

Technological care.

Health professionals' discourses on technology in home-based services seen through a capability approach

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Abstract. This article is a contribution to the reflection upon what forms of assistive technologies societies should provide to users of home-based services. The material is collected from five focus group interviews conducted in Oslo in 2016 as part of a research project into assistive technologies with the purpose to gain knowledge of how such technologies were used in the home-based services. The interviews are analyzed on the basis of Martha Nussbaum's capability approach in order to see what forms of technologies influenced the users' capabilities. Thereafter, the technologies are classified as either public or private technologies in order to see what forms of capabilities the public care for and which technologies that are in the domain of private initiative. Based on the focus groups, it seems that public technologies are targeted at bodily health and integrity, while private technologies on communication and infrastructure, with some notable exceptions. The paper ends with discussions on the seemingly paradoxical situation that publicly supported technologies aim at the private sphere while the privately acquired technologies focus on public activities.

Keywords: Capability approach, assistive technologies, ethics, focus groups, ageing ethics.

1 Introduction

Life is technological and technologies are an integrated part of most people in several countries. Technologies promise – or rather humans promise technologies – to solve large social and political challenges. One such challenge is how to prepare for a future with an expanding ageing population with ensuing less capacity in the care and health systems. Much attention has been paid to question as to what are the most useful and

promising solutions [1, 2]; how to successfully deploy novel technologies [3]; and different perspectives on the ideals of active ageing and ageing at home [4]. However, the underlying values for the selection of useful and promising technologies and their relations to the ideals of the good life seems still to be an area where a tacit consensus reigns [5]. Dimensions of the good life is central to assessing the value of assistive technologies [6].

It is the ambition of this article to contribute to this discussion by observing what technologies health professional value in practice and their reasons for these valuations.

In the setting of creating ideas for and developing assistive technologies for older adults, five focus groups were conducted in order to map and discuss assistive technologies intended to, for or with older adults with mild cognitive impairments, but also technologies more broadly in daily life. Reading all the transcripts, one could get a sense of a differentiation between how the informants described the values and purposes of public assistive technologies and private leisure technologies on the one side and a range of different human values connected to such technologies on the other side. One obvious question this impression raises is to investigate possible connections between the different values and public or private technologies – or to see if themes arise through closer readings of such possible interconnections. In this article, we will look into what forms of care for older adults that are mediated through technologies. Care is an ambivalent term and phenomenon [7, 8]. Care might strengthen autonomy, but patient autonomy might conflict with utilitarian concerns – and conflict with the autonomy of the patient even though the caregiver has no such intention at all [9-11]. This opposition is not in any way linked uniquely to older adults, but is rather symptomatic of the way all humans are both social and independent beings [12]. Interaction with others entail that one is allowed to exercise one's free will within constraints set by the surroundings. One might even learn to integrate these constraints as a value system and find them to be meaningful – and thus in accordance with an autonomous act [13]. Thus, we will not make any judgements whether or not the views expressed by the health professionals are respectful of the subjects that they might have in mind or not, but merely investigate their own judgements of how technological solutions in the home affects the persons they encounter in their professional lives.

2 The Capability Approach

Mark Coeckelbergh [14] has suggested that and demonstrated how the capability approach might be useful and illuminating in assessing technologies in and for care of older adults. Amartya Sen and Martha Nussbaum developed the capability approach as an alternative to understanding human development [15]. Nussbaum and Sen promoted a view that should search for individuals' possibilities to live their lives as they themselves wanted to. They thereby suggest the capability approach to be an account that emphasizes both freedom and equality. Freedom to act based on basic capabilities, but also with an eye on how such freedoms are distributed in a society. Now, Sen and Nussbaum have developed the capability approach in different directions [12, 16]. Whereas Sen [17] see capabilities as conditions for realizing freedoms in a general sense,

Nussbaum [18] has concretized the capabilities to a list of entitlements that all humans need in order to live dignified lives. These actual or potential capabilities would be termed “functionings” in Sen’s version of the capability approach [16].

