Conclusion: Production, transmission and reproduction of ageist practices

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In most contemporary societies, a stigma is associated with elderhood (e.g., Calasanti & King, 2017; Gullette, 2017). Generally speaking, no one is thrilled about being labelled an "old person", and even some ageist approaches are described from third-agers towards fourth-agers (Kydd et al., 2018) – meaning from younger older adults towards the oldest ones. Along those lines, Margaret M. Gullette suggests that "ageing is the process that serves as the trigger for ageism" (Gullette, 2017, p. xiv), while it might be the reason why ageism is all around (Gullette, 2017; World Health Organization, 2017).

This book aims to shed light on how ageism operates in the digital realm and how this influences society at large. It is a relevant issue given the hyper-digitisation processes of contemporary societies, which accelerated even more with the COVID-19 pandemic outbreak in 2020 (e.g., Aarts et al., 2021; Nguyen et al., 2020). In addition, it considers the intersection of ageing and (digital) technology a "privileged standpoint" for approaching the study of ageism (Comunello et al., 2023, p. 18). By analysing digital technologies – their materiality and performance, their associated values and symbols, and the cultures around them – in relation to old age, this volume contributes to producing emancipatory resources that, as cultural gerontologist Stephen Katz argues, are needed for a better understanding of increasingly ageing societies (Katz, 2014). While ageism mainly belongs to the ageing studies field (Levy & Macdonald, 2016), it would be a mistake to keep the analysis of its roots and consequences confined to this single area of knowledge. Ageism, in fact, shapes all of society, as this volume discusses through a range of different studies that focus on how elderhood is depicted, practised and understood.

Two research questions articulate this volume. First, how does ageism operate in hyper-digitised societies? And second, what would be the strategies to tackle ageism? To answer them, I propose two levels of analysis that articulate the discussion below: ageism at the design level and ageism at the symbolic level. Inspired by Francesca Comunello et al. (2023), the two levels of analysis can be connected to the space of multiple modes of ageist exclusion (Sassen, 2014) that Justyna Stypińska et al. (2023) find in the technology industry. The authors identify three dimensions in which the Silicon Valley

culture exerts its practices of exclusion towards those individuals "considered old" (Rosales & Svensson, 2021): products and services, ideology and narratives, and work relations and workspaces. These dimensions are embedded in the two levels of analysis, I propose. First, the design level includes the products and services dimension, as the former is necessary to define and materialise the latter. The design level, however, is broader. It also involves other areas, such as the design of workspaces and work relations, the design of public policies and scientific research design in any field, including social sciences and humanities, to name a few. Finally, the design level is directly attached to decision-making processes. Second, the symbolic level relates to the dimension of ideology and narratives. Again, work relations and even workspaces also have a symbolic dimension, as many other aspects of everyday life that, among others, concern communication.

A feedback loop operates as the design and symbolic levels shape each other. Relevant elements in such a loop are the stereotypical assumptions of old age, which reinforce both ageism in general (e.g., Billette et al., 2020; Gullette, 2017; Levy & Macdonald, 2016) and internalised ageism – or self-ageism – in particular (e.g., Köttl et al., 2021; Vickerstaff & van der Horst, 2022). Ultimately, the associated practices the loops produce and reproduce can contribute to old-age exclusion (Walsh et al., 2017). In this sense, empirical evidence should help debunk the myths or stereotypes that feed and support ageist practices.

Some evidence on how ageism operates

Ageism at the design level

Human-computer interaction (HCI) constitutes a key area of study for the design of services and products. As with other areas of knowledge, it shows an increasing interest towards including the perspective of the older population. Sergio Sayago (2023) identifies three stages. After an initial period when old age was not considered in the design of services and products, a second stage included old age but from a patronising perspective mostly based on stereotypical assumptions of what it means to be old. The current and third stage includes older people's voices to avoid ageism in products and services. Therefore, some sensitivity is already being incorporated that moves beyond the youth-oriented ideal user (Rosales & Svensson, 2021), although there is still significant room for improvement. The trends in the HCI field might resemble current dynamics in society, where older adults are starting to be less "invisible", meaning there is more interest in them, for instance, in mass media or advertisement (as discussed in Ylänne, 2022).

