of a healthy life. From sociologist

to health promoters to epidemiologist, there is a long established acknowledgement of the impact of social support in sickness and in health: 'Social support and good social relations make an important contribution to health. Social support helps give people the emotional and practical resources they need' (Wilkenson & Marmot, 2003: p. 22). From this perspective, the motivations behind the digital welfare strategy (optimising health care through technology to ensure welfare and a high quality of public health care) has an underlying risk of undermining social aspects of health, and the experience of quality of life. When scrutinising health policy documents there appears, as exemplified above, to be a schism between a view of health as *resources*, and health as a measurable *object* for public health and welfare. However, as Sanders et al. (2012) recently concluded (based on preliminary findings of a large-scale research project on telehealth and telecare), in order to be a sustainable success the integration of technologies into health care units must always put people at the centre; not economic benefits. This conclusion further emphasises the importance of discussing the interrelations between digital welfare and perceptions of welfare and citizenship.

In order for the strategy of digital welfare technologies to transpose and merge with, or even transform, previous welfare ideals of social equality and universal systems for all, it naturally requires a profound implementation of a large number of technologies throughout the public sectors. But, to become a success it also requires another transformation; it requires a transformation in the public perception of how to conduct good, sustainable human welfare. Foucault (1988) explains this alteration and accommodation to new regulations as practicing self-technologies in order to handle new imperatives of health.

2.3 Welfare, Deficiencies, and Resources

Supporting, or entirely supplementing core services within the social, health and educational sectors with digital solutions is part of the Danish government strategy of rethinking welfare:

> *Digital welfare means new possibilities for everyone. It means that the individual citizen can become more actively involved in welfare services. Furthermore, the new digital solutions can lead to better quality of life, security and flexibility in everyday life* (The Danish Agency for Digitisation, 2013: p. 3).

In line with this policy formulation, the objectives of the implementation of digital welfare solutions at the level of the individual citizen are two-fold. First, this requires an alteration in the perception of 'the citizens in need' as someone who is passively receiving help to someone who is actively engaging in maintaining a good life. This, I argue, requires a new way of disciplining citizens into a new form of citizenship: a citizen who first and foremost is striving to become self-reliant. The second objective is that the digital welfare solutions are launched to improve existing conditions of quality of life in everyday life. This political ambition of seeking improvement or optimisation of human capital through technology requires changes in the public perception of good citizenship and an alteration to the premises for receiving health care services.

First, attention needs to be brought to the significant feature of the political strategy of digital welfare that focuses on activating and utilising the existing resources of the citizens: 'Digital solutions provide citizens the possibility to actively use the resources they already have' (The Danish Agency for Digitisation, 2013: p. 4). From a health promoting perspective, this represents a new rhetorical approach on how to ensure and promote good and productive citizenships through a strong and healthy life. Contemporary Danish research studies (i.e., From, 2012; Lau, 2015) on public health strategies and health initiatives in Danish municipalities point to the prevalence of an opposite tendency in the promotion of human welfare and health. They show that the majority of health political programmes have been established to prevent disease, dysfunctions, and lack of productivity by focusing on the identification of health related deficiencies and insufficiencies in order to repair, treat or improve these health deficiencies. This tendency is equally characteristic of the official health packages of the Danish Health and Medicine Authority (2014) that seek to identify risk factors and high-risk behaviour as a way of creating healthy settings.

In this way, and in the name of correcting potential ill-becoming behaviour, focusing health promotion and disease prevention on bodily insufficiencies can be said to subscribe to a biomedical approach of 'human deficit-finding' (From, 2012). Such prevention strategies are in line with cost-of-illness analyses. These analyses have pointed to

the importance of early identification of what can potentially cause illness, and subsequently become a welfare burden in terms of lost productivity and the increased need for state financed medical care (Indenrigs- og Sundhedsminsteriet [Department of Internal Affairs and Ministry of Health], 2007: pp. 7–8). According to this rationale, identifying human insufficiencies or incorrect health behaviour has been a valuable strategy, as opposed to working with existing resources.

In comparison to previous health promoting strategies, the introduction of health care via digital welfare technologies can thus be regarded as a representation of a new tendency, which to a larger degree is following the principles of the salutogenetic approach (Antonovsky, 2000). The strength of this approach is that it strives towards seeking to identify and put into play individual resources, allowing individuals able to overcome health challenges in their everyday life. Despite what appears to be a positive change in the approach to individuals' health, I argue that, in relation to digital welfare technologies, the salutogenetic approach inherently entails a moral dilemma. The point is that a pronounced emphasis on individual resources may, at an immediate level, represent a strengthening health strategy, but it may also encompass a moral dilemma if resources are overemphasised at the expense of the individual's and the health professionals' need for social contact in order to perform high-quality health care. Politically stressing individual resources and encouraging feelings of responsibility, as well as shaming those individuals who become a welfare burden, may, I argue, create a risk of undermining a need for help and social support in favour of being good citizen.

