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## Film Review

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Japan is often mentioned as the preeminent example of an aging society with the renown of having one of the longest life expectancies in the world. Other East Asian societies such as the so-called Four Asian Tigers – Hong Kong, Singapore, South Korea, and Taiwan – have followed a similar trajectory as their economies have expanded and standards of living have risen. Even China, once the most populous country in the world, is now undergoing a similar fate. At the start of 2024, the Chinese government announced the expansion of a ‘silver economy’ to address the increasing needs of their own ballooning elderly population. However, Japan is at the forefront of technological innovations for elder care. Prendergast’s first serious documentary film, *Circuits of Care*, offers a glimpse into some of the devices that have been engineered for elderly users and their caretakers in Japan.

The film does not feature a narrator; instead, it is interspersed with interviews from academics, engineers, and users who articulate the technological and ethical challenges under exploration in the film. *Circuits of Care* opens with a quote from the then Prime Minister Abe Shinzo in 2015, “Robots will dramatically change people’s lives and society. That is what makes this a robot revolution.” The film does not emphatically confirm this statement, rather, it allows the viewer to witness some of the inventions currently in development – such as ‘smart’ mobility aids that can detect impediments in the street – and their initial adoption among users in Japan. Automation and industrial robots are already ubiquitous in manufacturing, but as more products are developed for home use and care facilities, robots will eventually become indispensable tools for personal daily life. However, how they will facilitate and impact emotional attachment and sociality, is still an open question.

The images of high-speed trains, crowded street intersections with digital billboards, and convention attendees marveling at *kawaii* (cute) robots reflect how automation is already part of modern life in Japan. These interludes in the film reinforce the image of Japan as a technologically advanced society innovating their way out of their social problems, but also make the viewer reflect on the question whether this is the best solution to a broad-based demographic issue. In an interview, political scientist Naonori Kodate from University College Dublin explains that labor force shortages and government incentives are propelling this pace of robot development. But Kazuko Obayashi, director of the Flora Tanashi Nursing Home, is concerned about the practicality for elderly users. She notes in an interview that her two main concerns are improvement in the quality of life of the elderly and reduction of labor output by caretakers. From her standpoint, these are the primary considerations that designers and manufacturers should take into account.

The film takes us to the labs where these concerns ought to be shared. The research lab of Misato Nihei, a lecturer at the University of Tokyo Department of Human and Engineered Environmental Studies, is established for end-users to co-design assistive technologies that are responsive to their needs. The laboratory resembles a typically furnished home that includes different technologies such as a rising toilet seat and sensors that detect messiness, which can be an indication of neglect or incapacity. There is also a visit to the Robot Innovation Research Centre at the National Institute of Advanced Industrial Science and Technology that tests devices in development to anticipate safety concerns. Prendergast, anthropologist and director of the film, makes sporadic appearances in the film to demonstrate the ethnographic process in action as he tests the devices for functionality. For example, at Cyberdyne, a cybernetics company drawing on human information and robotics design principles, Prendergast wears a lumbar support skeleton designed for care workers who engage in a lot of bending and lifting. This exo-skeleton helps to prevent injury and should enable workers to stay in the workforce longer.

Testimonies by users of companion robots immediately speak to the potential of these technologies to improve quality of life. Masami Tanaka, a 75-year-old woman who lives with her elderly siblings, owns a Paro (a robot dog companion). She talks about how her 4-year-old grandson cannot resist chasing and hugging it, but unfortunately Paro automatically turns off when it is being touched. Another shortcoming is when Paro needs to sit in a recharging port and is unavailable to interact with her. As anthropologist James Wright (2023) argues in *Robots Won't Save Japan*, technological solutions are far from sufficient and can obscure the opportunities for deepening human relationships that will sustain elder care. Despite these complaints, Masami enjoys Paro's presence in the home because it dances when it sees her, or talks to the television when it is playing. She does articulate the critical distinction that Paro is a lively presence rather than a living presence. Still, she finds those mechanical forms of liveliness sufficient to keep her company when she is home alone.

The film was created in the midst of the recent COVID-19 pandemic and many assistive technologies were adopted under these severe circumstances. Footage of employees at the Flora Tanaka Nursing Home illustrates how certain devices enabled them to continue to offer care. For example, video sensors were mounted in rooms so the carer was able to monitor individual residents remotely and assess if they needed urgent help. As such, these sensors both relieved the workload for caregivers and offered a risk management tool. While it can be argued that these technologies can realize more qualitative care, they also only facilitate contactless care. This capacity to observe from afar is critical when vulnerable communities are under quarantine and contamination needs to be managed, but long-term monitoring and delivery of care through screens might increase alienation. Privacy is another major concern, and the film ends with a warning about safety and protection of personal information. Whereas the cameras only captured persons in silhouette, communication robots were used to engage the residents in conversation and record notes on each resident. Despite the fact that the film shows the successful use of these assistive technologies during the pandemic, little attention is being given to how robots must still work in tandem with continued human-based care.

*Circuits of Care* is an appropriate resource for a range of university courses exploring how science and technological development are responding to emerging social needs, and in turn, changing expectations of sociality. In terms of viewing accessibility, the film features subtitles that provide English translation throughout. The topic matter is also suitable for secondary school students and public audiences interested in the future of aging. The film serves as a good prompt to consider care and responsibility beyond human beings with devices engineered to perform the duties we expect from each other. Robots can certainly fulfill practical needs as demonstrated by the examples featured in the film, but a lingering concern is: can they fulfill the more intangible needs for empathy, attachment, and commiseration? The

viewer is left to wonder if techno-fixes are the most viable solutions to the enduring need for human connection.

## References

Wright, James. 2023. *Robots Won't Save Japan: An Ethnography of Eldercare Automation*. Ithaca, NY: Cornell University Press.