Of relevance is the role of empirical research that feeds evidence-based decision-making in the public and private sectors (e.g., Denzin, 2017; Parkhurst, 2016). As noted by different authors in this volume, there is a risk of perpetuating ageist practices in different stages of empirical research, and a reflection

on research design becomes crucial to tackle the issue. First, Sarah Wagner and Akiko Ogawa (2023) reflect on the practicalities of a case study in Japan and Canada that invited individuals over the age of 80 living in a retirement home to participate in a digital storytelling workshop around ageism. In this case, the authors observe how the facilitators' expectations, together with the surrounding technical architectures and the material objects, could affect the participants' experience within the workshops. They conclude that "socio-technical interventions "must engage older participants, legitimise their contradictions and incorporate their inputs into the intervention's digital practices" (Wagner & Ogawa, 2023, p. 226). Second, Maria Sourbati (Sourbati, 2023) identifies how age biases shape the public transportation system in London (UK), particularly when artificial intelligence-based systems rely on digital datasets that exclude less digitised groups, such as older adults. She recalls that determining the characteristics of the datasets is as relevant as identifying the data not collected (Sourbati & Behrendt, 2020) to identify the strands of exclusion. Finally, in their chapter, Emma Garavaglia et al. (2023) initiate a discussion about such risks in the social sciences field, particularly when the analysis involves digital technologies and old age. Based on their experience conducting research in Italy, they focus on research practice and discuss different techniques and approaches to critically face the (still) silent ways in which ageism is embedded in research design.

Two chapters provide interesting examples of how old age – and its diversity – can be incorporated into different types of research projects. First, Roser Beneito-Montagut et al. (2023) established a permanent dialogue with participants in their ethnographic research in Barcelona (Catalonia, Spain). With this strategy, the authors avoided imposing imported frameworks and ways of doing research that do not consider older people's experiences, particularly older women. Second, in their research in six Latin American countries (Argentina, Colombia, Ecuador, Guatemala, Paraguay and Peru), Barrantes et al. (2023) rely on a survey that did not impose any upper age threshold in the target population – similar approaches can be found in König et al. (2018) and Rosenberg and Taipale (2022). On the other hand, Barrantes et al. fieldwork relies on face-to-face data collection. It avoids the coverage bias associated with fully online methods (e.g., Dutwin & Buskirk, 2022; Mohorko et al., 2013), which comparatively exclude more those populations with a higher digital divide, such as older populations. To be noted is that the authors' analysis was only possible thanks to the design of the original survey, which in this case acts as secondary data, meaning that the data is reused from a previous project.

Even before defining the empirical design details, research projects usually rely on secondary data to contextualise and fine-tune the planned work. A significant number of quantitative analyses depend on secondary data – available on a free-access basis or under a paywall. Those data can be either big data sets or more traditional statistics data sets. A common issue

is the existing data gap when the object of research lies at the intersection of digitisation and old age, as claimed, for instance, by Fret et al. (2019) or Ivan (2017). They found no appropriate secondary data on the matter. Also, from retirement age onwards, older people tend to be homogenised, as discussed by Amaral et al. (2018), meaning that several age groups are treated as a single social category (e.g., the over 65s). In such contexts, it is possible to talk about data ageism (Fernández-Ardèvol & Grenier, 2022; Fret et al., 2019), which renders part of the population invisible to the eyes of data users (Rosales & Fernández-Ardèvol, 2019). Data ageism "results from decisions on how data are collected and delivered that, although well-intended, tend to produce and reproduce the disadvantaged status of old age (Calasanti, 2020; Calasanti & King, 2021)" (Fernández-Ardèvol & Grenier, 2022, p. 11). The data gap, or data divide (Milan & Treré, 2021), operates not only at the country level but might also prevent comparisons and analyses that involve more than one country.

