Ethics by Other Means? Care Robot Trials as Ethics-in-Practice

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Abstract: Recently, socially assistive robots (SARs) have entered care work to tackle the care deficit for ageing populations. Previous research on care robot ethics has emphasised design processes and ethical guidelines. In contrast, this paper employs an empirical ethics approach to investigate how ethics is co-constituted in care practices. Drawing on ethnographic research on an SAR's dementia-care usability trials, the core research question is "What therapeutic gains does human-robot interaction achieve for older users?" These usability trials were underpinned by the optimistic 'ageing-and-innovation discourse', which frames how 'the good' and 'therapeutic gain' are perceived. Furthermore, this article contributes to science and technology studies (STS) on older users by studying user figuration as a site of 'ethics by other means'. It argues that the ethics of care robots should not be contemplated only as ethical frameworks, guidelines and imperatives but, rather, as situated and relational normativities that stem from care practices.

Keywords: ageing-and-innovation discourse; empirical ethics; figuration; human-robot interaction; socially assistive robot (SAR).

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1. Introduction

The ethics of care robots has recently become a major subject of public and academic discussions. In Europe, the European Commission (2019) has defined ethical guidelines for the development, deployment and use of artificial intelligence, such in the case of automated assistive technologies and, among them, care robots. These guidelines are summarised as four ethical principles rooted in fundamental human rights: i) re-

TECNOSCIENZA
Italian Journal of Science and Technology Studies
11 (2) pp. 53-71 - ISSN 2038-3460
www.tecnoscienza.net

TECNOSCIENZA
Italian Journal of Science & Technology Studies

specting human autonomy (i.e. ensuring human self-determination and freedom); ii) preventing harm (i.e. protecting human dignity, as well as mental and physical integrity); iii) fairness (i.e. equally distributing benefits and costs); and iv) explicability (i.e. using transparency as the basis for building trust). Universal human rights, such as autonomy, are evident in both the guidelines presented by the European Commission and the extant literature on care robot ethics. This literature stresses that designing assistive technologies for older adults should account for ethical principles, such as protecting privacy, ensuring dignity, preserving autonomy and respecting the values of independence, enablement, safety and social connectedness (Burmeister 2016; Diaz-Orueta et al. 2020; Sharkey 2014; Sorell and Draper 2014). The same values are evident in more critical assessments, in the fear that care robot implementation may lead to a reduction in human contact and a loss of privacy and freedom, as well as potential deception (Bennett et al. 2017; de Graaf 2016; Sharkey and Sharkey 2012; Sparrow and Sparrow 2006). In technology development and design, ethical frameworks are usually grounded as moral rules that should be accounted for in the process of "value-sensitive design" (van Wynsberghe 2013).

Previous studies on care robot ethics (Bennett et al. 2017; Burmeister 2016; de Graaf 2016; Diaz-Orueta et al. 2020; Sharkey 2014; Sharkey and Sharkey 2012; Sorell and Draper 2014; Sparrow and Sparrow 2006; van Wynsberghe 2013) have heavily relied on deontological moral theory, that is, on the need to set ethical guidelines as moral imperatives to be followed in technology design, implementation and use. However, this approach leaves open the question of whether the complexities of care in practice contribute towards the constitution of an ethics of care robot usage in any way. A deontological framework cannot fully grasp the ethical complexities actualised in care practices. Although deontology is not represented, in the extant literature, as the only way to "do ethics", it seems to be the most dominant moral theory in debates on care robots. Addressing this limitation, this article strives to rethink care robot ethics not from the viewpoint of universal human rights-centred deontology but, rather, through an empirical ethics approach (Mol 2008; Pols 2015; 2017). This approach regards "normativity", that is, the different forms of "the good", as the outcome of situated practices. In contrast to deontological ethics, whose interest lies in whether or not moral imperatives are followed in design and beyond, the empirical ethics or "ethics-in-practice" approach stresses the availability of multiple ways to achieve 'the good' and emphasises that good care is co-constituted in practices where people, technology and discourses meet.