From a health and social-economic political perspective, developing a sense of responsibility is desirable as it leads to self-reliant and independent citizens. But when digital welfare strategies contain explicit objectives of reinforcing human resources in the name of sustainable human welfare, it is also necessary to regard it as a way of governing citizens by aspiring to certain self-technologies that will lead to particular forms of health behaviour. As Lupton (1995) points out, there are on-going discussions of how much the state has a right to interfere with the citizen's private sphere in creating beneficial health behaviour. As a consequence of digital welfare technology strategies of optimisation and promises

of a better life, a new kind of citizen can be said to see the light of day, require specific governance processes: the virtuous citizen (Halse, 2009). That is, the capable, self-reliant, moral and responsible citizen, engaged in the optimisation of taking care of his or her own health.

3. Governing Citizens. Political Discourses and Promises of Welfare Optimisation

In this final analytical section I intend to explore how digital welfare technologies encourage governing technologies to discipline populations to become responsible, proactive citizens (Halse, 2009; Rose & Miller, 1992; Wright, 2009) such that the productive and burden-free citizen becomes an explicit political health ideal that is embedded in discourses of citizenship and modern welfare technologies.

Creating the premises for fruitful health behaviour and shaping certain state-beneficial ways of leading life is the foundation of bio-politics and governmentality analyses (Dean, 2008; Foucault, 1994). From the starting point of health-sociological, the contemporary transformation into digital welfare can be said to impact on political ways of managing life through life-science techniques, referred to as governmental technologies. These are understood as '[…] the complex of mundane programmes, calculations, techniques, apparatuses, documents and procedures through which authorities seek to embody and give effect to governmental ambitions' (Rose & Miller, 1992: p. 175). In order for a new political rationale and governmental technologies to come into effect there is a need for expertise to translate the interests of the state into the everyday life of the population in such a way that they are experienced as free, personal choices (Rose & Miller, 1992: pp. 188–189).

From this understanding, I argue that the use of digital devices can be seen as self-regulating technologies practiced by the population under the impression of free choice. These practices correspond with the notion of responsibility to optimise life and society, as well as assimilation to the perception of how to achieve higher degrees of quality of life. As such, the mere existence and future success of digital welfare technologies needs to be examined in relation to the governance of what Halse refers to as 'the virtuous bio-citizen' (Halse, 2009). Bio-citizenship moves

on from the simple notion of citizenship as a legal status tied to eligibility and obligation, to view citizenship as constituting conditions of an individual's membership of a socio-political community (Halse, 2009). In the light of the analytical concept of bio-citizenship, the private life is regarded as a public matter and individual commitment must be aimed at the common good: 'The first obligation of the bio-citizen to the common good is to take personal responsibility for the physical care of oneself' (Halse, 2009: p. 51). The implementation of digital welfare technologies thus requires a specific way of governing the population into experiencing the health technologies as a better solution for receiving social support in health care and, thereby, a higher level of quality of life. This aspect of governing is conducted through discourses of virtue: 'Virtue discourses are sets of values, beliefs, practises and behaviour that establish regimes of truth and shape subjects and subjectivities by articulating and constructing particular behaviours and qualities as worthy, desirable and necessary virtues' (Halse, 2009: p. 47). Virtue discourses are thus creating truths and norms as well as forming individuals by communicating certain desirable and, not least, necessary behaviours and valuable qualities. In this way, digital welfare strategies produce bio-political messages by appealing to the responsibility of the virtuous bio-citizen.

3.1 Responsibilities of Welfare and the Bio-Citizen

As previously clarified, digital welfare solutions claim to improve existing conditions of quality of life in the everyday life of those in need of health care. A way of working with the individual's self-perception as a good citizen is through language and action (see Wright, 2009). In the light of bio-citizenship, I argue that political arguments as to how digital welfare solutions can improve quality of life in the everyday life are undertaken by providing a collective narrative of the fact that current the quality of life is insufficient or that it will deteriorate with time. This notion is facilitated by presenting the new political strategies as an inevitable consequence of cutting back on national spending. The population needs to be led towards the benefits of the new political actions — and, not least, feel part of it in a way that will convince them of both the benefits and the responsibilities expected from them as individuals. Therefore, language and discourses within the digital welfare strategies, as presented in this article's earlier

document analysis, operate at both the governmental level as well as speaking to directly to the citizens at an individual level. These new health technological solutions to maintaining welfare, I argue, are only functional if, and only if, the population also subscribe to them and regard the implementation of the new health technologies as profitable and not compromising quality of life.