Besides the data divide, Jane Vincent (2023) expressed concern regarding the use of chronological age as "the" indicator of old age diversity and analysed the case for the UK. Remarkably, she questions how individuals' life stages are accounted for – if they are – and the consequences of perceptions and representations of old age. The author discusses the obstacles preventing more accurate representation of old age, an issue that comparatively affects the oldest individuals more and those who might be identified as fourth age (Higgs & Gilleard, 2015). For instance, vulnerability tends to be associated with old age and even more with very old age. Henderson and Sawchuk point out that a simplistic use of the term might enforce those narratives that construct older people as necessarily vulnerable instead of considering the conditions that would render a person vulnerable (Henderson & Sawchuck, 2022). It is not age but life conditions that should count, and those should be known in advance to avoid inaccurate representations of old age and its diversity. For that reason, Vincent advocates a "life stage approach to studies about digital technologies that is inclusive of all ages, so [the] cultural imaginaries of the oldest old can be replaced with factually relevant evidence pertaining to life events rather than age" (Vincent, 2023, p. 38). Here, relevant life events might be related to the conditions that create vulnerability, which are not necessarily associated with chronological age.

Ageism at the symbolic level

At the symbolic level, textual and visual narratives play a role in the representation of old age and ageism (Loos & Ivan, 2018; Phelan, 2018) and constitute one of the many elements that shape the existing cultural imaginaries of the intersection of ageing and digital technologies.

Regarding narratives, two chapters connect to the *magic* and normative concepts of "ageing well" and "active ageing". Originally aimed at dissociating old age from dependency (Taghizadeh Larsson & Jönson, 2018),

they constitute critical elements of public policies (Chapman, 2005; Foster & Walker, 2015). These have been extensively criticised for their neoliberal connotations, which would make older individuals responsible for their own well-being (Dillaway & Byrnes, 2009; Ivan & Loos, 2023). In addition, both provide evidence of the intersection between ageism and sexism. First, Inês Amaral and Marta Flores (2023) focus on the collective appropriation of the concept of active ageing on a particular digital platform, Instagram, to determine how collective narratives on social media depict gender and ageing. Their analysis covers the Portuguese and Spanish linguistic spheres, two major languages with a presence in Europe, Latin America and Africa ("List of Countries and Territories Where Portuguese Is an Official Language", n.d.; "List of Countries Where Spanish Is an Official Language", n.d.). They observe that, in these linguistic communities, most narratives on active ageing reproduce traditional hegemonic gender roles and heteronormative logics. In contrast, there appears to be some evolution in the narratives of old age. The authors qualify as advancement the presence of narratives that move beyond infantilisation, considering older people as responsible and capable of taking care of themselves – which, to my understanding, aligns with some of the neoliberal connotations of the active ageing and ageing well paradigms.

Second, Loredana Ivan and Eugène Loos (2023) analyse the visual representation of older adults in advertisements and marketing strategies for technological products. They rely on a systematic literature review of empirical studies indexed in selected academic databases and published in English between 2011 and 2021. Their findings are less optimistic than the ones obtained by Amaral and Flores. For instance, older adults tend to be more associated with mechanical technologies, such as cars, than digital technologies. The expert role is associated with traditional technologies, whereas older individuals usually play a secondary role when they are sophisticated or digital. The authors consider that the visual portrayals of men are comparatively more positive, mainly due to the lower frequency with which women are included. When they are, they appear in heteronormative couples or the technology is not pictured, delivering the idea that they are not the ones who manipulate or drive the technology and therefore depend on others to use it.

Regarding the cultural imaginaries of old age, it is relevant to recall how these build upon stereotypes and other inaccurate representations (e.g., Sawchuk et al., 2020; Voss et al., 2018). They tend to homogenise old age, ignoring the existing diversity of this life stage – an issue that Bernice Neugarten (1996) already discussed in the 1990s. Magdalena Kania-Lundholm (2023) explores the issue in Sweden, where she confirms how older adults cope with (self-) expectations around their ability to live in a hyper-digitised society. She notes how the paradoxical discourses of connection and disconnection shape older adults' digital practices and the narratives around these. Such narratives are shaped by the negative perceptions of age in the digital technology sector (Rosales & Svensson, 2021). Along those lines, Justyna Stypińska et al. (2023) analyse Silicon Valley (California, US), the iconic location where

the digital technology industry was initiated. They suggest the term Silicon Valley Ageism and propose a framework to conceptualise it, which applies to other kinds of biases in any industry. An essential dimension of its ageism is the prevalent fascination for the youth of Silicon Valley and, more generally, the digital technology industry. On those lines, Jakob Svensson (2023) traces, from a historical perspective, the roots of the technology culture's youth orientation based on research conducted in Brazil, Denmark, Germany, India, Sweden and the US.