Using the capability approach in assessing care for older adults is an established approach [19-22] and care technologies [14, 23, 24]. According to Coeckelbergh, the connection of Nussbaum’s approach to the valuation of care lies in that the capability approach takes as a point of departure how social arrangements, such as care, affect well-being and agency:

From this perspective, the promise and goal of using information technology in elderly care can be framed as empowering people to live independently, to enjoy a higher quality of life, and to live their lives in dignity. This puts the emphasis on what people can do with the technology (the goal) rather than on the technology itself and its particular technical details [14]

An analysis of how technologies in care aim at fulfilling such basic entitlements, as suggested by Nussbaum, gives an indication of what the ethical issues or questions might be. Nussbaum’s list of central capabilities is,

1. Life: ‘Being able to live to the end of a human life of normal length; not dying prematurely, or before one’s life is so reduced as to be not worth living.’
2. Bodily health, including nourishment and shelter
3. Bodily integrity: free movement, freedom from sexual assault and violence, having opportunities for sexual satisfaction
4. Being able to use your senses, imagination, and thought; experiencing and producing culture, freedom of expression and freedom of religion
5. Emotions: being able to have attachments to things and people
6. Practical reason: being able to form a conception of the good and engage in critical reflection about the planning of one’s life
7. Affiliation:
 - a. being able to live with and toward others, imagine the other, and respect the other
 - b. having the social bases of self-respect and being able to be treated as a dignified being
8. Other species: being able to live with concern to animals, plants and nature
9. Play: being able to laugh, to play, to enjoy recreational activities
10. Control over one’s environment:
 - a. political choice and participation,
 - b. being able to hold property, being able to work as a human being in mutual recognition (After Coeckelbergh [14], but with modifications based on Nussbaum [18]).

Nussbaum explicitly underlines that this list is open-ended, i.e. that additional items could be added, but also that the specifications should be made to local contexts.

Seen from the point of view of Nussbaum’s capability approach, no one should live a life under a minimum of any of the suggested capabilities. The goal of analyzing the

private technologies in relation to the public assistive technologies is based on a thought to open up for more reflection on what forms of capabilities (in Nussbaum's sense) that are perceived to be in the public domain, or under public responsibility and which ones are placed in the private domain. The reason for this is that there is still an open discussion concerning what forms of technologies should be prioritized in care for elderly in their own homes – and this debate should include a reflection on values [25].

3 Methods

In the autumn 2016, a total of seven researchers conducted five focus groups consisting of different health care professionals working in or close to the home-based services. All participants signed a letter of consent to take part in the focus group and for the material to be used in research. Each interview had two interviewers. One interview had only two respondents, whereas the remaining four had four, five, six and seven participants. All interviews were recorded digitally, transcribed and read through by the interviewers for approval.

We started the interviews with presentation of ourselves and the purpose of the study. The purpose of the study was presented as 1) how they work with assistive technologies with users with mild memory problems, 2) how they assess needs and meet the users' needs for technology as support in their daily lives, and 3) how they cooperate with others (such as users, next of kin, developers or others) related to assistive technologies. We did not pose any direct questions regarding other technologies, but the respondents themselves mentioned these several times.

We imported the word transcripts into Nvivo 11 and created the nodes according to Nussbaum's list of capabilities and specified the nodes according to the usage in Nussbaum (2007) where for example "Bodily health" is understood as "good health", "reproductive health", "nourishment" and "shelter" in order to see if there were dimensions of the capabilities that predominated over others. We found mentions of different technologies and whether these could be understood to be private and public. This amounts to a type of analysis closely related to thematic analysis committed to a realist epistemology conducted in a deductive manner. Such a manner of deductive qualitative research can be used when addressing issues that are set prior to the investigation itself by some external institution (often a funding body) to address political priorities [26].

First, we chose to see what form of capabilities the health professionals mentioned regarding their experiences in the home based services in general. This means looking at all the coding for different capabilities in the interviews regardless of technology. This approach was chosen because it provided an overview of capabilities first and technologies to support such capabilities second. This approach is the correct direction for investigation of capabilities-preserving measures since it implies taking the health professionals' experiences of care-recipients' capabilities as the primary object of study rather than the technologies.

This approach suggests a combination of a deductive approach with the division of private and public and with the capabilities' list and an inductive approach with no preconfigured list of technologies. Such a combination of a deductive frame with sets

of rules (the capabilities) and an attention towards a range of unstructured phenomena that should be accounted for by the deductive frame has been termed abduction, and is often used for generating hypotheses [27].

The division of private and public is not in any way set in stone, but is cultural specific and has different meanings in different contexts [28, 29]. However, in the current context no respondents raised the issue that they were unsure of whether some device was privately owned or something acquired through the public aid system. The content of the division between private and public is in our case consequently based on induction. Private technologies are further *market technologies*, and the market is understood as private as it does not affect the whole community of citizens even though it is accessible to all, which are two possible criteria for distinguishing between the private and the public [30].

