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Technology from the perspective of care

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1. Introduction

The long-term care system in Japan has been in crisis for a long time, and the country has the world's highest rate of population ageing, which is predicted to increase even more in the future. While the total population continues to decline, the number of people aged 65 and over will continue to increase, peaking at approximately 39,352,000 in 2042 and reaching 38,406,000 by 2050, with an ageing rate of 37.7%.

To build a sustainable long-term care system, the shortage of care workers is a big issue. In January 2022, the jobs-to-applicants ratio in the elderly care sector was 3.68 times compared to 1.20 times for all occupations (MHLW 2022a), meaning that even when jobs are advertised, care workers cannot be recruited. According to projections by the Ministry of Health, Labour and Welfare (MHLW 2021), we need approximately 2.8 million care workers in 2040, which means that the number of care workers need to increase by approximately 690,000 from 2019. Therefore, the Japanese Government is trying to promote the use of technology such as care technology and information and communication technology (ICT) to solve the problems.

Japan is not the only country aiming to use technology to tackle the challenges of an ageing society. Many developed countries with ageing populations have also accelerated the development and use of robots and ICT in the care sector. For example, since 2008, European countries have focused on improving the quality of life of older people through technology use and innovation, along with the active ageing movement.[1] Since the beginning of the 2000s, European countries have invested large amounts of money in developing technologies that support older people to live an independent life (Wright 2020). In Denmark, which is a member country of the EU, welfare technology has been promoted nationally since around 2007,

[1] Active ageing is a concept proposed in the United Nations International Year of Older Persons (1999) and the Second World Assembly on Ageing (2002). The World Health Organization (WHO) states, 'Active ageing is the process of optimizing opportunities for health, participation and security in order to enhance quality of life as people age' (WHO 2002; MHLW 2014).

and various technologies have already been implemented and utilized in elderly care.

Care researchers worldwide have been discussing not only the shortage of care workers but also the 'care crisis' as an analytical concept for the last two decades (Wrede et al. 2008; Tronto 2013; Fraser 2016; The Care Collective 2020; Dahl & Hansen 2022). Fraser (2016) argues that the social-reproductive contradiction of capitalism underlies the crisis of care. Care provides the preconditions that enable productive activity in the market. However, the logic of care differs from the logic of the market in that it consists of individual relationships between caregivers and care receivers. The marketisation of care introduced in Japan and many other developed countries demands productivity and efficiency of care, which reduces its quality and value as a result (Himmelweit 1999; Morikawa 2015; Hara 2020). Although care is vital for human life, its value has been undermined in contexts where neoliberal culture is dominant in capitalist societies (Okano 2020a; Ogawa 2021).

The coronavirus pandemic has further made visible the crisis in care. Although care is of paramount importance in a pandemic, the emphasis has been on economics, and care has been neglected. Although financial compensation for absence from work has been discussed, insufficient efforts have been made to address how to care for those asked to stay at home or receive treatment at home, how to protect the health and employment of caregivers and how to maintain social care with the risk of infection (Ochiai 2022). Clusters of Covid-19 cases have often occurred in care homes where older people at high risk of infection reside, creating a dilemma for care workers who had to risk their lives to continue their duties while simultaneously being unable to carry out their care roles at home due to the risk of infection. The coronavirus disaster revealed that the practice and value of care, carried on from generation to generation, was disregarded and that care, which is the foundation of society, was eroded by economic logic (Okano 2020b).

This paper builds on the argument that when considering the future sustainability of the long-term care system, it is necessary to consider the use of technology from the perspective of the care value's sustainability, rather than narrowing down to the issue of "improving productivity and efficiency". I would like to present some of the main issues that need to be addressed when incorporating technology into care and try to look toward the future.

2. The status quo of care robots in Japan

2.1 policy to promote care robots

According to the MHLW, a robot is an intelligent mechanical system with three underlying technologies: sensing information (sensor system), making decisions (intelligence and control system) and operating (drive system) (MHLW 2022b). However, terms such as 'care support robots (*kaigo shien robotto*)' and 'robotic care device (*robotto kaigo kiki*)' are sometimes used, and, more recently, the Internet of Things (IoT), i.e. a society in which various objects connect through the internet and exchange information, is being introduced and various devices are being developed. Thus, the concept of robots is becoming increasingly ambiguous, and the term 'robotic objects (*robottotekina mono*)', such as monitoring support devices and ICT, be included in care robots, which can be confusing (Homma 2017). In this paper, care technology will, in principle, be used to refer to a wide range of technologies, including ICT that can be used in the care sector.

