When Theory meets Practice in Entanglements of Ageing and Technology

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Abstract: This special issue contributes to the new academic field known as Socio-gerontechnology, which has emerged at the cross-section of STS and Age Studies. All contributions published in the following pages explore what happens when theories meet practice in the relation between ageing and technology, by pointing out the role of design(ers) in configuring and reconfiguring such a relation. In line with the so-called "engaged program" in STS, these articles address different topics of political importance and pragmatic relevance. Indeed, they share the critique of ageist images that underlie public and specialist discourses around ageing and technology. By combining the emancipatory thrive of critical studies of age and ageing and the nuanced STS approach to the study of the entanglements of ageing and technology, this special issue offers a collection of theoretical elaborations and methodological considerations developed along with empirical analyses. Overall, they explore the practical politics of technology, within the growing field of Socio-gerontechnology.

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Over the last two decades or so, the intersection of demographic ageing and technological change has received increasing attention by policy makers and academics. In European, national and global policy making, we see a trend to make old age policy in conjunction with innovation or digitalization policy (Neven and Peine, 2017). In Europe, for instance, large scale innovation and technology development programs fund re-

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search that explores how development in robotics, sensoring, artificial intelligence, and the like can be brought to bear on the lives of older people, and in particular support what is widely discussed in policy discourses as *active and healthy* ageing or *ageing in place*.

The notion of active ageing is, of course, a long-standing and contested one. McLean (2011), for instance, dates it back to the late 1990s, when the World Health Organization (WHO) began to promote the passage "from a 'needs-based' approach of passivity to a proactive 'rights-based' approach that encourages participation and 'equality of opportunity and treatment'" (p. 317). Lassen and Moreira (2014) point out that, while there is no agreement on a specific definition of active ageing, it is a *policy concept* that "usually refers to individual or collective strategies for optimising economic, social and cultural participation throughout the life course" (p. 33). According to this perspective, the active ageing concept is widely related to the functional capacity and engagement in social and productive activities throughout the life course. Such a life-style is meant as disability prevention and maintenance of independence, which are key goals for an ageing population. Critical studies of age and ageing, however, have long questioned the implicit normativities of the concept, where the emphasis on activity in later life, although seemingly just an innocent healthy recommendation at the surface, is rooted in neoliberal politics that delegate to (older) people the responsibility to function at a higher level, even when that is difficult or not desired (Katz 2000; Holstein and Minkler 2003; Katz 2013).

The normativities of active ageing and the "responsibilisation" (Urban 2017, p. 10) of older people are then also articulated and made operational in the technology and innovation policy programs driven by an active ageing perspective. Peine and Neven (2019) have recently analyzed this in terms of an *interventionist logic:* at their core, old age and innovation programs conceive of ageing and later life as largely unexplored territories for new applications and marketizations of digital technologies. In this perspective, technologies figure as "prostheses" meant to help older people fulfil the expectations devised at neoliberal subjects(Callon 2008; Peine and Moors 2015), enacting them as consumers and as being responsible for their health at the same time (Katz and Marshall 2018; Gilleard and Higgs 2021). But this interventionist logic widely ignores that ageing and later life have long been enmeshed with various technologies already (Loe 2011), including digital technologies like smartphones, social media and fitness trackers (Hebblethwaite 2016; Katz and Marshall 2018; Gallistl and Nimrod 2020). Such everyday encounters of older people and their friends, family and care givers with technologies, while increasingly studied in both Science and Technology Studies (STS) and Age Studies (Peine and Neven 2020), have been widely ignored by policy makers. This, we would like to add, also seems to be a missed opportunity to critically question the normativities of active ageing, and inform policy making with more empirically informed accounts of situated practices of ac-

tive ageing policies and the technologies associated with them (Bergschöld et al. 2020; Moreira et al. 2020).

