



Ageing without senescence: A critical absence in social gerontology?

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ABSTRACT

This paper addresses the absence of the term ‘senescence’ in recent social science literature on ageing. The significance of this omission is considered in light of the emerging standpoint of gero-science, which argues that the central processes defining ageing are concerned with the rising probability of functional decline, development of degenerative disease and death. From this perspective, the separation of ageing and senescence sustains the myth that there exist forms of ageing that are exempt from senescence. The persistence of this myth underlies ageing studies, the sociology of later life and most social gerontology. While there have been undoubted benefits arising from this bracketing out of senescence, the argument of this paper is that the continuing advances associated with this standpoint are outweighed by the need to seriously engage with the consequences of contemporary societal ageing and the centrality of the processes of senescence in establishing an adequate understanding of ageing, its correlates and contingencies and its personal and social consequences.

Introduction

On the late Queen Elizabeth II's death certificate, ‘old age’ was given as the cause of death (Davies, 2022). This raised a number of problems, not least how old age, raw and unqualified, can be a cause of death. It also served to draw attention to the relationship between senescence and ageing, a relationship particularly problematic for ageing studies, social gerontology and the sociology of ageing.¹ Senescence, a term which pertains to the condition or process of deterioration and death that comes with age, rarely appears in contemporary social science literature.² There are several possible reasons for this, not least because, unlike either ageing or longevity, senescence has become confined to (or monopolised by) the biological sciences. In contrast to ageing, where

notions of decline and deterioration are routinely challenged as being neither inherent to nor defining of the phenomenon, senescence is defined unequivocally as a biologically based decline. How senescence has eluded (or been avoided by) recent studies of ageing in the social sciences and the consequences this has had constitutes the main theme of this paper.

In it, we consider three issues: the first is the framing of ageing as senescence within bio-gerontology and the questionable distinctions between senescence and ageing; the second concerns recent attempts to dismantle this divide, exemplified in the rise of ‘gero-science’; the final section addresses the continuing insistence within the gerontological social sciences on maintaining the distinction between senescence and ageing in order to sustain a positive narrative of ageing as a socially

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¹ Tellingly, Alan Walker, professor of social policy and social gerontology at Sheffield University was so critical of the notion of dying of old age that he wrote the following letter to the London Guardian newspaper: “Regarding the Queen's death certificate, old age is not a disease and therefore should not be used as a cause of death. A broad coalition of gerontologists and ageing and human rights groups strongly object to the use of old age or ageing as a diagnostic factor because it legitimises and magnifies ageism, bolsters the false claims of the anti-ageing industry, obscures the multiple causes of later-life ill health, and detracts from treatment and prevention. Although old age is a risk factor for many diseases, it is heterogeneous, with individual variation and many positive associations, such as subjective wellbeing. Its use as a cause of death is inaccurate and misleading. In contrast, frailty is more homogeneous, evidence-based and clearly defined, and derives from multiple factors, socio-economic and biological. Frailty is not an inevitable consequence of old age and can be both prevented and treated. Near the end of her life the late Queen clearly exhibited well-known signs of frailty such as poor mobility”. *Guardian* 4th October 2022 <https://www.theguardian.com/uk-news/2022/oct/03/listing-old-age-as-a-cause-of-death-for-the-queen-is-misleading>

² For example, the term ‘senescence’ does not appear in the subject indices of the first eight editions of the Handbook of Ageing and the Social Sciences. In the most recent edition published in 2021, one single reference appears, although that in a chapter outlining genomics for social scientists. A similar absence of the term is evident in various other textbooks on the sociology of ageing, see, for example, Harris and Cole (1980) ‘Sociology of Ageing’, Morgan and Kunkel (2001) ‘Ageing: The Social Context’, Phillipson and Dannefer (2010) Sage Handbook of Social Gerontology and Settersten and Angel (2011) Handbook of Sociology of Ageing.

constructed, socially mediated and socially modifiable entity. The paper concludes by highlighting some of the intellectual costs arising from this exorcism of the spectre of senescence from the social scientific study of age and ageing.

Ageing and senescence

Attempts to explain ageing as senescence go much further back than experimental biomedicine. For the purposes of this paper, however, we will focus on theories of 'ageing as senescence' that were developed in the period following the Second World War. One of the seminal texts in the field was Peter Medawar's (1952) book, *An Unsolved Problem of Biology*. This was followed some five years later by George Williams' classic paper on the evolution of senescence (Williams 1957). Together, these two works offered a foundational theory of 'why ageing'; that is why all living organisms age, and what purpose ageing serves in preserving and sustaining all forms of life (Chmielewski, 2017: 259). They argued that ageing was a necessary by-product of growth and that genes designed to ensure that an organism reached reproductive maturity would be conserved, even if they brought about senescence in post-maturity. Senescence, they suggested, was essentially a side effect, genetically engineered but not purposefully designed. As such, it represented the 'continuation of an embryonic program [...] which cannot be powered off but [which] loses purpose with time' (Schmeer, Kretz, Wengerodt, Stojilkovic, & Witte, 2019: 3). Most programmatic aspects of ageing are thus seen to arise via mechanisms that were primarily implicated in prioritising growth rather than being designed to bring about senescence (Khokhlov, Klebanov, & Morgunova, 2017).