Japan's state initiative began in earnest in 2010, when the government presented its vision for the promotion of the development

and implementation of care robots as part of the New Growth Strategy, which was approved by the Cabinet on 18 June 2010 (Cabinet Secretariat 2010). The Committee on Care/Welfare Robot Dissemination was established, and discussion concerning how to best promote care robot use was generated thereafter. The the Ministry of Economy, Trade and Industry (METI) and the MHLW cooperated in creating large-scale funding systems to support care robot projects nationwide. In 2013, the Japan Revitalization Strategy and the Five Year Plan for Development of Care Robots were presented.

The MHLW and the METI announced the Priority Areas for the Use of Robot Technology in Care on 22 November (Aoyama 2012; Cabinet Secretariat 2012). The four focus areas were:

(1) Transfer assistance

○Wearable equipment that uses robot technology to provide power assistance to carers

○Power-assisted lifting movements by carers using robot technology (non-mounted equipment)

(2) Mobility support

○The use of robot technology to support the elderly and others in getting out and about and safely transport luggage and other items

(3) Toiletry support

○Adjustable toilets with adjustable installation positions using robot technology for excreta disposal

(4) Looking after people with dementia

○Robot technology with sensors and external communication functions for use in care homes

The basic approach to identifying these focus areas was:

(i) The product must contribute to the promotion of independent support for persons requiring care and the reduction of the burden on care workers. However, those appropriate for development as medical devices are not eligible.

(ii) It is an area of high need and interest, according to the findings of the Report on the Project to Support the Practical Application of Welfare Equipment and Care Robots, and the results of other previous surveys on the use of robots in care settings and interviews with users conducted by the METI and the MHLW.

(iii) The sector is considered to have many potential users, in line with achieving the goals of the Life Growth Strategy.

(iv) Areas where the use of robot technology is reasonable.

The focus areas were revised in 2017 (MHLW 2017), and five items were added in one area, bringing the current number of focus areas to 13 (● marks are newly added focus areas).

(1) Transfer assistance

○Wearable equipment that uses robot technology to provide power assistance to carers

○Non-mounted equipment that uses robot technology to provide power assistance for lifting movements by carers

(2) Mobility support

○Walking aids using robot technology to support the elderly and others in going out and safely carrying luggage and other items

○Walking support equipment using robot technology that assists the elderly and others to move indoors, stand up and sit down, especially to and from the toilet and maintaining posture on the toilet

●Wearable mobility aids using robot technology to support the elderly and others in going out, preventing falls and assisting with walking, etc.

(3) Toiletry support

○Adjustable toilets with adjustable installation positions using robot technology for excreta disposal

●Equipment that uses robot technology to predict defecation and guide the user to the toilet at the right moment

●Equipment that uses robot technology to assist in toilet activities, such as putting on and taking off underclothes

(4) Looking after and communicating with others

○Platforms for robot technology-based equipment with sensors and external communication functions in care facilities

○Platforms for robot technology-based equipment with fall detection sensors and external communication functions in homecare

●Life support equipment using robot technology for communication with the elderly and other people

(5) Bathing assistance

○Equipment that uses robot technology to assist the user in movements when entering and leaving the bathtub

(6) Support for care work

●Equipment that uses robot technology to collect and store information associated with care tasks, including monitoring, mobility support and toiletry support, which can then be used to provide the necessary support to older people and others

The METI and the MHLW are working together to develop, promote and introduce care robots. The METI supports the development of equipment, while the MHLW mediates the needs of the carers/care recipients and demonstrates prototype equipment in care settings from an early stage of development.

2.2 Why introduce technology into care?

What motivates governments to introduce care robots into care settings? When analysing policy documents related to care robots, four discourses can be identified (Ishiguro 2018).

The first is 'workload discourse' which suggests care robots can reduce the physical and mental burden of care work and can lessen care worker turnover. Government documents note 70% of care workers have backache that can be alleviated by lightening their workloads using care robots (The Headquarters for Japan Economic Revitalisation 2015; METI 2017). Therefore, the use of care robots for transferring and other assistance can be helpful in reducing physical injury risks (The Headquarters for Japan Economic Revitalisation 2015).

Second, the 'quality discourse' indicates robots will help older people live more independently, thereby maintaining their dignity and enhancing their quality of life. The government's goal is to ensure 'older people with care needs will continue living an independent life in the community' (The Headquarters for Japan Economic Revitalisation, 2015). Mobility aids, toileting aids, and monitoring systems for people with dementia will assist older people with maintaining their independence (The Headquarter for Japan Economic Revitalisation s, 2015).