Furthermore, we worked inductively in our approach to the difference between assistive technologies and technologies in general. This means that we did not provide any form of definition or other guiding questions as to how to delineate between the two. Our focus has been more generally on the difference between private and public technologies regardless of their intended purpose in order to study the valuation of the different solutions.

Since focus group discussions as a method is more related to eliciting different perspectives and exchanging experiences and build upon these [31], we will not try to summarize what the groups meant, but rather use the material as the outcome of interactive discussions and not differentiate between consensus positions and outlier positions. It is valuable to collect all forms of community health care workers' experiences, and we as researchers and interviewers do not, in the focus groups setting, have any direct tools to validate or invalidate the utterances. This being said, the findings in the focus groups are not characterized by conflict, but by a range of nuances in their opinions over the potentials and values of a variety of technological solutions.

4 Results

In the following, we will explicate what the informants said concerning the different capabilities that were positively or negatively impacted in the daily lives of older adults. We will relate these impacts to technologies where there is support to do this in the material.¹

4.1 Life

Being able to live to the end of a human life of normal length; not dying prematurely, or before one's life is so reduced as to be not worth living

In a strict reading of the transcript, which we hold to be a virtue, the issue of quality of life was only discussed in one group.

¹ What is meant by "technology" is not defined in this paper. Rather, we take as a point of departure what the informants classify as technologies.

R 23: Maybe one should think about the quality of life for people if it is the robots and such stuff. That they get even more isolated ...²

In this utterance, in the discussion of possible future assistive technologies, R 23 states that loneliness is already a problem and introduction of further advanced technologies is a threat to a life worth living.

4.2 Bodily health, including nourishment and shelter

The large majority of utterances here addressed mainly nourishment and shelter and not bodily health narrowly defined.

Bodily health

Bodily health, and possible changes in health condition, came across as belonging to the domain of professional discretion. Physical visits from care workers and health professional and continued and regular observation of patient behavior and talk could indicate changes in health condition that create the foundation for mastery of technologies.

Technologies that could improve the bodily health of older adults were talked about as medical technologies measuring for example heart rhythm and blood pressure and transmitting these to the health professionals through the internet. Other examples were installations in the bathroom that could facilitate for using the shower and the toilet and through such installations manage maintain personal hygiene and normal bodily functions without aid. Neither of these are classified as assistive technologies in the Norwegian nomenclature, but rather as medical technologies and assistive devices.³ The application of novel assistive technologies that might improve health was connected to video communication training for older adult. Connected to a video camera or a 3D depth sensor producing images training and fitness in order to strengthen muscles and balance could be distributed more rationally and conducted with high quality. A comment to this position regarded who should decide and observe the extent to which the users should be challenged to perform more and more advanced exercises.

Nourishment

Nourishment was the most discussed capability in the focus groups. It is necessary here to remind that not wanting to eat for any purpose does not mean that one lacks access to food or proper nourishment. It might well be that a refusal to eat (properly) might be the result of a voluntary decision or an indication of some underlying issue. There is

² The originals are in Norwegian and are translated by the authors.

³ Seemingly, the notion of assistive technologies in the literature carries with it a relation to automation or information and communication technology that is absent from the notion of home aids 1. Haux, R., Koch, S., Lovell, N.H., Marschollek, M., Nakashima, N., Wolf, K.H.: Health-Enabling and Ambient Assistive Technologies: Past, Present, Future. *Yearb Med Inform Suppl 1*, S76-91 (2016)

furthermore a range of other concerns related to food and eating and an instrumental focus on food as nourishment seems to conflict with other capabilities. Consequently, we mention briefly some of these tensions here. Many persons have the sensation that the meal should also be a social event, and the lack of sociability might influence the decision to eat. Furthermore, several persons attached value to preparing meals, and the lack of ability to do so might affect eating and nourishment. However, if or when such factors influence nourishment, it would seem preferable from every perspective to try to remedy the situation so that a person becomes adequately nourished.

R22: ... we cooperate with them in ordering food in order for them to present proposals and ideas – and nourishment is very important. Many seldom leave the home. They don't know what is in the stores. So we try to take the users with us when we come to their homes ...

As, stated by R22, the planning of shopping might also be a way of activation and mental training and going out shopping can be a way of getting out. Another informant told us how cooking might be a field for versatile training.