Bio-gerontology's subsequent search for the proximal mechanisms bringing about 'ageing as senescence' has pursued two competing lines of enquiry. One line has sought an explanation in terms of the accumulation of damage – within cells, organs and systems of biological organisation – while the other has looked for the biologically determined programmes that directly or indirectly limited lifespan. Both programmed theories and theories of accumulated damage seek explanations either in simpler and short-lived multicellular organisms or in small mammals, like the mouse and the rat. Senescence was chosen as the term to differentiate between those changes "leading to increased risk of disease, disability or death" and other more "innocuous" changes that though they track age do not seem to act as precursors of death disease or disability (da Costa et al., 2016: 91).

Framed early on as the difference between *physiological* and *pathological* ageing (Korenchevsky 1962), the idea that there exists a distinct domain of pathological (abnormal) decline that could be distinguished from non-pathological (normal) ageing was taken up across the whole inter-disciplinary field of gerontology, culminating in the most recent version that is widely adopted by social behavioural and bio-medical researchers of 'successful' versus 'normal' ageing. While this position implies that although ageing as senescence is the statistically more normal phenomenon, the possibility exists for the separation between this normality and a more successful form of ageing that is relatively free from normal senescence (Rowe & Kahn, 1987, 1997, 2015).³ Up until quite recently, the distinction between 'age-associated' diseases causing disability and death and 'normal' ageing processes that do not do so implicitly assumed that ageing without disease was both possible and identifiable (Hayflick 1996: 44). While this original distinction helped serve as a useful demarcation between the medical and biological sciences (i.e. between geriatrics and gerontology), such disciplinary boundaries were always poorly guarded and in recent years, are being

³ The concept of 'successful ageing' has been the subject of extensive critique as divisive and potentially stigmatising (Calasanti & King, 2021; Dillaway & Byrnes, 2009). Our point here is less its societal implications than its function in maintaining the idea (wrongly we would argue) that ageing as a process can be, for some, without adverse consequences – that is free from senescence.

quietly abandoned. Ageing itself is no longer regarded as distinguishable from senescence and senescence is more clearly distinguished from disease pathology. Rather ageing is viewed as the underlying basis for all degenerative disease, particularly those diseases that progressively limit life, the degenerative diseases of 'later life'. As Linda Partridge (2010) has put it:

"At present, these diseases are treated piecemeal by different medical specialists, because they are regarded as separate medical problems. Patients themselves generally visit a clinician because they have a specific medical problem, not because they are old. However, if in humans, also, protection against the effect of ageing can delay or ameliorate diverse ageing-related diseases, then a quite different approach to the health of older people would pay dividends. A broad-spectrum, preventative approach would be required, with individuals who reached a certain age being treated even in the absence of any ageing-related disease." (151).

The emergence of gero-science

This 'new approach' which effectively discards the distinction between normal and pathological ageing and consequently between geriatrics and gerontology has been labelled *gero-science* by its advocates. Gero-science "aims at seeking innovative approaches to better identify the relationships between the biological processes of aging and the biological processes of age-related chronic diseases and disabilities" (Sierra 2016: 5). Pinpointing the moment of gero-science's formal institutionalisation is easy to date. According to Lithgow, gero-science was first established as a field of study when the "NIH adopted the term for a Common Fund initiative, and the first Interdisciplinary Center on Gero-science was formed, in 2007, to optimise interactions and create synergy between the field of biogerontology, numerous age-related diseases, and technology development" (Lithgow, 2013: 11). A few years later, in 2012, the US National Institute of Health launched the Gero-science Interest Group (GSIG) "as a trans-institute interest group within the NIH" (Sierra & Kohanski, 2017: 1). Since then, a 'pillars of ageing research' programme has been launched, whereby seven 'intertwined' biological processes of senescence are proposed as the keys to understanding how ageing and disease are woven together as mutually constituted processes leading to disease, disability and death (Kennedy et al. Khokhlov, 2014:710).⁴

Within this framework, no aspect of ageing is deemed either 'natural' or 'healthy'. At the same time, no aspect is deemed inevitable. By successfully intervening across these various fronts, the hope of a "healthy longevity" is promoted (Stamler, 2015: 3). Even so, the shift in focus brought about by gero-science places senescence at the heart of ageing. As attention has moved away from earlier concerns over the 'ultimate' causes of ageing, the mechanisms of senescence have become the focus, mechanisms that imply, on the pessimistic side, that ageing and senescence reflect identical processes and, on the positive side, that longevity without ageing, that is without senescence, is possible. By identifying their mode of action, it is hoped to halt, reverse or at least delay their operations and thereby ensure a longer, healthier life than that which is being currently realised.