The third discourse is the 'robot industry discourse'. The Japanese Government wants to enhance the care robot industry and expects overall growth in the domestic robot industry. The Government expects a resulting huge economic growth, and this presupposes an increase in the production of Japanese robots for use in the care sector.

Fourth, the 'cost-saving discourse', suggests efficiency and productivity should be enhanced to achieve cost containment. Care work is very labour intensive and is

often afflicted with a 'cost disease' (Donath, 2000). The motivation is, therefore, to introduce care robots to improve efficiency and save labour in care work so that a smaller workforce can take on care duties (Industrial Structure Council 2012; METI 2017).

With these incentives, focus areas for care robots that can help solve problems have been defined, and their development and dissemination are being promoted.

2.3 How much technology is used in care practice?

To what extent are care robots actually used in care? According to the Care Work Foundation's Survey (2021), monitoring and communication technology (residential care) was the most common type of care robot used by care providers, accounting for 3.7% of the total. This was followed by 1.8% using bathing assistance robots, 1.5% using transfer assistance robots (wearable) and 1.3% using administration work support technology. Most care providers (80.6%) had not introduced any robots. Looking only at residential care facilities, the proportion of providers that introduced monitoring and communication technology (facility) was 16.6%, meaning that approximately one in six facilities introduced this system; 5.9% introduced care robots for bathing assistance, 5.3% for transfer assistance (wearable), 3.7% for administration work support technology and 3.2% for transfer assistance (non-wearable), indicating that the introduction of these robots is not very advanced.

The same survey also asked care providers about difficulties with introducing and using care robots. The most common response was 'high cost of introduction' at 60.5%, followed by 'it is not worth the investment (considering the scale of the business)' at 40.0%, 'worried about malfunction' at 34.5%, 'unsure if one can use the technology' at 33.6% and 'takes up too much space' at 33.2%, while 6.4% of respondents stated that they had no problems.

As described above, the introduction of ICT and care robots has not progressed much in the Japanese care sector; however, the reports show that ICT has made *some* progress due to the need related to the coronavirus pandemic.

3. Care and technology

3.1 Ethics of care and technology

How can the use of technology in caregiving be viewed from the perspective of ethics of care? Care is embedded in a set of social relations integral to well-being. It is involved in meeting someone's physical and emotional needs as a dependent being, within the normative, economic and social framework (Daly 2001; Ueno 2011). There are two aspects of care: caring about and caring for. The former is a wish for and concern for the well-being of others, while the latter is the act of responding directly to the needs of others. Good care cannot be provided unless the starting point is a genuine concern for the person's well-being (Himmelweit 1999; Tanaka 2008). As such, care is an interactive act involving multiple actors and interrelationships and is produced and consumed at the time and place when the need arises, so it shares time and space with the person receiving care and is, in principle, incompatible with labour-saving (Ueno 2011).

Tronto presents the four phases that constitute good care (Tronto 1993; Dahl & Hansen 2022):

1. Caring about: To be concerned about someone's care needs and to identify those needs.
2. Caring for: Taking responsibility to meet that need and recognising that something must be done.

3. Caregiving: The actual physical work of providing care.
4. Care-receiving: Receiving responses from actual care recipients to assess whether care has met their needs.

What Tronto shows is that care is a complex process based on reciprocal action, and it is essential to have a democratic process that examines what care is needed in individual situations and how that need is met. Wærness's (2010) concept of the rationality of care shows that a prerequisite for providing good care is the individualised knowledge, ability and opportunity to understand what is needed in each situation. Care has rationality, which differs from scientific rationality where professional authority and control are seen as legitimate, and reason and emotion are seen as dichotomous. The quality of care is created in the interrelationship between care receivers and care providers, and it is in this context that the rationality of care lies. The more we try to rationalise care using scientific rationality, the less rational we become (Wærness 2010; Morikawa 2015).

Considering the above, the values of care, such as interpersonal relationships and consideration for the other person, seem to be undermined when care is entrusted to technology. Machines are considered inhuman and cold (Coeckelbergh 2015), and, while care technology can be responsible for physical assistance to meet the physical care needs of older people, it cannot care for their emotional needs, wish them well or perform emotional labour with heart. Additionally, introducing technological tools may lead care recipients to perceive technology and robots as objects that may inhibit caregivers from forming a human relationship (Parks 2010; Kovalainen 2021). The scientific rationale of technology does not seem appropriate for care based on person-to-person interactions.

Dowling (2021), however, suggests that technology can be a great help to care workers if some tasks are automated, freeing up their time for other tasks, although she at the same time stress care crisis cannot be solved by technology alone.