Old age as a periphery of digitised societies

To my understanding, part of the problem is that old age constitutes a social periphery. More often than not, entering old age and retirement implies being located in a particular "social location" (Calasanti & King, 2017, p. 38) that pushes the individual from a central position (active in the labour market) to the margins of society (retirement). I call these margins (e.g., Krekula et al., 2018) the periphery. Individuals lose their productive value (if any had ever been recognised) and are deemed to be a burden to societies (e.g., Ginn & Duncan-Jordan, 2019; Mander, 2014). As pensioners, they become dependent on active workers; as individuals, they are more likely to need health and care services. In this context, ageist metaphors such as the "grey tsunami" arose, delivering the idea that the demographic shift represents a challenge, a problem to be tackled because it threatens the existing welfare (Barusch, 2013). Also, the fourth age might be seen in more negative terms than the third age, as recently discussed by Higgs and Gilleard (2022).

I argue that older people's disadvantaged position is amplified and exacerbated when the digital dimension becomes essential, as in contemporary societies. One reason is the age-based digital divide, which is the most pervasive nowadays (e.g., Eurostat, 2022; Sala et al., 2020). The other is the youth orientation of digital culture, which tends to disregard old age and, in some instances, penalises it (see Stypińska et al., 2023; Svensson, 2023). As mentioned above, ageing means facing ageism. Tensions arise due to the contradictions in which older people get trapped as societies are profoundly ageist. Individuals live with and negotiate stereotypical and self-stereotypical assumptions of old age and digitisation (Beneito-Montagut et al., 2023; Kania-Lundholm, 2023).

On digital platforms such as Instagram, there appears to be a trend towards the perpetuation of discourses on hegemonic roles, where sexism and ageism go hand in hand (Amaral & Flores, 2023). Of interest is that older adults are constructed as "the others", and these discourses of alterity reinforce the idea that older adults constitute a peripherical population in terms of the dominant discourses on the platform. Such a peripheral position, which might well be the same in other online platforms, is also observed in visual representations of old age in advertisements (Ivan & Loos, 2023) and in smart mobility systems (Sourbati, 2023).

Recommendations

Strategies to tackle ageism include awareness campaigns and focused interventions with particular collectives (Officer & de la Fuente-Núñez, 2018). In this section, nevertheless, I focus on research design, a dimension that, to my knowledge, needs further discussion. As mentioned above, different chapters in the volume discuss the process and the tools available for analysing old age in the same terms as any other life stage. Thus, Jane Vincent argues, "We cannot leave the acquisition of new knowledge about the oldest only in the hands of those researching the oldest; this approach makes the research an exception rather than part of the norm" (Vincent, 2023, p. 46–47). The same is valid for the more general social category of "older adults". While there is more interest in and more empirical evidence on older adults compared to the oldest older ones, there is still significant room for improvement.

Research on old age, whether in HCI or social sciences, should avoid importing themes, codes or categories from mainstream research (Fernández-Ardèvol et al., 2017). Wagner and Ogawa (2023) demonstrate that even minor practicalities should be questioned, which Beneito-Montagut et al. (2023) implement in their research. To my understanding, the strategy should be incremental so that researchers can introduce improvements in each new iteration or project. Here, Garavaglia et al. (2023) highlight the need for suggestions and examples on how to properly involve older people in digital research design. The authors mention the use of tailored procedures. In contrast, there is also a need to take approaches that acknowledge and embrace heterogeneity (Meunier et al., 2013) together with flexibility and reflexivity (Billo & Hiemstra, 2013) during the research process. As a matter of recommendation, I would call for reflection on ideas and practices for non-ageist research in a digital world, highlighting seven aspects (ACT project Manifesto, summarised on Fernández-Ardèvol & Blanche-Blanche-Tarragó, 2019). First, acknowledge and embrace the existence of old age as a relevant stage in the life course that, as with earlier life stages, should be subject to scientific study. Second, give older people [whether younger-old or older-old] the same chance to participate in research projects as younger people. Third, include older participants in a way that accounts for their diversity. Fourth, expand diversity among older ages by including other distinguishing factors and acknowledging intersectionality. Fifth, avoid ageism in all stages of the research process. Sixth, avoid using emotions instead of argued reason or critical analysis. And seventh, avoid patronising relationships with older people throughout the research project.

