

# Ageing and innovation

## Exploring a collective matter of concern

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### 1. *Introduction*

Over the last few decades, the broad and interdisciplinary field of age studies has driven scholarly attention toward considerations of demographic ageing as an opportunity for the development of scientific and technological innovations aimed at ensuring the health and well-being of older people (Peine, Neven 2020). Several innovations have emerged with the aim of improving the health and well-being of senior citizens, including complex remote monitoring systems, self-tracking devices, ambient assisted living environments, regenerative medicine and tissue engineering, new medications for preventing or managing chronic illness, and diagnostic tools for supporting a personalized care path. The recent Covid-19 pandemic has enhanced research processes in various fields (e.g. diagnostic, vaccines and therapeutics, public health), stimulating the emergence of public narratives about older people's health and desirable techno-scientific solutions for containing the effects of the epidemic on this target population.

The so-called *grand challenge of ageing* (Peine *et al.* 2015) has mainly been addressed through an intervention logic whereby users are perceived as «targets» of techno-scientific instruments aimed at solving their needs (Peine, Neven 2019). From this perspective, technology and science are entities external to society, which, thanks to the work of the experts, can improve the overall conditions of elderly people. This logic is generally implicitly interwoven with polarized visions of aged people. On one hand, older people are frequently depicted as a «problem to be solved» and as needy and passive recipients of innovative products for their health and well-being (Cozza, De Angeli

2015). On the other hand, in close connection with well-known biomedicalization processes (Clarke *et al.* 2003; 2010), elderly people have increasingly been represented as bodies that can be optimized, assuring them a future in which they will be capable of «growing older without ageing» (Kaufman *et al.* 2004, 736). These apparently contradictory visions of ageing share the stigmatization of old age, represented as undesirable conditions that must be tolerated and managed or hindered through techno-scientific interventions.

Over the last few years, Science and Technology Studies (STS) and Socio-gerontology have moved beyond the interventionist logic, contributing decisively to the emergence of an alternative perspective on ageing. Joyce and colleagues (2017, 916) observed that «STS scholars have identified the intersection of technology, science, and ageing as a key issue for contemporary societies and are working to significantly improve understandings of how the lives and livelihoods of elders are bound up with technologies, science, and technological systems». More recently, Cozza and colleagues (2020, 120) stressed the importance of exploring how discourses and materialities about ageing and techno-scientific innovation are tied together in processes of *entangled becoming* (see also Orlikowski, Scott 2008), where they become mutually constitutive. From this perspective, technology and science are not neutral; they bring with them images of ageing that contribute to the reconfiguring of bodies, needs, self-representations, and the habits enacted by people involved in ageing processes. At the same time, the latter are an active part of enduring socio-material worlds, with which new techno-scientific objects must come to terms.

This special issue aims to move in the latter direction. It offers a multifaceted mapping of the current debate about how ageing and innovation shape each other through the involvement of heterogeneous actors such as scientific communities, market and industrial systems, digital media, self-tracking technologies, clinicians, and the elderly and their social networks. The contributions position themselves in this debate, enriching it with original content and adopting theoretical perspectives at the crossroads of STS, media studies, and the sociology of health and illness. In order to present the selected papers and the rationale behind their inclusion, we identify three main themes: ageing research and medicine; ageing, social media, and public

discourses; and ageing, ICTs, and daily life. After presenting each theme and the corresponding papers, we focus the conclusions on the emerging image of ageing: *a collective matter of concern marked by multiplicity*.

## 2. Ageing, research, and medicine

The first dimension that brings together the contributions of this special issue concerns the ways in which ageing is addressed in clinical and scientific research. Two main strands of research that have been active in recent years can be identified. The first concerns the discourse on *active ageing*, which studies the importance of focusing as much as possible on extending life expectancy. The roots of this concept can be traced to the 1940s and 1950s when socio-gerontologists stressed the importance of an active lifestyle in old age for personal life satisfaction, a viewpoint later termed *activity theory* (Lynott, Lynott 1996). The active ageing discourse stimulates the ongoing participation of older adults in society and involves some form of «competence-thinking»: the historical focus on what older adults can no longer do (i.e., their deficits) is replaced by an emphasis on their competence and knowledge (Jacobs 2005; Boudiny 2013). STS scholars and medical sociologists have problematized practices and discourses associated with the active ageing concept, arguing that they push the elderly to imitate performances and desires commonly associated with younger bodies, implicitly stigmatizing those who choose inactivity (or who cannot avoid it).