Moreover, some care technology case studies show some positive feedbacks. For example, when a transfer lift was introduced at a Japanese nursing home, where the norms that transfers should be done by hand was deeply rooted, the carer's physical burden was not only reduced, but they also found that transfer using the lift was less painful for older people than manual lifting (Ishiguro 2018). Some care practices show that using a transfer lift can prevent joint contractures, deformities and internal bleeding that are likely to occur when lifting and pulling with the hands, and it can also provide more attentive support to older people (Koshuku Zero Suishin Kyogikai 2022: No Lifting Association 2022). In this sense, it is doubtful whether it is appropriate to discuss technology in a general, single term. Care technology is a very broad concept and includes various devices and each technology has its own characteristics and effect (Ishiguro 2018). Caregiving using technology may potentially enhance the value of care. What we need to figure out is what kind of technology is appropriate in care and how technology should be implemented in practice to embody the value of care. More and more technological devices are expected to be developed and used in the future; therefore, it will be necessary to consider an analytical framework to incorporate technology in care in an appropriate manner.

3.2 Contextualisation of technology in care

3.2.1 Direct and indirect assistance

As mentioned above, there is a wide variety of devices and applications of care

technology. They can be classified as either technology for direct assistance or technology for indirect assistance. Direct assistance is care work activities related to the user's body, such as bathing, toileting, eating and transferring support, while indirect assistance is care work activities not directly related to the body, such as washing clothes, cleaning, monitoring and documentation.

Kitakyushu City (2019) observed, analysed and recorded the care work performed in nursing homes and found that indirect assistance constitutes around 55% and direct assistance 45%. Some nursing homes are trying to reduce the burden on staff by utilising technology in these indirect assistance tasks and using resources for direct assistance so that care workers can spend more time with older people.

For example, documentation work is a significant burden for care workers in some nursing homes, and inefficient work procedures are often observed, such as writing by hand, transcribing records into report form or re-typing them on a computer. Accordingly, some apps have been developed and utilised so that care workers can do documentation on tablets or smartphones at once. Moreover, calling and searching for other caregivers to ask for assistance is time-consuming; therefore, many facilities use intercoms to enable caregivers to keep in constant contact.

Furthermore, caregivers spend time and effort visiting all the rooms in a care home to check on residents during the night. Using a sleep measurement sensor device (such as a sensor installed under the patient's mattress), the patient's sleep, awakening, rising and leaving the bed are monitored and displayed on the terminal in real-time, and, if a change in physical condition occurs, it will be displayed. Before introducing the technology, night-time monitoring at nursing homes was a heavy burden but, if the status of patients and the presence or absence of abnormalities can be detected remotely, this alone will considerably reduce the burden on staff. For the resident, care workers entering the room enhances the risk of being awakened and disturbed from sleep. During the coronavirus pandemic, when contact had to be avoided as much as possible, this device is effective in reducing contact. If signs of an illness can be identified by analysing the data, it is also possible to receive prompt medical attention. It is also useful in terminal care, where the user's condition can be monitored, and the family can be informed immediately when the end of life is approaching (Miyamoto 2021).

Using technology for indirect assistance is not a major problem because it does not reduce contact with the patient, and, in some cases, the extra time can be used for direct assistance. However, the care robots that support direct assistance, such as transfer assistance, transfer support, excretion assistance and bathing support, are also included in the aforementioned 13 focus areas for care robots proposed by the government.

In Denmark, Billund municipality (Billund kommune) started providing robot vacuum cleaners to older people instead of home help in 2011. Although Billund municipality was heavily criticised, other municipalities soon followed the practice (Greve 2011). As Sparrow and Sparrow (2006) argued, home helpers might be the only opportunity for elderly people living at home to meet other people. Even though care robots reduced the care burden on staff, such as transfer lifts, they did not lead to better care if, as a result, the older people meet a smaller number of people and get less time for social contact.

3.2.2 Alternative or complementary?

There is a general debate about whether

robots and artificial intelligence can *replace* humans or *assist* humans. There is a similar debate around care technology and whether technology can *replace* carers or *assist* carers (Sparrow & Sparrow 2006; Parks 2010; Wright 2019).

European Parliament resolution of 16 February 2017 with recommendations to the Commission on Civil Law Rules on Robotics (16 February 2017) states that 'human contact is one of the fundamental aspects of human care; believes that replacing the human factor with robots could dehumanise caring practices' and 'despite the potential of robotics to enhance the mobility and integration of people with disabilities and elderly people, humans will still be needed in caregiving and will continue to provide an important source of social interaction that is not fully replaceable', making clear that technology cannot replace human beings (European Parliament 2017).