By adopting this approach, the article draws on ethnographic material collected during usability trials for a socially assistive robot (SAR) in a dementia care unit in Finland. The term "SAR" refers to interactive robots that provide assistance and companionship while assisting in convalescence, rehabilitation and learning in cognitive, affective and physiolo-

cal therapy (Abdi et al. 2018; Feil-Seifer and Mataric, 2005). In this case, the idea of a care robot is linked not to a type of artificial intelligence but, rather, to the "ageing-and-innovation discourse" (Neven and Peine, 2017). This discourse frames ageing as a crisis for societies that struggle with insufficient healthcare resources and rising costs. Within this discourse, innovative technology is offered as a solution to this crisis, and when technology is implemented, it is said to have only positive outcomes, identifying a "triple win" for individuals, societies and economies. According to this discourse, the aged individual wins as they receive better-quality care. Society - that is, governments, municipalities and taxpayers - wins as healthcare costs are reduced. Finally, economies win as marketable and exportable technologies are produced, resulting in new jobs and economic growth. Of course, these three "levels" are interlinked. Nevertheless, various actors involved in national and global healthcare policy and the welfare technology industry sector tend to refer primarily to these three winners and to use this rhetoric as a tool to galvanize the development of new technologies (Neven and Peine, 2017). The ageing-and-innovation discourse strongly affects the development of care robots, and these effects are evident in the context of SAR trials.

In this case, the ageing-and-innovation discourse offers a background against which to examine why and how robots are trialled in dementia care. In these trials, the discourse is mainly performed by two stakeholders: the testing group, which represents an innovation company that develops digital solutions for future 'smart cities', and the administration and employees of the care unit, which rehearses the future of ageing through technology pilots. The usability trials studied in this article exemplify the promises of the discourse in three ways. Firstly, the SAR was trialled as a therapeutic device that increases older users' wellbeing. Secondly, robot technology emerges as a way to lighten the caregivers' workload and, thus, as a means of tackling the demographic "care deficit" that ageing populations bring (see also Abdi et al. 2018; Kriegel et al. 2019). Thirdly, the trials were part of a multinational series of pilots conducted to induce the creation of a start-up enterprise in the European Union and, thus, new jobs. Because the ageing-and-innovation discourse presents three different "goods" that care technology can achieve, it is inherently normative in nature.

By applying an ethnographic approach, this article examines how the ageing-and-innovation discourse is performed in usability trials. In line with user research, I am interested in what "good" care robots achieve for older users. Because SARs offer cognitive, affective, and physiological 'therapy' for the elderly, I term the individual good a "therapeutic gain". My research questions are as follows: *what kind of ethics is enacted during the trials? What 'therapeutic gain' does human-robot interaction achieve for older users?* I argue that care robot ethics should not be framed solely by deontological claims that emphasise design processes, but also by the ethics-in-practice perspective. In the SAR trials, this per-

spective does not affirm such 'universal' values as autonomy but, rather, the emergent ethics of care, which stresses the normativity of multilateral interdependencies (Puig de la Bellacasa 2017; Sevenhuijsen 1998; Tronto 1993).

I will begin by presenting the theoretical framework and my contribution to science and technology studies (STS). I will then present the methodological principles and the context of the case study in more detail. In the analysis section, I discuss the figuration of different users and ethics. Before concluding, I discuss how the trials were deemed a success by the stakeholders involved, in spite of evident problems, contradictions and ambiguities.

2. Empirical Ethics and User Research

This article contributes to user-oriented STS in two ways. Firstly, ethics has been overlooked in recent research on technologies for older users, which has, instead, highlighted older persons' agency in the face of ageist, paternalistic and stereotypical technology designs and design processes (Compagna and Kohlbacher 2015; Cozza et al. 2020; Frennert 2016; Hyysalo 2004; 2006; Neven 2010; 2015; Peine et al. 2014; Östlund et al. 2015). Secondly, usability trials have not been examined as a site of ethics-in-practice. I argue that usability trials are not solely concerned with configuring technology or users, or how the designer's image of the user shapes and constrains possible users (Woolgar 1991), but also with ethics. In trials, possible ways of achieving 'the good' for older users are assessed. Thus, SAR trials offer a gateway via which to examine the ethics of care robots.

To understand the benefits of the empirical ethics approach, I will briefly locate its genealogy in STS. The empirical ethics approach relates to both the material semiotic tradition and the ethics of care discussions (Thygesen and Moser 2010). In material semiotic user studies, the concept of a "script" has been important. Scripts concern the anticipations based upon which users act when facing a technology, and they are inscribed in a technology's materiality and design (Akrich 1992). Script analysis stresses the dynamic co-configuration of technology and users (Van Oost et al. 2009). Concerning older users, "age scripts" - the ideas and discourses of old age - have been shown to lead to stereotypical images of the aged population (Neven 2010). However, scripts do not determine the user (Pols and Moser 2009). Although the "processes of configuring and scripting are expressions of power and may cause dynamics of exclusion or marginalisations" (Cozza et al. 2020, 273), the semiotic approach has been criticised for emphasising the designer's role and assumed intentions (Mackay et al. 2000; Oudshoorn and Pinch 2008).