The intersection of ageing and technology is thus a trending topic and it has received attention by scholars from the social sciences and the humanities from various domains. This is the new academic field increasingly known as Socio-gerontechnology (Peine et al. 2021), which has emerged at the cross-section of STS and Age Studies to address "the multiple and complex intertwinements of ageing and technology that already exist, and has begun to replace naive bio- and techno-deterministic understandings of ageing and technology with the emergence of empirical studies in the design and use of technology by and for older people […]" (p. 2). A common theme in Socio-gerontechnology is a *critique* towards simplistic ideas among policy makers, health-oriented researchers, and other practitioners that position ageing and technology as separate or even separable spheres, to explore instead the assemblages and enactments through which they exist only in relation to each other. Here, Age Studies have been particularly helpful in critiquing and debunking the often *ageist* images that underlie public and specialist discourses around ageing and technology, which implies a critique toward stereotypes that position older people as incapable and in need of help in relation to technology (Vines et al. 2015; Neven and Peine 2017); or a critique toward those normativities implicit to the rhetoric around positive ageing (Katz 2013; Lassen and Moreira 2014), which promote anti-ageing ideals as part of the legitimation attempts around many technologies targeted at older people.

This special issue contributes to this wider landscape of Socio-gerontechnology with critical studies of ageing and technology relations in design. In that sense, it builds further on what Cozza (2021) calls the "agential inseparability of ageing and […] technologies". That is, contributions in this special issue study "what elderliness means and how specific meanings of it come to matter at the expense of possible others through design practices" (p. 71). This is a topic where in particular STS approaches to the study of ageing and technology have been fruitful, because they can rely on the established STS tradition that understands design as "an intervention in practice" (Shove 2014, p. 41) through which designers configure materials, ideologies, and competences that affect the everyday life. When thinking about the ageing population and the unprecedented diffusion of technologies made with older people as the target group, the relevance of design emerges straightforwardly (Cozza et al. 2019; Cozza et al. 2020).

What is problematic in the relation between ageing and technology is, indeed, the role played by design(ers). For a long-time design practice has been inspired by the mass production doctrine "one size fits all" based on Dreyfuss' book, *The measure of man* (1960), which is widely acknowledged as the starting point for "human factors" in design. The last concept refers to a conception of persons as passive, fragmented, de-

personalised, and un-motivated individuals. This is in contrast to a view of people as "human actors" with personal objectives, aspirations and *agency* (Bannon 1991). By bringing this critique into the study of ageing and design, Coleman et al. (2003, pp. 3-4) point out that:

> it is now apparent that the "universal types" of much 20th century design failed those on the margins of society – especially as assumptions about what is "average" or "normal" have been too often based on the stereotype of the young, fit, white, affluent male.

In response to such perspectives, some design researchers interested in age and ageing have urged to open the black box of design, and analyse the configuring and re-configuring of ageing and technology relations in design by applying STS theories (Frennert and Östlund 2014; Östlund et al. 2015; Cozza et al. 2020; Jarke 2021). In line with this tradition and building on Kurt Lewin's maxim that "there is nothing as practical as a good theory", this special issue gathers contributions that explore what happens when theories meet practice. This purpose can easily be associated with what is known as the "engaged program" in STS (Sismondo 2008). Indeed, all contributions address different topics of clear political importance and pragmatic relevance in so far as the interactions between ageing and technology are treated as a site of study rather than a mode of analysis. Theoretical elaborations and methodological considerations are developed along with analyses that, within the growing field of Socio-gerontechnology, explore the practical politics of technology.

Nelly Oudshoorn, in her introductory lecture, urges us to move beyond approaches to STS that focus exclusively on technologies external to the body. Instead, she suggests that we need to reflect on "how human-technology relations may change when technologies move under the skin". In particular, she reviews three conceptual trends in the literature – the rematerializing of cyborgs, constructivist perspectives on vulnerability and resilience, and intersectionality – to raise important questions for future studies on ageing and technology about the reconfiguration of agency in times when more and more older people become "elderly everyday cyborgs".

Defining age and who is considered to be an old person is crucial as societal efforts for older citizens are increasingly based on scientific evidence and inclusion in technological development. In their article, Guillem Palà and Gonzalo Correa take as a starting point a conference that aims to give older people the opportunity to participate in the making of policies for the digitalization of society. The conference, which opened with attempts to define age in biological terms and chronological age, soon encountered difficulties. Using the "assemblages" of relations and interactions in the conference, the authors could study the configuration of age in practice, but more so, by launching the concept "infrastructuring", they show how these subjects and materialized objects are indispen-

sable components of this assemblage shaping the idea of what it is to become old.