3.2.3 Technologies for human dignity

It has been pointed out that, in general, people aged 75 and over begin to show a decline in physical functions, and once they reach their late 80s, their independence and autonomy decline in line with the reduced physical and mental functions. Older people are more likely to feel a sense of resistance and self-denial about receiving assistance from others. Exposing one's body to others asymmetrically is fraught with anguish and conflict, no matter what kind of care is provided (Amada 2004; Sumiya 2014). They might feel significant psychological conflicts, especially if older people need assistance with toileting. There are cases where older people who do not want to wear nappies have to accept them out of reservation or concern for their carers or rationalise it as a defensive mechanism as if it is unavoidable (Yoshimoto 2008). If technology can be used to support daily activities that require exposure of the body, such as toileting and bathing, we may find a form of care that enables older people to live independently.

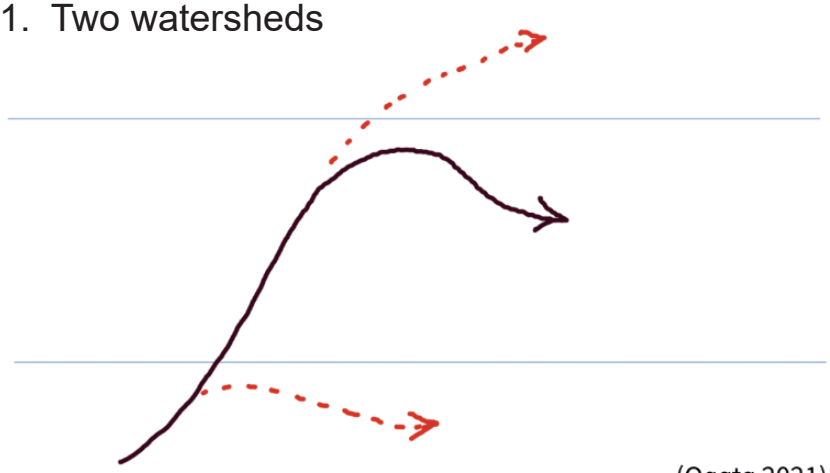
4. The use of care technology to enrich care

4.1 The search for technologies that embody the value of care

Technology enriches human life and brings significant benefits to humans, but it also risks hindering and destroying human life. In the same way, care technology may have the potential to improve the quality of life of older people and reduce the physical and mental burden on carers as well as having risk of devaluing care itself. Illich's theory of tools for conviviality provides helpful insights for considering the difference between two types of care technology (Illich 1973). Tools for conviviality are tools that give each person using them the greatest opportunity to enrich the environment because of his or her own imagination (Illich 1973). They are tools for living together, enjoying freedom concerning nature and maximising creativity.

Illich argued that there are two dividing watersheds that determine whether tools become convivial tools that fully empower human beings with their abilities and creativity without making them lose their agency or dominant tools that manipulate and create dependency. When crossing the first watershed, a tool can become a convivial tool, but crossing the second watershed, it becomes a dominant tool that deprives people of their agency. For example, an automobile improves mobility until it reaches a certain speed and density, but once it exceeds a certain threshold, society becomes its captive (Illich 1973; Ogata 2021). In other words, each tool has an appropriate scale and scope, and, while it is used proactively, it is fine, but from a certain point onwards, it can

Figure 1. Two watersheds



(Ogata 2021)

unwittingly dominate, and the agency is lost (Figure 1). Therefore, the appropriate space between the first and second watershed is the space for the right tool. Drawing on this, when care technology crosses the first watershed, it becomes a tool with the potential to increase the older person's ability to tend to their physical and mental conditions and needs and accept the responsibility of caring for and meeting those needs in a reciprocal relationship. When it crosses the second watershed, it becomes a tool that might hinder the development of the interrelationship between older people and caregivers and strengthen the perspective of labour saving and management. We must explore the tools between the first and second watershed to empower care practices centred on and operating within the human-to-human relationship.

4.2 A holistic perspective on the older people's life

As mentioned, the government set out priority areas for the development and promotion of care robots. They are mainly based on a care task basis (e.g. bathing assistance, toileting assistance). However, care is an activity that supports human life as a whole and is a human relationship itself. Caregiving should reflect a comprehensive view of the life of an elderly person, wishing for and caring for their wellbeing and assuming responsibility for their care. In this sense, to divide and define such a broad concept of care on a task basis could distort the value of care, and this would further lead to the development and use of technologies that can only cover certain dimensions of caring (Hämäläinen 2020). An approach is needed to develop care robots that enhance the quality of life of older people from a care perspective and foster a rich relationship between carers and users.