If ageing is the end product of mechanisms designed to ensure growth and reproductive maturity and if within different species these mechanisms share certain highly conserved common features, research on organisms and species with much shorter lives than humans may provide a 'short' cut to achieving a reduction in ageing and an improved human longevity. Since gero-science frames ageing as encompassing all that brings about mortality, there is little room to propose a 'normal' or

⁴ These seven 'pillars' consist of (a) maladaptation to stress, (b) epigenetic influences, (c) chronic inflammatory responses, (d) macromolecular damage, (e) metabolic dysfunction, (f) loss of proteostasis and (g) impaired adult stem cell function.

even a 'successful' form of ageing that is somehow free from senescence but still brings about a 'natural' life limiting function. Earlier models of physiological and pathological ageing, and the distinction they made between ageing and senescence, suggested that life can be lived normally and naturally, with age experienced, on the one hand, as free from the spectre of senescence and on the other as 'naturally' life limiting. The new gero-science, however, insists that ageing is senescence and an intrinsic harbinger of disability, disease and death. There can be no ageing without senescence. Eliminating senescence leaves nothing beyond the mere passage of time: pure longevity.

Healthy ageing: a contradiction of terms?

The gero-science model implies that 'ageing as senescence', per se, confers no measurable benefits to any species. Ageing as senescence poses a limit, not a horizon, whereby the gift of time can only be realised by the absence of ageing. This effectively refutes the idea of ageing without ageing and thus the idea of a 'healthy ageing'. As one biogerontologist has put it:

"Can a person undergo the aging process but be healthy (no diseases)? What then would cause death (in the absence of extrinsic hazards)? If nothing causes death, then there is no aging. Or vice versa, if aging would be blocked but a person suffers from age-related diseases, then the lifespan would not be extended. The source of paradoxes is the notion that aging is a deteriorative process that makes the organism vulnerable to so called age-related diseases. This implies that aging is due to one cause and diseases have different causes... [but] according to the quasi-programmed aging theory, aging and diseases have the same cause... Age-related diseases are signs of aging, like smoke is a sign of fire. Inhibition of aging will both prolong life span and delay diseases. Healthy aging (aging without diseases) is simply slow aging." (Blagosklonny 2007: 3001).

Whether it is possible to conceive of mechanisms actively preventing unhealthy ageing, leaving members of a species to grow old healthily or whether growing old (i.e., living beyond the age of reproductive fitness) necessarily leads to ageing-senescence is the kind of paradox that, within the context of gero-science, requires no answer. There is nothing other than an 'un-natural' intervention that is needed to 'interfere' with the various programmatic mechanisms that otherwise will bring about the ageing-senescence that follows from their actions, irrespective of the institutions and organisation of society.

Gero-science's framing of ageing as the underlying mechanism(s) of later life disease renders 'healthy ageing' an oxymoron. In so doing, it lays down two challenges. In the first, it questions whether any non-ageing lifeform can exist in nature, that is whether any species demonstrate a seemingly unlimited longevity - neither growing old nor becoming senescent. The second question it raises is whether there are any sets of extrinsic conditions that however rare or even artificial can effectively prevent or markedly delay ageing as senescence in one, several, or even most, species which otherwise demonstrate ageing-senescence. Must ageing as senescence be located as part of the intrinsic corporeality of all forms of life or is it possible that the "emergent physiological process (of ageing) is preventable and reversible, depending on environmental conditions, circumstances, and vital activity" (Khalyavkin, Vyacheslav, & Krut'ko., 2018: 102)?

Regarding the first issue, there is a growing body of evidence that ageing-senescence is not an intrinsic process of all forms of life (Jones et al., 2014; Petralia, Mattson, & Yao, 2014). The most significant factor in conferring such apparent immortality seems to be the relative number of pluripotent stem cells found in the mature organism. Seemingly immortal species like freshwater hydra, for example, possess an almost indefinite capacity for self-renewal. The explanation appears to reside in the absence of specialized post-mitotic cells such as those that constitute the organs and tissues of distinctly mortal species, including human beings (Khoklov, 2014). Whether it might be possible to engineer an increased potential for cell renewal among post-mitotic, pre-senescent

cells remains an experimental long shot. The only way lifeforms can avoid ageing, it would seem, is to evade history and remain forever unchanged, undetermined and pluripotent. Still, the fact remains that, in principle, immortality or near immortality is not inherently 'unnatural' in the sense of it never occurring in any life form without some artificial manipulation of an organism's embodied structure.