The material semiotic approach addresses ethics by emphasising prescriptions. For example, Latour (1992) has described how the imperative

for car drivers to slow down is inscribed into speed bumps. Thus, police officers' responsibilities are delegated to material artefacts. In contrast, Verbeek (2006; 2011) has incorporated script analysis more explicitly into normative ethics by studying how engineers do "ethics by other means" by "materialising morality" into technology. Both Latour and Verbeek highlight that the outcomes of relationships with technology are not predetermined. However, in this body of research, ethics easily becomes "top-to-bottom" rules inscribed by the human designer into technology. This view reinforces the idea of ethics as deontological imperatives. However, it is not only designers who do "ethics by other means". The constitution of ethics in everyday use of technology is just as important as the ethical prescriptions inscribed in its design. Also, as Ludwig Wittgenstein (1958) has shown, a prescription or rule does not include unambiguous instructions for applying that rule. Thus, although morality is inscribed in technology, there is no one correct way to "follow the script". For this reason, I turn to studies on empirical ethics that build on the material semiotic tradition and Wittgenstein's later philosophy (see Pols, 2017).

Studies in empirical ethics have examined how normativity is performed in practice (Pols 2017; Pols et al. 2018). In consensus with the ethics of care discussions in feminist theory (e.g., Puig de la Bellacasa 2017; Sevenhuijsen 1998; Tronto 1993), the empirical ethics approach stresses situated interdependencies and dynamic relations. Rather than emphasising norms and values as prescriptions in technology, normativity is seen as the outcome of interactions between humans, technologies and discourses. A focus on empirical ethics does not imply that ethical guidelines do not matter. Rather, it suggests that an ethics is not determined by design and engineering but is, instead, an ongoing process. Caring practices have been a major site for adapting the empirical ethics approach because they deal with how to accomplish good care in its various forms (Lydahl and Löfstrand 2020; Mol 2008; Pols et al. 2018; Thygesen and Moser 2010; Willems and Pols 2010). This approach emphasises situatedness, practices, relationality, and thus the importance of ethnographic research, which is well-suited to grasping these aspects of care. Following this line of thought, this article examines how users and ethics are co-constituted in dynamic relationships between humans, technology and discourses. In this view, robots are not expected to enact any moral rules, such as respecting autonomy. Instead, they are seen as co-constituting the local, practical and multiple ways of achieving the good.

According to this theoretical framework, I use the concept of "figuration" as a theoretical-methodological tool with which to contextualise the usability trials into the broader politics of contemporary healthcare. Here, figuration is an umbrella concept that links user configuration, ethics-as-practice and the ageing-and-innovation discourse. It has two advantages when contrasted with "configuration", which is a much-used concept in semiotic user studies (e.g., Neven 2010; Mackay et al. 2000; van Oost et al. 2009; Woolgar 1991). Firstly, figuration does not only illustrate the

configuration of users, nor does it only emphasise the ethical intentions of designers; rather, it focuses on the co-constitution of users and ethics in usability trials. Thus, figuration refers both to the various user "figures" and the normativities enacted in human-robot interaction. Secondly, figuration identifies users as embedded and embodied subjects, as "material and semiotic signposts for specific geo-political and historical locations" (Braidotti 2019, 34) - in this case, in the Nordic welfare state of Finland - as well as the promises of technology evident in the ageing-and-innovation discourse. Before putting this framework into action, I will discuss the context of the trials and methodology.

3. Materials and Methods

This paper is based on an ethnographic project that examined the usability trials of a SAR prototype in dementia care in Finland. The care unit provided in-patient care which consists of long-term residency, specialised staff and constant supervision, with social and medical services, meals and accommodation provided (Kriegel et al. 2019). The research material was gathered over three weeks in 2019. The material is comprised of field notes from participant observations and a number of informal engagements with the testing group and the staff of the unit which equated to roughly five ethnographic interviews. Through these, information on the robot's design and purpose was gathered. The field notes consist of observations and verbatim notes on the users', testing team's, and robot's spoken interactions. The care unit was also observed during the daytime. The interviews were informal, and they were not recorded. Instead, notes were taken during the interviews. An ethnographical approach allows to ask "how technologies are embedded, evolving, and impactful in our personal and social lives, and how these tie into issues of social control" (Van den Scott et al. 2017, 509). In this case, ethnography is an invaluable way to see how SAR technology affects dementia patients' lives and how usability trials act as part of the optimistic technological determinism implied by the ageing-and-innovation discourse. The ethnographic approach also reveals ethical complexities that do not resolve into concerns about guidelines, imperatives, prescriptions or design.