The process of acquiring food is experienced as burdensome for older adults by several informants, and some see it as a positive development that one can use tablets, computers or phones to order food online – which is now becoming an increasingly frequent way of ordering food. However, others place the purchase of food in stores as an important element for the feeling of coping and as influencing what people actually eat – and this will be addressed under capability 3, free movement.

Some informants told stories of how cognitive decline also affected the ability to be adequately nourished: some forgot that they had eaten or that they had a full refrigerator, others forgot that they had not eaten or not had food. No technological solutions were connected to such discoveries, but some related this to the need for spending more time with the users.

One of the barriers to buying food for persons in the home-based services was how to pay for the groceries. Some told that they could only use cash or shop if the person in question had a client account in a shop. They were not allowed to use debit or credit cards, and in some instances, this was connected to the trouble that some have in remembering pin codes.

All informants who discussed the social aspect of eating recognized this as important, and discussed possible solutions to eating alone: new forms of co-habitation, tours to senior centers, robot companions and video communication. Of these, only the robot eating-companions were valued negatively.

One theme discussed extensively in two of the groups regarding cooking was the stove timer. Stove timers come in several varieties, but the forms discussed were either a timer and/or a temperature sensor. There was a general expression that it was a useful aid, but with important shortcomings, which could affect negatively cooking activities for people with cognitive decline or impairment. In terms of safety and security, the most important weakness is that the stove timer does not react when paper, plastic or cloth is placed on the stove. Whereas the main limitation regarding cooking activities is that the sensor on stove guard might turn off the stove if a kettle is placed so that the

heat element is not totally covered. Furthermore, the stove timer will always turn off the stove after a pre-set time regardless of what one is cooking – and leave the person with unfinished food. Here, nourishment might be imperiled by safe living conditions.

Adequate shelter

In addition to discussion regarding fire safety based on stove guards discussed above, the main theme for shelter was locks, keys and entrance into apartments. The informants provided a range of idiosyncratic ad hoc solutions from their practice, such as messages to the residents written on the door “Do not let strangers in”, to key exchanges, central key depot, video calling system, calling system in the form of a telephone etc. One informant provided an example of a resident who got locked out, another of a resident that could not hear the doorbell, and a third an example of a person running down all the stairs to open; being able to exit and enter ones domicile is of course also central for maintaining a social life and keeping unwanted visitors out. The different forms of exchange of keys between professionals in the home-based services was seen upon with some unease, since the residents lacked control over who entered at what time, logistics between different types of home assistance, and a risk for keys being lost – which is stressful for residents and time-consuming for the workers since it entails searching and getting permissions for making new copies. When discussing different forms of electronic locks, one group had positive experiences with automated doors, but introducing codes was viewed with some hesitation in another group since they perceived it to involve some kind of chip and also with possible administrative procedures for recoding.

Some other themes concerning adequate housing departed from reflections around falls. Here, one informant talked about the carpets people had in their homes as a risk factor, another of how a resident stayed in the dark around the clock since he did not have the energy to operate the wall mounted switches and fell, and a third about the fear of fire connected to electronic installations that caused residents to pull all plugs, which of course affects electronic aids and consumer electronics. A central theme was the safety alarm, a body-worn alarm button around the neck or wrist connected to the phone system and that one can push and an alarm reaches the services. As a rule, the safety alarm was discussed as a positive aid, but some talked of over-use and others talked about non-use due to nervousness, anxiety or social factors.

4.3 Bodily integrity

Being able to move freely from place to place; to be secure against violent assault, including sexual assault and domestic violence; having opportunities for sexual satisfaction and for choice in matters of reproduction.

Freedom of movement was brought up in two different contexts, but with a similar background. The first context was that of GPS locators. GPS locators were presented in four of the groups as a condition for being able to move around in the city and in nature, and one informant said that his/her client experienced the possession and the use of the GPS locators as contributing to a feeling of safety. In a different group, the

GPS was perceived positively in itself and for the user, but it could create administrative difficulties and furthermore contribute to an increased inequality since the municipality gave GPS locators to those with next-of-kin who could receive an eventual alarm. This might deteriorate the relative level of service given to those without next-of-kin nearby since they do not qualify for a service that could contribute to freedom of movement at the same time as they are likely to receive less visits and assistance from their family. A third position was that GPS locators are given to people who are too ill to really benefit from the possible freedom the tracker could provide, but is mainly used as a location tool in case a person wanders off rather than as a safety measure against getting lost. One informant made the connection between the ability to move around safely from a GPS and going to the shop, which is the second context. Being able to move freely around relates to having a social life. In addition to the fear of getting lost, one informant mentioned how public transportation is designed such that it is hard to enter if one is dependent on walking aids. Here, assistive technology becomes an obstacle to social life since walking aids are constructed and performed in a way that make them difficult to combine with the designs and constructions of public trams and busses. This combination serves to exclude some older adults.