Okawa (2017) points out that the reason why many devices have not been implemented in the Japanese care practice, even though engineers increasingly invent care robots, is that they do not consider daily life activities as a series of movements in the whole life situation but target only specific movements. Furthermore, care robots have various impacts on a wide range of aspects of older people's life. Human life is highly complex, and we will be swallowed up in the waves of complexity, unless we have a clear cognitive framework that we constantly and consciously refer to. Therefore, Okawa proposes a

comprehensive examination of the impact of care robots on human living and the positioning of technology within this framework, based on the broad theoretical and practical framework developed by the International Classification of Functioning, Disability and Health (ICF).

4.3 Welfare governance of care technology

In section 3.1, I referred to Tronto's four phases that underpin good care (1. Caring about; 2. Caring for; 3. Caregiving; 4. Care receiving). Tronto later added a fifth phase, 'Caring with'. It is a democratic commitment to justice, equality and freedom, as human beings care for each other and capture the essence of the need for care (Tronto 2013, 2015; Itami et al. 2019; Mega and Oi 2019).

The situation regarding care technology in Japan lacks opportunities to think together and discuss how welfare equipment and care robots should be positioned in care. There are also limited opportunities for those who use technology (older people and carers) to express their voice in response to national strategies and projects. In the care sector in Japan, several provider associations, such as the Japanese Council of Senior Citizens Welfare Service and the Association of Care Goods Providers, submit written opinions to the government and attend council meetings to express their views and engage, to a certain extent, in policy-making. However, associations for care professionals and care workers' trade unions have a low organisation rate and are not involved in policy to any significant extent. Furthermore, there are no nationwide organisations for older people in Japan (although there are the Women's Association for a Better Ageing Society and Alzheimer's Association Japan, both of which are organisations mainly for the families of older people), and there is no organisational mechanism for the voices of the people concerned to be heard.

In Denmark, public administration is divided into three levels: national, regional and municipal. The regions are mainly responsible for healthcare, and the municipalities are mainly responsible for most matters relating to citizens' lives, such as social welfare, primary education, health and employment. In terms of care services for the elderly, the national government sets the general framework by law, while the municipalities set detailed regulations. Municipalities are also responsible for providing care services for older people, including welfare technology provisions.

In Denmark, Local Government Denmark (the main care service providers in Denmark), the trade union FOA (care workers) and the DanAge Association (older people) systematically work together and discuss policies relating to older people. Furthermore, it has been a legal requirement since 1997 for each municipality to establish an (elected) Elderly Citizen Committee consisting of older citizens aged over 60 years, and each municipality must consult the Committee when introducing or revising policy related to older people. User committees are also organised in each elderly care facility (Ishiguro 2016). The influence of care workers and (potential) recipient organisations of care on the policy-making process is a characteristic of Danish welfare governance, widely different from Japan.

According to Miyamoto (2006), there needs to be a shift from a 'needs-determining welfare state', in which centralised social services are provided based on uniform needs, to 'needs-expressing welfare governance', in which pluralistic actors try to act in a decentralised manner based on diverse needs. In the case of care technology in Japan, conditions are needed to enable communication between family members,

professionals, care workers and others that are centred on the person concerned and focus on their needs, how to support them and how their needs must be expressed.

4.4 Supporting self-determination of older people

Users should have the right to choose whether to use technology, and we need to ask older people if they wish to use care technology (Sparrow & Sparrow 2006; Wright 2019). In reality, the views and wishes of older people are most often ignored, and professional voices make many of the necessary decisions (Sparrow & Sparrow 2006).

Ueno (2011) argues for four human rights of care: (i) the right to care; (ii) the right to be cared for; (iii) the right not to be forced to care; and (iv) the right not to be forced to be cared for. Ueno argues that (iv) indicates that the needs belong to the person concerned, and that the judge of what is appropriate care is first and foremost the decision of the person being cared for. In the context of care technology, it is the older person that decides whether to receive technology-based care.

As for Denmark, this principle of self-determination has been emphasized. A report issued in 2013 by the Home Care Council, which was set up by the state in 2012, stated that maximum consideration should be given to older people who do not want to use welfare technology and that the choice to use it should be made by the older person (Hjemmehjælpskommissionen 2013).