The robot in question (Fig.1) is a socially assistive and autonomous robot, Sanbot Elf, developed by "Qihan Technology Co. Ltd." and modified with applications and automated navigation. Figure 1 illustrates the robot's appearance. The SAR has humanlike features, and it stands at approximately 145 centimetres tall. The SAR's graceful white body bends forwards slightly, evoking a user who sits in a wheelchair. A touchscreen on the chest serves as the main tool with which to control the robot's functions. The robot has a soft pre-recorded voice (the voice of one of the testing team). The SAR can engage in short discussions in Finnish. This

ability helps with the robot's interactions and in achieving the goals of robot therapy (Abdi et al. 2018; Tuisku et al. 2019). Lacking "intuitive, reflective, and/or critical thinking skills" (Huschilt and Clune 2012, 17), however, the robot is unable to respond dialogically or become sociable in any authentic sense (Jones 2017). "Let's do something fun together!" the robot suggests. It also asks questions, such as: "Do you have any pains?" and "Have you taken your medicine?". It often replies to the user's (presumed) answer with an uplifting "right!" These prefigured lines suggest that everything is going well - the robot's answer is always the same, whether or not the user has taken their medicine.

Figure 1. The socially assistive robot (SAR) prototype "Sanbot Elf".

Four different applications were tested: short stories, a memory game, a "musical journey" and physical exercise. The minutes-long stories were about Finnish presidents, a nearby pond and a folk poem. The SAR narrated them while showing accompanying pictures on its screen. In the memory game, the touchscreen with the robot's 'ears' and 'arms' changed colour, and the robot urged the user to answer, asking with an uncanny voice, "What colour is this?". In this application, the warm human voice changed to a non-gendered and monotone "robot voice", which was unsettling for the trials' participants and spectators. In the "musical journey", the SAR played popular music based on the birth year of the user. The music was introduced along with pictures and stories about urbanisa-

tion and wartime, when "gramophones changed to vinyl records" and movies "turned from silent to talkies". In the exercise app, the user could execute either an arm or leg exercise while sitting down. When the user chose an option, a video began playing featuring a physiotherapist who showed the moves and explained how to do them. The SAR's role as "therapists, companions, and educators" (Huschilt and Clune 2012, 15) to people with dementia prevailed in the test applications. The exercise application was a form of physical therapy, and the memory game and stories offered cognitive stimulation. The applications were chosen during project meetings and interviews with the facility's staff. This process shows that the developers and providers of the robot were more interested in care employees' evaluations and how they imagined the user than in actual users' genuine participation (Compagna and Kohlbacher 2015; Cozza et al. 2020).

The trial's participants were residents of a public care home for dementia patients in Finland that is accustomed to technology pilots. The trials were conducted as part of the unit's everyday routines. During the trials, 75 interactions with 18 residents (seven male and eleven female) were conducted. Consent was required for participation. I observed 26 sessions, which lasted approximately 20 minutes each. In addition to the residents, the robot and myself, two representatives of the testing group - one of whom controlled the robot's movements - were present during the interactions. The nurses seldom oversaw the sessions, which started with the testing group presenting the potential activities. The trial team's intention was to test all of the applications, and the team's "sales pitches" sometimes had a major impact on a resident ultimately agreeing to use the robot, even when they were initially hesitant. After the sessions, the teams asked the users questions about the robot's appearance and usability. I did not participate in planning the interaction setting. Although I participated in some of the unit's routines, which I discuss in the analysis below, during the sessions my role was mostly that of a spectator. My ethnographic approach was aligned with the principles of the empirical ethics approach. This kind of methodology can be called "uncontrolled field studies" (Pols 2012), in which the object of the study is approached without preconfigured frames of analysis. This approach resulted in my seeing the interaction itself not as dyadic but as multilateral - as a "crossroads" in which people, technology and discourses meet - and such relationships cannot be predetermined.