4.4 Senses, Imagination, and Thought

Being able to use your senses, imagination, and thought; experiencing and producing culture, freedom of expression and freedom of religion

The informants discussed this aspect only in two brief instances in the material. The first context is that of a female blogger aged 92 years who uses her blog to tell others about the experiences of being elderly. She is talked about with enthusiasm by one informant and others join the chorus. The second context is that of audio books on CDs. Here, one informant tells about the experience she/he had in trying to obtain a portable CD player for a woman. Because of the new streaming technology, the municipal assistive technology supplier had discontinued such products which the woman knew how to operate and risked to be deprived of cultural experiences. However, the supplier managed to find one “laying around in the corner of the storage” so this case ended happily.

4.5 Emotions

Being able to have attachments to things and people outside ourselves

The most important device mentioned as the source of connection with the outside world and with which the elderly had the strongest attachment was the television. A common frustration in this context is the complexity of the remote controls. The importance of television is so strong that one informant even suggested that patients complaining that television is boring really had lost mastery over the remote control.

Several informants raised the issues of solitude and loneliness in the focus groups. The sensation of being isolated from the outside world seems to deprive many older adults from the possibility to create attachments. One issue raised by many informants was how the elderly sought social contact from people in the home-based services, and

the put forward the view that technologies could not compensate for this contact. As examples, the informants mentioned automatic pill dispensers and robot vacuum cleaners. Positive actions against solitude consisted in organizing trips and social eating. However, there are some mentions, which will also be addressed under Affiliation: Live with and towards others, that seems to run counter to the view that technologies cannot help against loneliness. We encountered informants saying that iPads were one way elderly kept in touch with others and stayed informed. Skype and video communication was both experienced and imagined as useful tools in creating bonds between people.

4.6 Practical reason

Being able to form a conception of the good and to engage in critical reflection about the planning of one's life.

We could not find that this theme was raised in the focus groups.

4.7 Affiliation

Being able to live with and toward others

Only one of the subcategories, being able to live with and toward others, was identified in the material. As mentioned above, in the few mentions of living with and towards others, skype and video communication plays a central part. One interviewer raises the issue of using such technologies to create a virtual social club for older adults, and the respondents seem to accept that this could be a viable route forward. Skype seems to be gradually replacing the telephone as means of communication. In a few instances, skype seems to be included in tablets provided by the municipality as a part of a calendar function. On the opposite side, breakdown of television and radio – or the loss of capacity to operate them – was also raised as loss of sociality by one informant. She/he also connected such loss of capacity to loss of self-respect, which is the theme in Nussbaum's next capability. Here, we should also signal that the theme of updates, charging, and product malfunctioning is raised by some in connection to such tablets.

Treated as a dignified being and having the social bases of self-respect

Here, we combine these two items since the material suggests that these are highly interlinked. Technologies are social products: they are created with a specific group of users in mind. Clearly, several of the technologies used by older adults, both commercial and those issued by the home-based services might possibly affect a person's self-respect. This issue was raised in connection with different cooking activities and the stove timers, remote controls and operating doors and locks. Failure in mastery of daily tasks, such as remembering appointments, knowing what day it is and what time of day, and organizing oneself seems to the informants to affect the self-respect of older adults. Some informants said that such failure could result in persons becoming confused, which they portrayed as negative. One device mentioned by three different informants in two different locations was a calendar with photos that one might use to have such

overview. One informant even talked about having this calendar connected to the television. However, when asked, one group was able to tell us how the content entered the calendar while a different group had no knowledge of this process. Such a difference in mastery of technologies provided by the home-based services is not in any way a surprise, but should be kept in mind.

The fine line between activation of persons as a tool for increasing their self-esteem and leaving them in a vulnerable position was raised by one informant. The theme was a reminder system for persons with cognitive impairment or decline. While useful in general, one informant stressed that such a system might give a person increased mastery in everyday life on the condition that she or he understands the concept of a reminder system- If the person does not grasp this concept, such a system might create a false sense of security for the services, the next-of-kin and the person in question. In addition, the reminder system can be a cause for worries and thus making the person even more vulnerable.