An interesting part of the active ageing rhetoric concerns the discourse on sex in later life, as shown by the contribution of Raffaella Ferrero Camoletto, which reports that medical discourses have long seen older people as desexualized, describing ageing as a natural decline in sexual desire and capability. As widely depicted in the medicalization literature, recent decades have witnessed a significant change in the cultural and scientific landscape, with sexuality re-emerging as part of healthy ageing and lifelong well-being (Marshall 2011). Starting from a thematization of the effects of the medicalization of sexuality, which was generated by the spread of the erectile dysfunction drug Viagra, the contribution explores the transformation of sexual life in the elderly in an era in which pharmacology allows the

diversification of forms of sexual expression. The originality of Camoletto's contribution consists in analyzing the plural and controversial discourses on male sexual ageing in the Italian context by looking at both general practitioners' and older men's narratives and focusing on the ways through which Viagra changes not only sexual performance but also the broader sense of sexual ageing.

A second strand is the scientific research on biological age. One key debate within the sociology of ageing and the life-course in the past decade has been on understanding the extent to which life-course processes have become de-standardized (Moreira 2015). With the aim of investigating the social processes involved in the production of new scientific knowledge around the biological processes that modulate ageing, the contribution of Micol Bronzini critically analyzes the development of an interdisciplinary project that aims to produce a system for measuring age and ageing intervention. In the medical context, where age is becoming an increasingly valuable indicator, especially with regard to health promotion and prevention measures, chronological age is an unreliable indicator. The author takes into consideration a hitherto under-investigated process in the sociological literature and describes how biomedical research intends to produce an alternative, personalized age measure. Here, biological age is interpreted as a form of de-standardization of the conception of age and, more generally, of the representation of and ability to intervene in life. In this context, ageing becomes a new frontier of biomedicalization, biopolitical intervention, and commodification.

The articles show various kinds of *entanglements* between ageing and techno-scientific innovation in research and medicine, underscoring the mutual constitution between these dimensions and presenting alternative views on ageing and aged bodies. On one hand, as we have seen in the article by Ferrero Camoletto, previous medical innovations have had important consequences for the social representations and normative expectations emerging around older people, shaping the discourses around active and healthy ageing. On the other hand, the contribution of Bronzini highlights that the trajectories of biological ageing are far from linear and taken for granted and that they are continuously contested and renegotiated by experts in scientific communities.

### 3. Ageing, social media, and public discourse

The second dimension explores ageing in the public discourse, with particular focus on social media, which can be conceived as complex *healthscapes*, i.e. assemblages of words, images, and material cultural objects that can reproduce or challenge the ideological and cultural framings of health, illness, healthcare, and medicine (Clarke 2010). Over the last years, social media have become contexts in which discourses about ageing are continuously enacted, producing knowledge about what it means to grow older, indicating social norms and expectations around the different stages of the life-course, and depicting futural imaginaries about ageing. In particular, social media seem to play a crucial role in enhancing or subverting the idea of older people as «people in need» and in defining the techno-scientific and political scenarios concerning health and ageing.

As the Covid-19 pandemic spread, the media consistently paired the terms «vulnerable» and «older people» in their coverage. Although well-intentioned, this messaging had two very damaging consequences as it strengthened the homogeneous view of older adults as vulnerable, an already widely embedded negative stereotype relating to age. Since the start of the Covid-19 outbreak, the influence of the pandemic on the spread of ageist discourses has been faced by a considerable amount of literature focused on various national contexts (Ayalon *et al.* 2020; Fraser *et al.* 2020; Jimenez-Sotomayor 2020; Zhang, Liu 2021).

Until now, most published studies have been primarily based on a limited amount of data, which have rarely addressed the Italian context (Søraa *et al.* 2020). The contribution of Alessandro Caliendo, Emma Garavaglia, and Guido Anselmi narrows these gaps by conducting a mixed-methods study exploring discourses on ageing within the Italian Twittersphere during the first Covid-19 peak. The study highlights the residuality of discourses that ridiculed or offended older people or implied that the life of older people was expendable in the name of the economy, underlining how these narratives were reproduced mostly by ordinary users, those who were less active and with a lower Twitter status (no retweets received, few followers, etc.). However, most discourses, even if not explicitly promoting negative ageist stereotypes, tended to define old age as homogeneously characterized by fragility. The authors described the discourse on ageing

as a «platformized ageing discourse» in which the category of older people is used as a platform (Abidin 2021) to circulate, amplify, and vehiculate a highly scattered and heterogeneous set of personal opinions.