The trials faced many challenges. The robot and its functions constantly changed because of updates, added content and malfunctions. The musical journey application, for example, was added to the robot during the trials. The changes caused delays, and because of these, it sometimes became unclear what was actually being tested. For example, the photo show was a preliminary application, but it was only tested from a laptop, instead of the robot itself. Somehow, the results were deemed applicable to the robot by the testing team. The robot was also expected to distri-

bute medicine, but this task ultimately proved too difficult. However, to stay true to the research design and, more importantly, to please the financiers, the robot was used very briefly as a transport trolley for medicine. Also, although a great deal of effort was invested by the team into the robot's automated navigation properties, they were not used in the trials.

The SAR usability trials exemplify how care technologies aspire toward "the good" for individuals, economies and societies. Below, I will examine how various user figures and forms of "the good" for the older users were co-constituted in the trials.

4. The Figuration of Users and Ethics

I have identified four different figurations that emerged during the Sanbot Elf trials. The figurations refer both to user types, the "figures" of enabled, disabled, dismissed and subversive users, and the related normativities. I discuss these figurations along with short ethnographic stories. Because the SAR offers cognitive, affective and physiological therapy, I refer to the aspiration toward good as a "therapeutic gain". What this 'gain' turns out to be, however, depends on the situated human-robot interaction. Figuration calls into question any stereotypical or one-dimensional images of older users. None of the residents in the trials, however, enacted only one figure. Different contexts could enact different kinds of users between and during sessions. Thus, my focus is not on fixed states but on continuums. I argue that the usability trials illustrate not a set of universal moral values to be accounted for in design processes or otherwise but, rather, normativities that are situated in the relational outcomes of human-robot interaction.

4.1 The enabled figure

The enabled figure exemplifies how the promises of the ageing-and-innovation discourse were affirmed. A spontaneous session with Maria, a resident during the Sanbot Elf trials, illustrated this process. Before the session, Maria had repeatedly mistaken me for her son, who is "also tall", showing signs of trouble with recognition. Though my judgement is not that of an expert, I believe that dementia could also be seen in her actions when she was unable to recall that her clothes were her own and attempted to return them to the staff. Such behaviour is not unusual to the facility's employees who, on another similar occasion, had been reluctant to "call the police" and report the alleged "theft" of another resident's clothes as the resident had requested. Maria also needs assistance when moving. Once, she asked me to walk her to the nearby couch, which I gladly - albeit cautiously - did. Despite these 'frailties', Maria is one of the more active residents, engaging in discussions with others in the shared

facilities.

Although Maria needs the care that the unit provides, this session with her illustrates how interactions with the robot can affirm and expand the residents' abilities. The session started when Maria was drawn to the testing place by the robot's presence. She was not part of the day's schedule, but it was "okay" with the testing group if she wanted to listen to some music. The 'musical journey' application was then tested. Maria sat down and touched the screen. A classic Finnish waltz from the 1950s began playing. Maria felt like dancing and swayed to the music. She commented on the pictures shown onscreen. A moment of applause and many thanks from Maria ended the songs, of which she seemingly never tired. When the scheduled resident arrived, Maria stayed and listened to the tunes. However, she soon fell asleep.

Like Maria, most of the residents found the robot and its applications favourable. These residents perceived the robot to be safe, calling it "benevolent" and "beautiful". In addition to "dancing", the musical journeys induced physical "exercise" and abilities, such as stamping one's feet to the rhythm and singing along with the songs. Although the musical journeys were especially successful, the short stories also earned positive appraisals. The short stories aroused memories and associations of past experiences, which seemed appropriate (that is, "positive") in the context of the applications, evoking responses in the user which seemed happy, joyful and excited. In addition, residents recognised the historical contexts of the short stories and musical journeys. Stimulating nonverbal and verbal communication, promoting positive emotions and evoking past experiences are some of the desired aspects of "robot therapy" (Huschilt and Clune, 2012, p. 16). Based on these positive reactions, the testing team and the unit's staff considered the robot a success.

The ethical framework established by Sorell and Draper (2014) and discussed in the introduction outlines enablement, independence, autonomy, social connectedness, safety and privacy as important values. The enabled figure exemplifies how these values can be achieved in some sessions. The enabled figure likes applications that arouse memories, satisfaction and discussion, offering a chance to enforce independence, autonomy and social connectedness. When the SAR is not perceived as frightening, the value of safety is evoked among the residents. When the user could use the robot without assistance, privacy was enforced. How this kind of therapeutic gain aligns with the optimism of the ageing-and-innovation discourse is important. Here, the robot works as a therapeutic companion to the user. It achieves a normativity of enablement that respects the aforementioned values. Still, other figurations were present during the Sanbot Elf trials. In addition to enablement, disabilities were also enacted. Thus, such usability trials become *(us)ability* trials, in which, instead of the usability of the technology, the abilities of the user are tested.