Following the discussions on the rationales of the introduction of digital welfare technologies and the critical, sociological perspectives on replacing humans with machines, for patients in need of social support, three questions appear important. (1) How is it possible to introduce a political strategy of optimising welfare through health care technology in a context in which, until now, a significant aspect of health care, namely social interaction and social dependence, is undermined and even removed? (2) How is a strategy of optimising welfare through health care technology sold to the citizens as profitable for both society and the individuals? (3) How is it possible to implement a strategy of optimising welfare by introducing health care technologies and to promise, not a deterioration but a reinforcement of quality of life?

First, one must look at previous political rhetoric, which has successfully directed and centralised the issue of individual responsibility. Reinforcing discourses of responsibility functions as a way of maintaining welfare by advocating obtaining a healthy life by being a responsible citizen. The indication that health is a shared responsibility, and therefore a concern of citizens as well as government agencies, has been found in most contemporary national reports since the turn of the century, for example, the Danish report: 'Sund hele livet' (Healthy throughout Life) (2002). This report articulates shared responsibility by claiming that: 'To improve our health requires that we all recognise our responsibility and assume our part of the tasks' (Ministry of Internal Affairs and Health, 2002: p. 5 [own translation]). Such public health formulations not only operate by acknowledging general state responsibilities, but they are also clearly directed towards areas of responsibilities of the individuals, the public institutions, the workplace, the municipality, the state, and so on. The clear identification and distribution of roles is an important factor in shaping responsibilities at the individual level (From, 2012). The distinction

between the individual and public responsibility is subsequently presented as followed:

> *The individual is responsible for his own life. We all have the right to live life as we want. Making our own choices. But we must realize that our choices have consequences for ourselves and influence others - in a positive or negative direction'* (Ministry of Internal Affairs and Health, 2002: p. 6).

Explaining the consequences of making a (wrong) health choice thus becomes a pronounced strategy. It paves the way for specific self-technologies at an individual level as it invites the citizen to pay attention to right and wrong health choices and behaviour. Citizens have the right to live their lives as they choose, but not without a clear awareness of the potential costs — and, thereby, public condemnation if they become a burden. In this light, we must understand the emergence of digital welfare technologies and the current political efforts to make technologies a success in the general public perception. In this way, theoretically, the main change from human-provided social health services to machine-based health services become possible to implement as a political strategy because it represents the best choice but, more importantly, also a free choice.

In presenting the expected norm of behaviour (and implicitly also the less desired act of deviance and irresponsibility), the desired norm of action is camouflaged as free choices and common good, and operates at a self-disciplining level of striving for good citizenship (From, 2012). These principles of self-disciplining governance through perceived actions of being a responsible citizen explain how it is possible to replace human power with machines through a political claim of not losing, but gaining a greater degree of quality of life. As part of prevailing processes of subjectification, the responsible citizen has been trained to believe that in a welfare society choices have consequences. Choosing a lifestyle that causes one to become a welfare burden is not a desirable self-technology to perform. Therefore, I claim that to become a success, the prerequisite of the new digital welfare technologies in health care is the notion of trust in governmental strategies. This, I argue, is activated through political discourses aimed at the virtuous citizen, also subject to the notion of the modern citizen: modern citizens subject themselves to modern technologies and modern methods

and rationales of modern welfare governments. This explains those citizens that subscribe to, and practice, self-technologies in alignment with modern welfare strategies. Simultaneously, it also explains why resistance towards digital health technologies is perceived as problematic, undesirable and hoped to be a temporary phenomenon rather than an expression of practicing the right to freely choose how you prefer to receive health care. The subtext of the official policy documents behind the implementation of digital welfare technologies is clear as, when carefully read, it omits the possibility of a free choice. The reason for this is that the new welfare strategy is not only a strategy on how to improve and sustain welfare, it is also, although not explicitly communicated, a strategy on how to change perceptions of human welfare. The new digital welfare technologies are not presented as an individual choice but I argue, as an indisputable welfare necessity. This disregards the fact that health, treatment, disease prevention and health promotion have previously been considered the most sustainable physical, social and mental aspects of human welfare when carried out in the physical, face-to-face encounter between patient and health professional. It also disregards definitions of quality of life and quality of health care characterised by notions of social support, dependence and social interactions, and evidence that some individuals may simply prefer to receive health care without a little help from a machine.