4.5 'Local' care technology

In considering a sustainable care system for the future, it is necessary to distribute caregiving roles in society and restructure our daily lives so that everyone can be involved in care (Otsuka 2022). To this end, care robots must be accessible to everyone and easy to use for everyone. Ochiai (2021) envisions such a future of elderly care with the concept of "techno-*Mingei*". This term was inspired by the *Mingei* (folk crafts) movement of the 1920s, a lifestyle and cultural movement that found beauty in daily life tools created by unknown craftsmen, and is a vision of "locally produced, locally consumed technology" that will allow anyone to easily create and operate technology. The technology that everyone can customize and use according to local and individual needs, rather than technology that is controlled and manipulated by experts to subjugate citizens, will open the possibility of a society in which everyone can be involved in a relationship of care.

5. Concluding remarks

Looking at the latest developments in Japanese elderly care, Long-term Care Information System for Evidence (LIFE) began in April 2021 to realise science-based care (scientific care). In the future, utilising the accumulated information as big data is also in sight, and it is expected that artificial intelligence and robots will be used more and more in caregiving. As indicated in this paper, many issues are still unclear and need to be discussed to strengthen a care system in which humans and technology are in harmony.

The question is whether it is possible to find a framework/theory for the development and use of technology that embodies the values underlying care, rather than task-based, problem-solving technology development and use. After acknowledging the great potential of technology in care, Hämäläinen (2020) points out 'the habits, values and nature of caring actions are gradually transformed into something else when new technologies are applied'. Therefore, there is a need to seriously consider what constitutes

humanistic care and what technology can contribute as it becomes more and more integrated into society.

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Social Policy Towards 2050: In Search of Environmental and Social Sustainability

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Nobu ISHIGURO (Osaka University)
Norihiro NIHEI (University of Tokyo)
Ian GOUGH (London School of Economics)

Discussant: Yasuhiro KAMIMURA (Nagoya University)

Let us consider social policy towards 2050, as we stand at a turning point of the times. This is not merely a practical forecast like 2030 or a pipe dream like 2100, but rather a vision for the second half of the century.

However, if we cast our minds back 30 years, it was just after the end of the Cold War and the bubble economy, and only a few discussions at that time accurately predicted the current social issues. When considering the future 30 years from now, a concrete image will not be produced simply by extrapolating past trends in population, technology, and the environment. Moreover, when potential factors such as infectious diseases and geopolitical risks are suddenly thrust to the forefront, it is not easy to forecast even the next year.

Although it is difficult to predict the future, we can try to envision it with our imagination, taking several factors into account. In addition, it is also beneficial to identify some of the common pitfalls and unavailable options.

One hypothesis is that the return of big government is inevitable on a global scale, and international competition over its contents will start. Will we end up at the mercy of defence expenditure and pension liabilities, or will we be able to carve out a future by investing in education and the environment? As John Maynard Keynes wrote at the end of his General Theory, neoliberalism as a mindset is bound to dominate the next generation too. However, social policy studies are free from this mindset and can boldly develop new ideas.

Basic Assets for an Inclusive Society

Taro Miyamoto (Chuo University)

Social inclusion was a concept that, despite high expectations, tended to result in disappointment in social policy discourse around the turn of the century. Amid the rise of neoliberalism, it was coined as a social policy idea that was compatible with economic growth and supported by the middle class. However, inclusion into an exclusive society is a contradictory idea. In the United Kingdom, the measures promoted by New Labour were criticised for ultimately approaching neoliberalism. A proposal for a Basic Income subsequently spread in its place.

However, this is not a bygone issue. Prime Minister Fumio Kishida, who took office in

2021, has proposed a 'new capitalism' in which neoliberalism is to be reexamined and has placed 'investment in people' at the core of his policies. The argument of 'investment in people' as the interface between redistribution and growth is directly analogous to the past social inclusion theory.

Based on the above background, I will consider how the idea of social inclusion should be passed on to the future. To move beyond the contradictory expression of 'the inclusion into an exclusive society', the society itself must be transformed into an inclusive one. To this end, I will also examine how the concept of Basic Assets can be utilised to guarantee opportunities for inclusion.

Elderly Care and Technology

Nobu Ishiguro (Osaka University)

Japan faces serious demographic challenges as the proportion of elderly aged 75+ is set to rise rapidly over the coming decades and accordingly, the number of older people with care needs will increase. We also face the challenge of a shortage of care labour, as well as the precarious working conditions of care workers. Against these backgrounds, care robots are expected to become one of the solutions in the provision of sustainable elderly care. While care robots are yet to enter widespread use within Japanese elderly care, it is expected that more technology will be implemented in care settings, as approaches such as artificial intelligence, IoT and big data are currently under rapid development. This paper offers some perspectives as to how we can achieve successful elderly care system through utilisation of care technology.