4.2   The disabled figure

The outcomes of care technology implementation often differ from politicians' and designers' hopes (Pols 2017), which in this case means the expectation that robots can act as helpers and therapeutic devices. The disabled figure stands in contrast to the promises laid out by the ageing-and-innovation discourse. A story involving Helena, an always-smiling female resident, best exemplifies how disabilities were co-constituted in interactions with the robot. In her session, Helena tested the physical exercise application. When starting the app, the SAR invited Helena to keep herself fit by saying, "Let's do some exercise!" Helena chose the upper-body exercise. When the video started, the onscreen instructions seemed difficult to follow. Helena sat quietly, attempting to understand the video. To assist the robot, a member of the testing group performed the moves. At first, this intervention did not help either, but finally, with a human example, Helena accomplished "hugging herself", which was part of the exercise. Nevertheless, doing both parts of the exercise was problematic, requiring Helena both to hug and to let go. Her arms were left behind her back, which seemed uncomfortable. After the video, Helena felt "tired" and wanted to stop the session for the day.

During the trials, it became clear to the testing team, the users, and me that the exercise was difficult to follow. None of the users were able to do the moves "until exhaustion", as suggested by the robot, with or without human assistance. Sensory disabilities were further enacted when hearing, watching and touching the robot. It was sometimes difficult to see and understand the onscreen symbols. For example, one resident, Veikko, could not choose between the green and red options offered because he was colour-blind. Disabilities are not merely 'essential' qualities of a user which technology passively reveals. Instead, technology co-constitutes disability as the outcome of the user's interactions with it (Moser 2000; Moser and Law 1999). Thus, colour blindness is co-constituted in human-robot interaction as a deficiency when only red and green options are provided. In addition, the touchscreen was extremely difficult to use. Only a few residents could use the screen by themselves; for others, the testing team controlled the robot. The more any expectations inscribed in the applications were nullified by the actual users, the more improvisation was needed to achieve smoother, albeit still awkward, interaction. This effect meant that the idea of the robot as a therapeutic helper did not hold. Instead, the robot itself constantly needed help.

In comparing Maria and Helena's stories, it is interesting that interactions with the same technology can both affirm and deny ability in different situations. When disabilities were affirmed, help from the testing team was needed for residents to use the robot, as was the case with Helena. This need for help can result in a human example of "doing an exercise" or assistance with the touchscreen. In this kind of normativity, vulnerabilities lead to interdependencies. In terms of therapeutic gain, robots that co-

constitute disabilities instead of affirming abilities are probably not desirable. However, the disabled figure does not necessarily contradict ethical guidelines that highlight the affirmation of abilities. Vulnerabilities call for social connectedness. In this way, the possibilities of belonging, being accounted for and being cared for remain. Thus, enacting disabilities is less an ethical disaster and more a chance to re-examine the trials' complexities. Although enablement has been stated as an important imperative for designing care robots (e.g., Sorell and Draper 2014), the disabled figure partly questions this assertion. Vulnerabilities, not enablement, are the precondition for residents receiving care in the first place. Next, I discuss further the situations in which the issue of interdependencies arises.

4.3   The dismissed figure

When the robot's overly optimistic "attitude" and "negative" associations clash, the user is figured as "dismissed", with hardly any therapeutic gain from the encounter. A session with Liisa provides an example of the dismissed figure. Before her musical journey, Liisa told us about a close relative who "died while cycling". It is difficult to say whether the robot aroused these associations. It certainly seemed to have. The SAR introduced the next song, an evergreen melancholic love song from the 1940's. This choice differed from Liisa's wishes. She would have liked classical music; someone close to her had worked in the opera. While the music played, Liisa again spoke about the person who died. During the next song, Liisa recounted how someone "started drinking". The melancholy post-war songs being played were sad, and I too was beginning to feel blue.

The music application does not include classical music, which is Liisa's preference. Instead, for the robot, melancholy pop tunes seem to suit everyone. However, Liisa does not fit this kind of image of the user and, thus, was dismissed; her personal history of opera lovers and dead family members was not responded to. Providing stressful information about death, alcoholism and loss is not new to SAR implementation (Sabelli et al. 2011), and of course, therapeutic interventions often involve facing traumatic memories. However, it is difficult to consider Liisa's story as a form of robot therapy when it is contrasted with the idea of 'everything going well', which is inscribed in the robot.