Care robot ethics contains issues that have so far been overlooked both in STS user research and in usability experiments based on the moral imperative to first develop ethical guidelines which are then implemented in design as a guarantee of good care. Joni Jaakola, in his article, points to "ethics in practice" as a way to evaluate human-robot interactions in the care of people diagnosed with dementia. Using an ethnographic approach and script analysis when studying usability experiments in a care context, the author describes how ethics does not come out of universal moral values but is configured and based in care practice.

Elin Siira and colleagues, in their article, present an interesting analysis of how the logics of efficiency and effectiveness and the logics of care collide and are (partially) reconciled in specific co-productions of care. Using a case study of a peer-to-peer care initiative – the EU funded innovation project Give&Take – they unpack the complex and contradictory sociomaterial arrangements that constitute care within social innovations. They highlight in particular how the institutional logics that underlie many such initiatives challenged the possibilities to "co-produce opportunities for older people to care for each other". Ultimately, they conclude, a perspective on co-production of care practices and institutional logics may allow practitioners in policy and design to create "co-productions that serves and benefits from older citizens' care practices".

In her article, Cordula Endter applies a feminist STS perspective to analyse the politics of configuring older people as users in the design of technology. By mobilising the concept of "matter of care", Endter foregrounds the power relations and hierarchy that undermine the participation process and she re-frames caring as a responsible practice of accounting for the involvement of older people as users. This leads to question the goodness of user participation by examining the extent to which user-centred design actually empowers older people to participate in the design process and fosters a fit between technology and user needs. The author points out that actually the "good care" is not addressed to the users, but to technology, and that user-centred design should be turned into a matter of care in order to accounts for older people interests and needs rather than fitting them into the development of technology.

As Wanka and Gallistl (2021, p. 33) have recently argued, the practical relevance of STS studies on ageing and technology is often limited by a focus on "the deconstruction of processes without the aim for emancipation". For them, the main potential for a social science approach to ageing and technology lies exactly in the combination of the emancipatory thrive of critical studies of age and ageing and the nuanced approach of STS to design as configuring situated agencies between humans and non-humans. This special issue addresses this challenge. Overall, it allows to see not a conflict between theoretical interests and more pragmatic intentions but a potential overlap in studying ageing and technology.

References

Bergschöld, J.M., Neven, L. and Peine, A. (2020) *DIY Gerontechnology: Circumventing Mismatched Technologies and Bureaucratic Procedure by Creating Care Technologies of One's Own*, in "Sociology of Health & Illness", 42(2), pp. 232-246.

Callon, M. (2008) *Economic Markets and the Rise of Interactive Agencements: From Prosthetic Agencies to Habilitated Agencies*, in T. Pinch and R. Swedberg (eds.), *Living in a Material World: Economic Sociology Meets Science and Technology Studies*, Cambridge MA, MIT Press, pp. 29-56.

Cozza, M. (2021) *Elderliness: The Agential Inseparability of Ageing and Assistive Technologies*, in A. Peine, B. Marshall, W. Martin and L. Neven (eds.), *Socio-gerontechnology – Interdisciplinary Critical Studies of Ageing and Technology*, London, Routledge, pp. 70–84.

Cozza, M., Crevani, L., Hallin, A. and Schaeffer, J. (2019) *Future Ageing: Welfare Technology Practices for Our Future Older Selves*, in "Futures", 109, pp. 117-129.

Cozza, M., Cusinato, A. and Philippopoulos-Mihalopoulos, A. (2020) *Atmosphere in Participatory Design*, in "Science as Culture", 29(2), pp. 269-292.

Frennert, S.A. and Östlund, B. (2014) *Review: Seven Matters of Concern of Social Robots and Older People*, in "International Journal of Social Robotics", 6, pp. 299-310.

Gallistl, V. and Nimrod, G. (2020) *Media-Based Leisure and Wellbeing: A Study of Older Internet Users*, in "Leisure Studies", 39(2), pp. 251-265.

Gilleard, C. and Higgs, P. (2021) *Agents or Actants: What Technology Might Make of Later Life?*, in A. Peine, B. Marshall, W. Martin and L. Neven (eds.), *Socio-gerontechnology – Interdisciplinary Critical Studies of Ageing and Technology*, London, Routledge, pp. 99-111.