4.8 Other species

Being able to live with concern for and in relation to animals, plants, and the world of nature

Only in one group, one informant mentioned a new assisted living facility in Hammerfest where they had plants and animals in what the informant referred to as a “garden of senses”.

4.9 Play

Being able to laugh, to play, to enjoy recreational activities

We could not find that this theme was raised in the focus groups.

4.10 Control over One’s Environment

Political

Being able to participate effectively in political choices that govern one’s life; having the right of political participation, protections of free speech and association.

Under this theme, we arranged discussions relating to surveillance, a theme often associated with technologies and especially GPS, since surveillance can be seen as an obstacle to free political participation [32]. Now, the discussions regarding surveillance related to GPS tracking only in one dialogue. In the remaining talk, surveillance was related to the presence of personnel from the home-based services and to potential mass measuring of health data in the homes.

Material

Being able to hold property (both land and movable goods), and having property rights on an equal basis with others

With control over the material environment in the current discussions, I identified to main themes: money and unwarranted entry. In one instance, there was a discussion of

how people themselves needed to decide on spending money on technologies not covered by the public or remain without a service the health professionals saw as useful, and the informants believed that the users would need to pay even out of their own pocket in the future. Unrelated to this, was a discussion on how the home-based services could assist persons with paying for their goods and services. Paper money seems to be the easiest monetary infrastructure for the services since informants said that are not allowed to use the users' cards. Pin codes and online banking had advantages as long as the user remained cognitively unimpaired and had continuous use of these, but informants gave examples that these became barriers to coping.

When discussing different versions of locks and door controls, the informants separated between the feeling of control and actual control. Control over exit and entry into one's home is both a subjective state of mind and an objective affair. Subjectively, one's cognitive state influences feelings of vulnerability and might be both an obstacle to and a driver for giving access to unknown persons – regardless of these are part of the home-based services or not. Reversely, also the persons employed in the home-based services had reservations against how easy they gained access to other people's personal space. One informant also raised the issue that not being in a state of constant waiting for health personnel that do not keep their appointments also increases the feeling of control.

5 Discussion

Nussbaum and Sen's capability approach focuses on the conditions for the good life and the distributive concerns of these conditions. From the analysis above, technologies largely affect such conditions both negatively and positively. On a basic and concrete level, one can identify how devices as disparate as iPads and digital door locks might positively affect social encounters, but they also depend on a specific configuration of the services with updates, passwords, pin codes that might also constitute an obstacle to realize other capabilities such as adequate shelter or living with and towards others. A very interesting finding is how technologies seem to play a part in transforming the way we relate to each other, as the examples provided by Skype connections seen as valuable and senior blogging as a way of providing new voices into the semi-public blogosphere. Arie Rip and René Kemp [33] make the point that technologies and societal norms co-evolve and that this interaction is a fruitful approach rather than technological determinism, the view that technology will take society in one pre-determined direction. Closer studies of how technologies change the actual social reality of older adults is needed [7, 34] and Coeckelbergh's contribution discussed above does so only hypothetically.

5.1 Technologies and capabilities

Returning to the initial question behind this article regarding the relationships between the different capabilities and whether these relate to publicly funded technologies

through the home-based services or to private technologies, we would suggest that there are some patterns. Bodily health understood as physical health relate uniquely to public technologies. Whereas discussions regarding nourishment pertained both to public and private technologies where the public technologies typically referred to stove guards and the private technologies concerned monetary technologies, kettles or microwaves, i.e. either the means of procuring or preparing nourishments. Now the stove timers can also be understood as a part of adequate shelter since they should protect against fires. Likewise social alarms can be considered as an element of adequate shelter since they reduce the risk of accidents in homes not because the likelihood becomes less, but because the consequences might be less severe. With the exception of proper illumination technologies, private technologies for adequate shelter concern the border or the threshold between public and private spaces, namely keys, locks and doors. The informants relate bodily integrity, understood primarily as freedom of movement, uniquely to public technologies such as the GPS locator.⁴ It is further of interest that the informants related cooking and stove timers to safety as older adults themselves tend to relate cooking to self-respect [6].

For what regards Nussbaum's relational and emotional capabilities, they seem overwhelmingly connected to private technologies with a clear exception for novel video communication technologies implemented in some parts of the home-based services. Television, radio, skype and the blogger are all instances of private technologies providing fun, connections, and creativity for older adults. Whereas they relate public technologies to how these fail to provide dignity or might lead to increased isolation.