A session with Pentti clarifies this tension. Before the session could begin, the SAR needed to be restarted. Pentti uses a wheelchair and has many concerns. He began a discussion by explaining that he had hurt his fingers. I could see that they had turned black. Although he seemed spry, Pentti talked about his problems with insomnia. In his opinion, the melatonin the doctor had given him was a dosage "for little children". He also felt hesitant to talk to the nurses, who "do not speak Finnish well". When the SAR rebooted and started asking questions, Pentti answered that he had taken his medicine but still had pains. Today "is not a good day", he

said. "Right!" the robot replied, ending the small talk.

The dismissed figure produces ethical ruptures. The anxiety that sickness and injuries bring arouses critiques of the nurses' and doctors' capabilities. Pentti was critical of his dosage of melatonin, which in his opinion, did not help. Furthermore, he was unsure whether the nurses with immigrant backgrounds could understand and respond to his worries. The SAR, however, dismissed all these anxieties. As with Liisa, the robot's overly optimistic and preconfigured "attitude" clashed with the associations that were raised during Pentti's session. This is problematic. The way the SAR functions nullifies any call for responsiveness - users like Liisa and Pentti are left alone with their worries and troubles. In contrast, the unit's nurses stressed the importance of always answering the residents, no matter how repetitive they are.

It was also clear that the care provided in the unit was, in addition to responsiveness, about empathy. The need to ground care in an empathetic relationship is evidenced by the critique articulated by Pentti: he spoke it not for the robot to hear, but for us - the trial's spectators - in the hope of recognition and response. As Tuula, who tested the robot in many sessions, put it: "It would be nice if it were human." Discussions with people were preferred to discussions with the robot. If the enabled figure illustrates how technology can be a joyful companion, relationships that produce dismissal, in contrast, enact the distinction between "cold" technologies and "warm", human-centred care (Pols and Moser 2009). An unempathetic robot is a cold companion. The SAR's empathy ends with its inability to run people over, an aspect the testing group stressed when a resident was unsure whether the robot could be trusted not to run over her feet. However, the normativity of responsiveness and empathy cannot be dismissed in care practices. Because the robot was unable to answer or act empathetically - that is, to care - this responsibility was distributed to the trials' spectators. When one resident asked, during a session, if her husband was dead, the testing team and I had to answer without knowing the right answer (the robot certainly did not have the answer) or knowing the right *way* to answer; we had to improvise. In these situations, the roles changed: suddenly, *we* were being tested as to whether *we* knew how to care.

It became clear that the robot's users were constantly assisted, which calls the idea of independence into question. When a user's independence is removed, interdependencies are put into action. Interdependencies are linked not to moral contracts to be executed but to the situated practical "tinkering" that is caring (Mol et al. 2015). Empathy and responsiveness are not universal moral values or imperatives; rather, they are situated and relational 'goods' that emphasise neither idealised images of love and recognition nor the ideal of 'everything going well' but, instead, a troubling awkwardness and improvisation. In contrast to the enabled and disabled figures, the dismissed figure illustrates how the possibility of therapeutic gain in these trials gradually disappeared. The session with Pentti

already showed the criticism the robot could elicit. However, the user was also figured as subversive in many other ways, which I will discuss below.

4.4   The subversive figure

In the ageing-and-innovation discourse, old age is viewed in the negative, as a problem and a lack (Neven and Peine 2017). This results in identifying special 'needs' for the aged that the young and healthy do not have. Problems with memory call for memory stimulation and rehabilitation, for instance. Thus, short stories, 'musical journeys' and a memory game were installed in the robot, as mentioned above. However, some of the older users were reluctant to position themselves as old and frail or, indeed, to accept the relationship between old age and the ageist inscriptions in technology (Neven 2010). During the trials, verbal, nonverbal and silent opposition emerged. The best example of verbal opposition in the Sanbot Elf trials was a session with Tauno, a man born in the 1920s who followed and understood the applications easily. He commented on them with indelicate remarks, clearly unsatisfied. After the memory game, in which he deemed the colour red to be the "colour of a commie", the observing group member declared Tauno the "winner". The man asked in response, "What was there to win in that?" As a concluding remark for the session, Tauno stated that the robot "needs a hell of a lot of improvement". He said he "is not going to stay here looking at this kind of toy" and further insisted on "getting rid of that computer", which is "not much good at bullshitting".