Hebblethwaite, S. (2016) *The (in)Visibility of Older Adults in Digital Leisure Cultures*, in S. Carnicelli, D. McGillivray and G. McPherson (eds.), *Digital Leisure Cultures – Critical Perspectives*, London, Routledge, pp. 106-118.

Holstein, M.B. and Minkler, M. (2003) *Self, Society, and the "New Gerontology"*, in "The Gerontologist", 43(6), pp. 787-796.

Jarke, J. (2021) *Co-Creating Digital Public Services for an Ageing Society – Evidence for User-Centric Design*, Cham, Springer.

Katz, S. (2000) *Busy Bodies: Activity, Aging, and the Management of Everyday Life*, in "Journal of Aging Studies", 14(2), pp. 135-152.

Katz, S. (2013) *Active and Successful Aging. Lifestyle as a Gerontological Idea*, in "Recherches sociologiques et anthropologiques", 44, pp. 33-49.

Katz, S. and Marshall, B.L. (2018) *Tracked and Fit: Fitbits, Brain Games, and the Quantified Aging Body*, in "Journal of Aging Studies", 45, pp. 63-68.

Lassen, A.J. and Moreira, T. (2014) *Unmaking Old Age: Political and Cognitive*

Formats of Active Ageing, in "Journal of Aging Studies", 30, pp. 33-46.

Loe, M. (2011) *Aging Our Way: Lessons for Living From 85 and Beyond*, New York, Oxford University Press.

McLean, A. (2011) *Ethical Frontiers of ICT and Older Users: Cultural, Pragmatic and Ethical Issues*, in "Ethics and Information Technology", 13, pp. 313-326.

Moreira, T., Hansen, A.A. and Lassen, A.J. (2020) *From Quantified to Qualculated Age: The Health Pragmatics of Biological Age Measurement*, in "Sociology of Health & Illness", 42(6), pp. 1344-1358.

Neven, L. and Peine, A. (2017) *From Triple Win to Triple Sin: How a Problematic Future Discourse Is Shaping the Way People Age with Technology*, in "Societies", 7(3), pp. 26-37.

Östlund, B., Olander, E., Jonsson, O. and Frennert, S. (2015) *Sts-Inspired Design to Meet the Challenges of Modern Aging. Welfare Technology as a Tool to Promote User Driven Innovations or Another Way to Keep Older Users Hostage?*, in "Technological Forecasting and Social Change", 93, pp. 82-90.

Peine, A., Marshall, B., Martin, W. and Neven, L. (2021) *Socio-Gerontechnology: Key Themes, Future Agendas*, in A. Peine, B. Marshall, W. Martin and L. Neven (eds.), *Socio-gerontechnology –Interdisciplinary Critical Studies of Ageing and Technology*, London, Routledge, pp. 1-23.

Peine, A. and Moors, E.H.M. (2015) *Valuing Health Technology – Habilitating and Prosthetic Strategies in Personal Health Systems*, in "Technological Forecasting and Social Change", 93, pp. 68-81.

Peine, A. and Neven, L. (2019) *From Intervention to Co-Constitution: New Directions in Theorizing about Aging and Technology*, in "The Gerontologist", 59, pp. 15-21.

Peine, A. and Neven, L. (2020) *The Co-Constitution of Ageing and Technology – A Model and Agenda*, in "Ageing and Society", pp. 1-22.

Shove, E. (2014) *On "The Design Of Everyday Life"*, in "Tecnoscienza: Italian Journal of Science & Technology Studies", 5(2), pp. 33-42.

Urban, M. (2017) *'This Really Takes It Out of You!' The Senses and Emotions in Digital Health Practices of the Elderly*, in "Digital Health", 3, pp. 1-16.

Vines, J., Pritchard, G., Wright, P., Olivier, P. and Brittain, K. (2015) *An Age-Old Problem: Examining the Discourses of Ageing in HCI and Strategies for Future Research*, in "ACM Transactions on Computer-Human Interaction", 22, pp. 1-27.

Wanka, A. and Gallistl, V. (2021) *Age, Actors and Agency – What We Can Learn from Age Studies and STS for the Development of Socio-Gerontechnology*, in A. Peine, B. Marshall, W. Martin and L. Neven (eds.), *Socio-gerontechnology – Interdisciplinary Critical Studies of Ageing and Technology*, London, Routledge, pp. 24-39.