When it comes to the capability of relating to nature, animals and plants, given that the focus was the home, it is unsurprising that nature does not play a part. However, as 40 % of the Norwegian population hold animals as pets [35], and this number falls below 10 % for older adults [36], this area might be explored; especially as pets have positive effects on well-being [37]. Experiments with digital pets have produced varied results, but with a positive tendency [7, 38, 39].

The informants saw some technologies as (experienced as) possible surveillance technologies, but they also told about discrepancies between the way society at large handles money transfers and the situation in the home-based services. There seems to be a gap between the fully digitalized current money exchange and the paper money practice in parts of the home-based services, and furthermore a need for systems less based on passwords and pin codes.

From this argument on conclusion could be that the home-based services should provide wider selection of technologies (or abstain from some). However, Nussbaum [40] further writes that there are three types of capabilities: basic, internal and combined (or combined) capabilities. The most basic are the capabilities for seeing and hearing, while the internal capabilities are "mature conditions of readiness" [40], and the combined capabilities is the above quoted list. Nussbaum's point is that if people have internal capabilities that can flourish through access to the combined capabilities, then they should have reasonable access to these. de Maagt and Robeyns [21] build upon

⁴ Even though GPS locators might be privately acquired, the informants discussed GPS locating systems as part of the municipal care system.

Nussbaum and argue that lack of potential for internal capabilities, such as is the case for persons with severe cognitive decline, means that access to a range of the combined capabilities will not provide them with an increased quality of life. They state that, “In fact, we may harm these persons since they may be given options with potential harmful outcomes, without having the internal capabilities for responsible choice” [21]. However, the home-based service do not only provide technologies for persons with highly reduced internal capabilities, but also to persons with other sets of needs. Furthermore, the ambition of the health authorities is that assistive technologies shall become an integrated part of all home-based services – regardless of age – by 2020 in Norway [41].

5.2 Private and public realms of technologies

When considering the scope of the publicly provided assistive technologies compared to the private technologies of the users, the contrast between the attention to the body and the home as a containing device among the publicly available technologies versus the focus on communication and infrastructure among the private technologies is striking. This suggests a politics of old age where the private sphere has become the domain for public care and, conversely, that participation in the public sphere is left to private initiative. In a fairness perspective, active participation in society and in democratic processes such as debates and elections presupposes active facilitation by the state to reach groups and individuals who have different preconditions for participation than the majority. Use of digital communication technologies declines with age, and ageing users wish for more training [42]. Furthermore, as discussed above, several of the new food, purchasing and social services presuppose digital competences that users in the home-based services often lack, according to the respondents. Several care providers have experimented with distribution of tablets that seem to work well for facile tasks [43], but they pose challenges for more diversified actions [44] and require staff to help with updates and maintenance [6]. Such insights suggest that active participation presupposes more than a single device and that mastery does not follow with the device.

The role of the state in providing for individuals’ needs is a central element in political philosophy. If one applies a perspective from Nozick and his arguments for a minimal state [45], then the public domain becomes reduced to enforcement of contracts and policing. In such a system of thought, the state has no obligation towards providing for public participation and every state action should be kept at a minimum. From a dialectical perspective, needs are seen as dependent on and constituted by the actual social forms to meet these needs. Personal needs, individual needs, human needs always take some form, and we cannot but meet them in some form. These forms are on one level a matter of choice [46].

Seen from a capability perspective, the central notion of equality refers to what Sen has called equality of basic capabilities in reaching what individuals see as good in their lives [47]. Good health and bodily safety are central to what is usually seen as good in peoples’ lives. One reason that Sen seems reluctant to define good health and bodily safety as basic capabilities such as Nussbaum does, is that some people voluntarily expose themselves to situations where they trade off health or safety in the search for other goals. Such goals can be helping others or one’s own amusement [12]. Both Sen’s

and Nussbaum approaches to equality of capabilities have clearer affinities with the dialectical notion of needs fulfilment than with the libertarian approach. What is the core of the matter is that freedom to realize what one conceives of as good cannot be decided by others for an individual based on the assumed preferences of that individual due to an imagined group identity [48]. An individual cannot be assumed to share the common norms of one's group – and especially so if this assumption affects the individual's access to pursue what is good [49]. Seen from the perspective of negative freedoms, the responsibility of a care providing system becomes that of not barring access to individual realisation of goods by introducing assistive technologies [50]. Seen from the perspective of positive freedom, the responsibility of a care providing system becomes that of facilitating for giving access to individual realisation of goods by introducing assistive technologies.