Finally, Vincent (2023) suggests that a possible way of addressing ageism in research design, whatever the discipline, would include incorporating the issue, on the one hand, in research projects' codes of practice and, on the other, in project approvals and publications based on peer evaluation. From my point of view, such an ambitious goal would need a previous discussion, so the concern for avoiding ageism in research becomes part of the academic culture.

Ageism or *ageisms*?

The more we know about ageism, the more nuances arise to qualify and explain this complex phenomenon, as discussed in the introductory chapter. Contributions in this volume are not immune to such trends, so some chapters propose new concepts or relate to particular conceptualisations of ageism. To illustrate the trend, I focus on collocations that add an adjective to the noun "ageism" (see a summary in Table 1). To my understanding, the use of that particular structure exemplifies how authors reflect on the

Table 1 Particular concepts of ageism used in the volume

	Internal conceptualisation	*External conceptualisation*
Beneito et al.	Techno-ageism/ technological ageism	-
Barrantes et al.	-	Structural ageism (no source mentioned)
Comunello et al.	-	Digital ageism (Chu et al., 2022)
Garavaglia et al.	Methodological ageism	Compassionate ageism (Binstock, 2010)
Ivan and Loos	Visual ageism (Loos & Ivan, 2018)	-
Kania-Lundholm	-	Digital ageism (Manor & Herscovici, 2021)
Rosales et al.	Digital ageism	Digital ageism (Ahlawat, 2022; Berridge & Grigorovich, 2022; Chu et al., 2022; Gauthier & Sawchuk, 2017; Hebblethwaite, 2016; Lee & Hoh, 2021; *Mandate ACT Project*, 2014; Manor & Herscovici, 2021; Neves et al., 2022; Romero & Ouellet, 2016; Sawchuk, 2015)
Sourbati	-	Digital ageism (inspired by Cutler (2005) and Ivan and Cutler (2021), although these references develop the concept of ageism and technology in general)
Stypińska et al.	Silicon Valley ageism	Part of the framework relies on Manor and Herscovici (2021), although the authors do not explicitly use the term digital ageism
Vincent	-	Structural ageism (Rosales & Fernández-Ardèvol, 2019) Institutional ageism (Lloyd-Sherlock et al., 2016)

Alphabetical order by first author. Only chapters using the collocation "adjective + ageism" are included.

multi-dimensionality of the issue, while I do not claim this to be the only way of conceptualising ageism. Authors rely on internal and external conceptualisations. Here, internal refers to concepts proposed by the authors (in this book or elsewhere), and external refers to terms proposed by other authors and used in the chapter. I invite the reader to consult the corresponding article for further details and definitions. Here, the interest is in illustrating the diversity of *ageisms* (in plural), as already made evident in publications such as *Contemporary Perspectives on Ageism* edited by Liat Ayalon and Clemens Tesch-Römer (2018).

Concluding remarks

Older people, whatever their age, are citizens (among others, of smart cities). They are workers, leaders, and clients of the digital industry. They are also part of the hyper digitised network society – although not always recognised as such. Older individuals are consumers of digital technologies, digital platforms, and, more generally, constitute the human factor in HCI. As part of the digital culture, like any younger individual, older people make everyday life decisions regarding their relationship with digital technologies. However, those are shaped by age-based stereotypes and biases.

The book critically analyses the transmission chain(s) that (re)produce ageism in key spheres of (digital) technology. It sheds light on how ageism functions in the digital realm, from design to usage, and how it affects society. Hence, the different contributions in the book show how ageism operates in the design, development, and use of digital technologies and reflect on how this shapes power relationships at large, bringing ideas on how to counterbalance its impact. This volume might present more questions than answers. For instance, what would be the mechanisms to break with such dynamics? Is there an actual desire to fight ageism, or is there a more urgent need to increase general awareness about the issue? Would it be realistic to expect a reduction in some strands of ageism the moment the age-based digital divide is overcome?

This book is not aiming to be a critique of the critique, which is paralysing. Instead, it looks for a compromise between analysis of the situation – the critique – and possible reflections (and actions) regarding ageism and digital technology. Given the perspectives gathered throughout the chapters and the diverse typologies of ageism they consider, this volume can be said to open, or at least broaden, a discipline.

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