How has the 'future of employment' been described? Focusing on the discourse of technological innovation from the 1980s to the present

Norihiro Nihei (The University of Tokyo)

The relationship between technological innovation and employment has become a focal point of the current discussion on the prediction of the future. The discussion has taken various forms, from the bold argument that the singularity of AI will wipe out most jobs to the 'soberer' argument that innovation in information technology is a skill-biased technological change that will create new jobs linked to the technology while simultaneously reducing the number of more outdated jobs. These predictions often form the basis of discussions about the future of social policy, which tends to raise the question of how the government ought to combine the provision of opportunities for human capital formation as a social investment and income security to mitigate the negative impacts of technological change on the labour market.

This study does not aim to judge the validity of these predictions. Rather, we will examine the types of assumptions about society upon which these predictions are based and the kinds of practice to which they have led. Specifically, I will analyse the descriptions and contexts of 'future predictions of technological innovation and employment' from the 1980s to the present, in order to grasp the specifics of the debate over future predictions in recent years, as well as to examine how these predictions have been influenced by the social perceptions of the 'present' at each point in time and how they have justified specific policies.

Two Scenarios for Sustainable Welfare: A Framework for an Eco-Social Contract

Ian Gough (London School of Economics and Political Science)

A fair transition to net zero in rich countries like the UK will need to pursue two strategies, each with profound implications for social policy. The first is the Green New Deal framework coupled with a 'Social Guarantee' of a guaranteed minimum income, plus expanded collective provision of essential goods and services. The second strategy goes further to counteract runaway private consumption in a constrained planet by starting a conversation on what constitutes sufficiency, and how we can conceive ceilings to income, wealth and consumption. Both would require rethinking the scope and capacities of an eco-welfare state but the second entails a more fundamental reorientation.

Strategy 1. Green New Deal plus Social Guarantee

Ideally a Green New Deal (GND) recognises and fosters synergies between safer climate and better welfare. At present GND plans come in different guises, such as the EU Green Deal plan, the Democratic Party campaign and the current Biden programmes in the US, and the Green Deal campaign in the UK. On the climate side, current GND programmes go beyond carbon pricing to advocate heavy upfront investment in both the public and private spheres. There is a clear awareness that carbon pricing is almost always regressive, more harshly affecting lower income households and localities.

Yet actual programmes are surprisingly thin on the 'social arm', often limiting proposals to better education/training and targeted protection for threatened communities. There is an urgent need for a new eco-social contract. To this end a new UK campaign proposes a Social Guarantee (SG) as a complement to a GND: to ensure every person's right to 'life's essentials' via collective provisioning. The idea is to build out from current rights, such as they are, in health and education to encompass other basic necessities, such as housing, adult care, childcare, transport and access to the internet. I discuss some of the implications of GND+SG for taxation, funding investment, and finance — issues too long neglected.

Strategy 2: Towards an Economy of Egalitarian Sufficiency

This first stage would mark a big leap forward but it will not be enough: dilemmas of inequality, consumption and unsustainable growth will remain. To address these it behoves rich countries to begin questioning consumption by switching from high- to low-carbon goods and services. Huge shifts in household consumption in developed nations will be necessary to achieve a '1.5 degree lifestyle'. Yet simply to reduce the floor in the developed world would deprive households of the vast range of goods and services — housing standards, personal transport, a range of clothing, a choice of nutritious diets, and so forth? that current minimum income studies have agreed are necessary for effective participation in modern life.

The focus must necessarily be on the excessive and dangerous consumption of the rich, starting with the super-rich. This will entail distinguishing the 'necessitousness' of consumer goods and services — whether they are essential, desirable or excessive — alongside their environmental impact. Sooner or later we will have to start discussing sufficiency or what constitutes an economy of enough. This will require thinking about an upper boundary or ceiling of riches, luxury and waste. Social policy, which has done so much to further the study and awareness of poverty, deprivation and exclusion, will need to focus its attention

on unsustainable income, wealth and consumption. In the era of the Anthropocene, social floors need social ceilings!

How can such a debate be pursued, let alone consensus be achieved, in a democratic yet hyper-consumption society? Sufficiency movements today increasingly turn to emerging forms of dialogic democracy, such as citizen forums, which bring together citizens and experts in a space as open, as democratic, and as free of vested interests as possible. Fortunately, we can now draw on the experience of large scale citizen's climate assemblies recruited from all groups in society lasting six months or more, such as the UK Citizen's Climate Assembly and the French *Convention Citoyenne pour le Climat*. By the end both had achieved an impressive consensus on a wide range of radical proposals covering eco-social policy.

These two strategies are radical and have big implications for the social policy community: the first raises new questions about financing the (eco-)welfare state. The second raises new questions about inequality, unsustainable consumption and excessive wealth.