The justification of aiming at publicly funded assistive technologies limited to the private sphere seems to depend upon an individual's internal capabilities. In situations where an individual lacks this potential, safety and bodily integrity are important. In other cases, to limit the public provision of assistive technologies to shelter, bodily integrity and nourishment might lack justification if they negatively affect other capabilities. The case of the GPS locator seems to be the only instance where the informants addressed lacking internal capabilities of a person as contributing to a possible loss of safety.

In terms of the practice of prioritizing assistive technologies and how care systems should allocate their resources, the view from negative freedom suggests that solutions that obstruct a person from realising one's capabilities should be avoided. Examples of such solutions for some persons in the current material were stove timers, reminder systems and different forms of new locks or other access controls.

What is the right action to pursue? Wareham [51] argues for an ethic of ageing which takes as a point of departure the situation of an ageing person and investigates the ethical issues facing this person as an ageing person. This position leaves open the definition of ageing, and there exists a vocal debate that spans from whether ageing is valuable in itself [52] or a condition to be altered or annihilated through medical research [53]. As indicated in the material, and as supported by Stahl and Coeckelbergh [54], novel technologies change or impact on how we create, uphold and end meaningful relations with our surroundings. Whether or not technological solutions will change dramatically the way societies value old age remains an open question, but this value is connected to social norms [55], and novel evaluations of age groups makes up a part of slow changes in history [56]. However, for the immediate and near future few such deep changes in the perception of ageing seems unlikely. What seems to constitute some of the respondents' valuation of communication devices might be understood as transforming the older adults from being frail and needy and towards being masters of their life-situation. On the contrary, one can see how technologies related to the body and to a physical place seem to be less valued. This dichotomy resonates well with how Oudshoorn [34] understand the transformation of care in assistive technologies where the physical aspect of care is seen as a stage to be overcome and replaced by novel devices. Accordingly, there seems to be instances of an unreflexive normative ideal of ageing as a condition to be altered towards mastery.

Seen from the perspective of positive freedoms, there is a vast range of possible technological solutions that enhance the realisation of different capabilities. From the perspective of citizenship, the main lacunae are in solutions that facilitate for social participation. A different perspective to this question would be to look at the private sphere as intimate, and that the public ought to remain from interfering – or even facilitating for – changes in peoples’ private spheres [30].

6 Conclusion

This article contributes to the discussion of how we can theorize and discuss priorities in home-based care. Such prioritization has a moral component. By addressing capabilities as constitutive of a good life, priorities can be separated from each other with reference to their capabilities.

There are some limitations to the generalizability of this study. The first consists in that the researchers did not address capabilities directly and these are just searched for at a later stage in the material so there was no way of validating the findings with the users in context. However, when conducting interviews it might be beneficial not to address the theoretical terms directly since these might create a power imbalance between the researcher and the respondents. The second, and maybe most important limitation, is the context of the interviews. We conducted the interviews in Oslo, Norway, a medium size city in European context in a country where the arrangement of assistive technologies is tightly connected to the health services rather than to individual responsibilities or to social work as can be the case in other European countries [57].

Should these considerations in any way influence the way in which we envisage technologies for living at home for a longer time? On the one side, there are technologies and solutions intimately connected to the municipality responsibility for the safety of their citizens. If some of these technologies were to be removed, then such a removal would have to be based in changes in legislation, i.e. that health professionals are absolved from parts of their legal duties towards their care recipients. As becomes clear from these interviews, there are some new connections to the outside world that can be established through technologies, such as video communication, but also to find and establish well-functioning payment services that are less cumbersome and less open for fraud than the current technologies. Being able to hold and remaining in control of ones finances seems to be important in the eyes of the health professionals. Furthermore, older adults should be able to benefit from the company of pets and plants, just as any other person, and they should be able to have fun with their technologies. Recently, Moors asked whether current decisions regarding ageing and technology would favour solutions aiming at self-management and agency as citizens and consumers or solutions aiming at reducing fear or portraying older adults as needy [58]. The current research shows an inclination towards the latter.

On an overarching level, individuals, civil society, industry and service providers need to start a discussion on the different purposes of technologies in the homes that extend beyond ensuring the recipients’ basic capabilities. It is through paying attention

to the realization of specific values or capabilities through technologies that service providers and industry might change a focus beyond safety and economics [59].

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