Along with the dissemination of the ageist discourses, this special issue tackles a complementary phenomenon: the diffusion of public discourses about anti-ageing medicine. Anti-ageing medicine represents one possible extension of biomedicalization processes. Instead of particular mental, physical, or emotional processes being turned into a disease, the ageing process itself is now understood as a pathology (Joyce, Loe 2010). Although the history of anti-ageing medicine began in the early 1990s, over the last twenty years, this field has become increasingly institutionalized, especially in the United States, thanks to the alignment with the broader biomedicalization processes mentioned in the introduction. The essay by Ilenia Picardi and Maria Carmela Agodi presents an original take on these issues by considering anti-ageing medicine in the Italian context and introducing the concept of the *refused knowledge community*. The article explores how discourses around the health benefits of alkaline water, a product labelled as «pseudoscience» which has hitherto been regarded as refused medical knowledge, have sought an alliance with anti-ageing medicine to gain legitimacy. The authors conducted digital ethnography to investigate the construction of narrative and media practices around various online spaces (i.e., Facebook, YouTube, LinkedIn, Zoom) following attempts by the promoter of alkaline water to become embedded in the dominant anti-ageing culture and market. As observed in the final section of the article, the pandemic provided a new opportunity for the refused knowledge communities that have contested the positions of scientific and government institutions by proposing alkaline water as an antidote.

The articles in the special issue show various kinds of *entanglements* between technology and the public discourse about ageing. First, social media have become tools for enacting narratives about ageing, with solutions aimed at managing it, which can be clinical (i.e., alkaline water) or political (i.e., restrictive government measures and/or collective solidarity action for assisting the elderly). These narratives, moreover, reinforce or destabilize power relations in contemporary society. As shown above, discursive practices can reproduce such inequalities, for

example, by depicting elderly people as fragile and subordinate to the rest of the population; other times, technologies can be involved in the reproduction of discourses aimed at subverting the pre-existing power relations (e.g., between orthodox medicine and refused knowledge communities). At the same time, technology shapes the discourses about ageing. In the article by Caliandro and colleagues, the Twittersphere pushes users to combine issues related to seniors with their own political views; in the work of Picardi and Agodi, the examined refused knowledge community readapted their discourses during the pandemic with the aim of taking advantage of the exponential rise in online social spaces.

#### 4. *Ageing, ICTs, and everyday life*

As for the third dimension, the literature on ICT (information and communication technologies) and elderly users has, in recent years, focused on how technologies and innovation can become part of older people's lives. Similarly, recent academic works have expressed the need to shift the focus from technological to socio-material aspects in order to understand the co-construction of the social phenomenon of ageing and the inscribed role of technology in it (Felsted, Wright 2014; Peine *et al.* 2015; Peine, Neven 2019; 2020). In this context, it seems crucial to continue to emphasize that determining whether an innovative technology is «good» or «bad» cannot be judged from the given solution as such; rather, it concerns the question of how a technology is integrated in the social surroundings (Domínguez-Rué, Nierling 2016).

Through this special issue, we want to propose some innovative contributions to the debate by dissecting the discourse on ICT and the daily life of older people. The paper presented by Simone Carlo and Francesco Bonifacio revisits the role of technology in active ageing, shifting the focus from individual characteristics and motivations to the social practices and contexts in which ICTs are inserted. In particular, the authors shed light on how digital technologies become incorporated into the everyday lives of older adults, thus contributing to shaping the ageing process in remote areas. The research results show how the emerging uses of ICTs and the socio-cultural context mutually shape each other: digital technologies have opened new ways of doing things



that would normally face environmental criticalities, the structure of the ageing process (e.g., empowering and extending the networks of care), and at the same time, ICTs are reshaped by the routines that characterize the mountain village under study (e.g., public spaces as bars and the main square become places of digital disconnection).

By investigating the role that social media played in older people's everyday life during the first wave of the Covid-19 pandemic, Giulia Melis, Emanuela Sala, and Daniele Zaccaria adopt the consolidated appropriation framework to analyze in depth a very topical issue. The authors explore whether and how social media contributed to overcoming the challenges that the long period of forced social isolation posed on older people's well-being. Moreover, the contribution shed light on the processes through which social media use become embedded into everyday life, helping older people redefine everyday routines. The authors show the complexity and nuances of social media use in older people's everyday life, their cultural and generational attitudes, as well as how the enacted social resources might have enhanced or limited social media use.

Finally, the paper presented by Achille Paliotta addresses the digitalization and datafication of bioscience and how this contributes to the process of combating dementia in old age. In particular, the focus is on artificial intelligence and the socially assistive robot (SAR) for people with Alzheimer's. The author investigates the interrelations between the elderly with techno-scientific objects, showing how the adoption of SARs has undergone continuous processes of categorization and re-articulation, changing the initial goals of the designers and bringing the key actors involved until a more stable network is achieved. The case study analysis was mainly aimed at contributing to the analysis of co-constitutive processes that involve ageing and technology (Peine, Neven 2020) by adopting an actor network theory approach to explore the dynamics through which a new technological object emerges.