4. Concluding Remarks

Today, welfare systems in Denmark and other European countries are undergoing radical, transformative changes:

> *The global financial crisis has turned well-balanced state budgets into deficits. While citizens continue to expect better and better public services, the public sector will have to manage with fewer employees in the years ahead. We must address these issues now* (The Danish Agency for Digitisation, 2013: p. 4).

Furthermore, EU regulated demands on reducing national debt, in combination with new demographic conditions and increasing unemployment, point to the necessity of redefining the role of the state as a provider of welfare services. Redefinitions of the welfare state have for decades politically been conducted through the principles of 'new public man-

agement' by outsourcing public services to private industries (Andersen, 2000). In 2007, a joint Nordic research programme concluded that, 'The Nordic welfare model is at a cross-road' (Nordic Council of Ministers, 2007: p. 9). From a socio-economic point of view, this cross-road is characterised by the fact that welfare states are challenged by a growing number of unproductive and care-needing elderly inhabitants, causing them to re-organise their welfare service supply. This has led to a still on-going political focus on engaging more citizens actively in the labour market and ensuring a prolonged activity level amongst the citizens in order to maintain the quality of welfare benefits (Nordic Council of Ministers, Copenhagen, 2007: p. 6). In addition, other research projects (i.e., Greve, 2013; Busse et al., 2010) have pointed to the increasing tendency of a larger proportion of citizens with chronic diseases, which overall suggests a necessary adjustment to the public sectors across the Nordic and EU-nations. Accordingly, recent political decisions have, in the name of sustaining welfare, concluded that the public sector must change its role, size and composition (Greve, 2013; WHO, 2009). The conclusions of these policy analyses have led to an emphasis on the potential for product development in healthcare, education, and care-giving in order to sustain the quality of the Nordic welfare model (Nordic Council of Ministers, Copenhagen, 2007: p. 7). In other words, in order to meet the current and future welfare challenges and sustain welfare, product development in the public sector has become a sustainable solution. This has subsequently led to the emergence of digital welfare, the focal point of this article, referring to the increased use of digital solutions and new technologies in the public sector. This can be regarded as a continuation of new public management approach through a marketisation of welfare services. However, one team of researchers (Dunleavy et al, 2005) claims that the era of new public management can increasingly be regarded as being overtaken by digital-era governance. The point is that the responsibility for welfare is increasingly handed over from the state to the citizens.

As discussed in this article, managing citizens through digital technologies inevitably has new impacts on ways of managing or governing citizens towards a healthy life. I argue that introducing digital technology as a new welfare strategy has a significant health component, and inherently creates a new health promotion strategy – although less explicated in the digital welfare strategy programme. The reason for this argument is that promoting health and sustaining life increasingly through the use of technology-based care diminishes the health services provided by a professional, and, thereby, also diminishes human interaction in health care. In essence, this reduction on human interaction has implications on strategies aimed at human care and, thereby, creates new strategies on how to sustain human welfare through technology. In this way, digital health care solutions become a new strategy for promoting health and the good life, as the transformations into the era of digital welfare also transforms the concept of health and health promotion. In some ways, these changes are providing an improvement for the patient as digital welfare technologies strengthen the citizens' resources and prevent and control diseases; this creates self-reliance, as well as empowering existing capacities in everyday life. On the other hand, I argue that a reduction of the broad, holistic concept of health, on which the contemporary concept of health promotion relies, may appear when health primarily becomes assessed in digits and through technology-based measurements of bodily parameters. Digital welfare technologies may undermine and, thereby, reinforce another need of professional care, namely the need for social interaction, proximity, and empathy in the health care provided. To answer the questions initially posed as to what health is and to whom, the point is that contradicting perceptions in relation to these questions prevail. Within these contradictory perceptions lies both an understanding of health as an object for life as well as an understanding of health as being a resource for life. This is expressed in the perception of the patient — as an object who needs instructions on how to self-monitor his or her health, or as a competent subject who is emotionally and, in the perception of some, irrationally in need of social support in order to experience control, empowerment and the capabilities of managing life. These are considerations that result from the implications of the strategy of digital welfare technologies that need further clarification in terms of how to provide sustainable health care and accommodate people-oriented perceptions of quality of life — with or without digital health and welfare technologies.

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