Opposition was not always this striking; sarcasm is one example of this. In one session, when the robot asked Helena's gender, the ironic reply was, "Guess." Another example came when testing the memory game: the user stated that the colour was "mostly blue", emphasising "mostly". At times, in the Sanbot Elf trials, the robot was a source of humour for participants, something to laugh at. Such was the case with the memory game, especially. Even the testing team deemed it "horrible", too simplistic, easy and non-activating. At other times, the users were cooperative but seemingly chose not to answer the robot's questions or follow the testing team's instructions. In earlier user studies, reluctance and incapability to enact the expectations laid on the user have been conceptualised as "re-configuration" (Mackay et al. 2000), "non-use" (see Oudshoorn and Pinch 2008) and "innosumerism" (Peine et al. 2014), for example. However, these concepts frame older users too narrowly within the perspective of active and critical consumerism (see also Compagna and Kohlbacher 2015). Silence and refusal offer slender opportunities for future innovations and reconfigurations. For this subversive figure, no therapeutic gain can be achieved in terms of the ageing-and-innovation discourse. Instead, the subversive figure illustrates that the individual good is missing. What is present, however, is criticism that calls for alternatives.

So why did the stakeholders deem these trials a success in spite of the

ambiguities and the subversive users discussed above? I claim that this is because the trials were performed under the logic of the ageing-and-innovation discourse. Future-orientation and promises of high-tech innovations are important facets of this discourse (see also Crabu 2014; van Lente and Rip 1998). Thus, criticism in the present might be offset by the hope and optimism placed in future improvements. Indeed, the testing team highlighted a future-orientation: the robot was introduced as a tool to gather data for improvements. Although the inactivity and opposition that the subversive figure illustrates could be seen as negative effects of interacting with a currently underdeveloped robot, these kinds of "failures" can always be framed as desirable, and thus justified, regardless of whether they result in any actual improvements. Some of the nurses, too, were happy when the robot had any activating impact on users. This "everything goes" rationality echoes the pervasive ageing-and-innovation discourse, in which technology's mere presence is more important than how well a technology executes its tasks (Neven and Peine 2017). Although care robots are designed according to moral imperatives and "universal" values, they are implemented in care practices under the rationality of 'everything goes' which questions the idea of ethics as guiding principles.

5. Conclusion

This article has presented care robot trials as a site of ethics-in-practice. Instead of a deontological ethics approach, which is the norm in ethical discussions of care robots, an empirical ethics approach informed by the concept of figuration was conducted. This approach resulted in identifying four different user figurations: the enabled, disabled, dismissed and subversive. In turn, all of these figures have illustrated what kinds of therapeutic gains are (or are not) accomplished for older users in human-robot interactions. In the trials, normativity in action meant a clash between abilities and disabilities, dismissal and responsiveness, and independence and interdependencies. When disabilities, responsiveness, and interdependencies were enacted, an ethics of care came to the fore. This kind of ethics is based on care practices that stress improvisation and tinkering. This formulation of ethics is not usually included in ethical discussions on SARs or the present state of the robot, because the discussion is too firmly focused on deontological ethics and design processes.

The article's findings question the idea that "universal" moral values, such as autonomy, enablement and independence, should be central in ethical assessments of care robots. The trials do not resolve into the normativity of enablement which stems from the ageing-and-innovation discourse. Indeed, only the enabled figure enacted these values and fully realised the optimism of the "triple win" rhetoric. Because the SAR enacts the interdependencies of care, rather than the independence of the

care receiver, its role as the liberator of the workforce and saviour of a demographic is questionable. The contradiction between the ideal of an autonomous, independent user and the actual and dependent residents connects to neoliberal healthcare reforms that, in the care unit discussed, had been introduced, for example, in the form of an imperative to refer to residents as 'customers' in order to respect their autonomy and freedom of choice. The need to address dementia patients as 'customers', and the independence expected from them as users, exemplifies the kind of user that is imagined as desirable and ethically justified in contemporary care practices, that is, a 'customer' who is in need of cognitive and physical therapy but is nevertheless active, autonomous and able (see also Frennert 2016). In practice, though, "the logic of care" (Mol 2008), functioning not on the independence of the customer but rather on interdependent relationships, came to the fore in these trials.

Acknowledgements

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