In this third dimension, we can identify a mutual *entanglement* between ICTs and its uses in considerations of the daily lives of older people. As shown above, within this process, it is important to consider a number of variables, such as gender, social status, or health, and how they contribute to defining how a technological artefact is used or avoided or adapted (or not) to the environment in which the older person lives. On one hand,



innovative technologies can influence and shape the ageing processes, for example, by enabling interactions with multiple actors who live in separate worlds, as stated in Paliotta's contribution. On the other hand, the context in which these technologies are deployed can intervene in the ways in which the tools fit into the daily lives of older users, a point made in the contribution of Melis and colleagues. Carlo and Bonifacio, moreover, show how the adoption of digital technologies can amplify elderly agency to the extent that ICTs are not only perceived as means of their individual empowerment but mainly as tools providing benefits to their entire network.

##### 5. *Conclusions: ageing as a collective matter of concern marked by multiplicity*

As mentioned in the introduction, innovation processes have often conveyed polarized visions about ageing, depicting elderly people as «people in need» or «bodies that can be optimized». Both visions of ageing are generally connected to an *interventionist logic*, according to which technological and scientific innovations are planned by experts that cooperate to solve the needs of the elderly. In contrast, the contributions in this special issue highlight how techno-scientific innovations shape practices and representations of ageing and vice versa. In this process, the entities involved (both human and non-human) have no inherent properties (e.g., daily troubles and needs, abilities and impairments, and expectations and desires). These properties are acquired through their mutual and emergent *entanglements*. Drawing on the discussion of the selected papers, we argue that, in this special issue, ageing emerges as *a collective matter of concern marked by multiplicity*.

First, ageing is a *collective* process that involves media discourses, care and mundane activities, scientific techniques and methods, clinical routines, and marketing strategies, all of which form complex constellations of socio-material practices (Cozza *et al.* 2020). From this perspective, ageing concerns not only the elderly and/or experts interested in solving their needs but also a wide range of actors (e.g., peers, relatives, social media users, neighbors, new media, private companies, innovative or old-fashioned infrastructures and objects) that are continuously

engaged in defining what ageing is and how it can be faced. In this continuous and ongoing process, practices and representations associated with ageing become inseparable from economic and market arrangements, political realities and scenarios, global and local cultural trends, and techno-scientific controversies – the constraints and possibilities that characterize everyday life.

Therefore, ageing is also marked by *multiplicity*. According to Mol (2003, 5): «If practices are foregrounded there is no longer a single passive object in the middle, waiting to be seen from the point of view of seemingly endless series of perspectives. Instead, objects come into being – and disappear – with the practices in which they are manipulated. And since the object of manipulation tends to differ from one practice to another, reality multiplies». In our case, the above-mentioned constellations of socio-material practices lead to the materializations of multiple (s)objects related to ageing processes. Frail or enhanced bodies, media or commercial narratives, scientific standards, and images are only some of the possible ways through which ageing can be enacted, populating a myriad of socio-material worlds. Thus, ageing is certainly fragmented. At the same time, the different (s)objects through which ageing comes to life tend to be mutually constitutive. For example, de-standardized methods of measuring biological age have emerged in contraposition to the chronological approach (see the contribution of Bronzini in this special issue). Similarly public narratives depicting the elderly as in need of protection during Covid-19 emergency contrasted to the discourses depicting them as expendable (see Caliandro *et al.* in this special issue).

Finally, being at the heart of an open dialogue that involves heterogeneous actors, ageing can be defined as a *matter of concern* (Latour 2004). Through this expression, Latour wanted to highlight that objects and facts matter in the sense that they are of importance and, at the same time, are brought into being in material practices and relations. If the widespread interventionist logic takes for granted that needs connected with ageing processes are quite well-definable and solvable by external forces (e.g., experts and techno-scientific innovations), this special issue has contributed toward shedding light on the dynamics through which society becomes concerned about ageing. This constant engagement fabricates multiple and tangible realities that co-exist and/or conflict with each other, demonstrating the intrinsic

ambiguity and questionability of what «getting older» means in the contemporary world.

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## **Ageing and innovation. Exploring a collective matter of concern**

Over the last few years, Science and Technology Studies and socio-gerontology have moved beyond the interventionist logic, whereby users are perceived as «targets» of techno-scientific instruments aimed at solving their needs, contributing decisively to the emergence of an alternative perspective on ageing. This special issue aims to follow this direction. It offers a multifaceted mapping of the current debate about how ageing and techno-scientific innovation shape each other through the involvement of heterogeneous actors such as scientific communities, market and industrial systems, digital media, self-tracking technologies, healthcare professionals, and the elderly and their social networks. Presenting the rationale of the papers that compose the Special Issue, we suggest four themes arising when empirically and theoretically approaching these intricacies: i) ageing research and medicine; ii) ageing, social media, and public discourses; iii) ageing, ICTs, and daily life. Drawing on the discussion of the selected papers, we will argue that ageing emerges as a collective matter of concern marked by multiplicity.

*Keywords:* ageing, techno-scientific innovation, clinical research, public discourse, everyday life.

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