As regards the second issue - namely the possibility that near immortality can be achieved without interfering with the intrinsic corporeality of the organism by selective manipulation of the external habitat - the evidence here is rather difficult to evaluate (Khalyavkin et al., 2018). No manipulation conducted so far has achieved anything close to such a goal; the nearest is some limited extension of the mammalian lifespan arising from dietary restriction. At the same time, marked disparities between the median and maximal lifespan of species raised 'in captivity' and the same species living 'in the wild' demonstrate that environmental and ecological factors do influence ageing and longevity (Tidière et al., 2016). Even so, it is not clear that these effects alter the 'rate' of ageing so much as increasing the numbers of adults reaching old age and thus extending the average lifespan (Colchero et al., 2021). The implication is that environmental and ecological benefits are possible in extending the adult lifespan of most species but that they do so primarily by conferring a shared opportunity for members of a species or society to experience a near universal senescence, a direction looking increasingly common among the high-income countries (Dong, Milholland, & Vijg, 2016).

Does society help hide senescence from ageing?

Our overview of current biological approaches to understanding senescence provides the context for re-considering dominant social science approaches to ageing. Within these disciplines, most accounts concur in repudiating approaches that conceive of ageing as one of progressive and purposeless decline. The negative aspects of ageing are more often framed as either (a) attributable to the institutions, structures and cultural practices of society or (b) as the necessary limitations that make a finite life both rich and meaningful. From the first perspective, the inequalities of society are thought to 'get under the skin', which prematurely 'age' or 'weather' us (Ferraro & Shippee, 2009; Geronimus, 2013, 2023; Geronimus, Hicken, Keene, & Bound, 2006; Panayotes, Biddulph, Bobak, & Marmot, 2016). Shorn of such disadvantageous effects, ageing can be viewed not so much as a process of decline and deterioration but a benign, indeed desirable stage of life conferring considerable benefits both to individuals and to the wider community (Götmark, Cafaro, & Jane O'Sullivan, 2018; Kluge, Zagheni, Loichinger, & Vogt, 2014).

Since the 1960s, both the psychological and social sciences have conducted systematic programs of research designed to show that much of the deleterious effects of ageing arise from structural disadvantages, accumulated and compounded harms and the internalisation of a collective culture that is thought to belittle age and those deemed aged (Allen, 2016; Crystal, Shea, & Reyes, 2017; Kendig & Nazroo, 2016). Many researchers thus argue that satisfaction with life continues with little significant change throughout adult life, concluding that: "[t]he common interpretation of chronological age as a standard marker of a person's expected decline through the life course—where individuals of similar age are expected to have similar declining levels of health and productive capacity—is inaccurate" (Lowsky, Olshansky, & Bhattacharya, 2014: 646). Those in structurally advantaged positions (in terms of having access to a wide range of assets, capitals and resources) especially, it is said, show few of the deleterious effects of ageing that increasingly surround those growing older in more disadvantaged, marginalised positions (Carr, 2018).

Framing ageing in terms of senescence for many social gerontologists underplays the social construction of unequal old age arising from the actions of social institutions and the maldistribution of resources across the globe. For mainstream social gerontology, rather than it needing to

consider the biology of ageing as senescence, it would argue that biogerontology – and gero-science in particular – should take more account of the social structuring of age (Crimmins, 2020). The observed heterogeneity in various indices of ‘decline’ (health problems, functional limitations, poor quality of life, etc.) do not point to any pre-determined built-in decline but to the existence of diversity *in* ageing and diverse influences *on* ageing. Rather than looking for models of ageing in other species, the social sciences argue forcefully for a greater investment in researching the social, behavioural and environmental factors that might account for variations in positive and negative ageing.

The second stance – that ageing confers important benefits, not despite but because of its very finitude and/or vulnerability – can be observed in the context of what might broadly be conceived of as ‘adult developmental’ perspectives, such as those advanced by Erikson, Peck and Tornstram (Bianchi, 1986; Erikson, 1985; Peck, 1993; Tornstam, 1997; Wacks & Jr., 1994). These advocates of ageing propose a personal and social value to age, not by excluding but by implication, accepting senescence as a necessary part of ageing. Rather than ignoring evidence of decline – in health, function and activity – associated with age, these writers emphasise the human development potential that can be derived from ageing and its creative confrontation with finitude and life’s limits. Given the absence of evidence that the biomedical or social sciences have discovered effective interventions that substantially alter the rate or processes of ageing and the consequent pattern of decline, it could be argued that neither approach has proved its mettle. While proportionately more people may now expect to live one hundred years or more than was ever the case before, it is not clear that there are more than a handful of people reaching beyond the age of 115 and only one person to have reliably been recorded to have lived beyond 120 years (Dong et al., 2016; Olshansky & Carnes, 2019). The upper extremities of age seem fixed. Death, disease and decline still frame the horizons of human life, at least after the ‘three score years and ten’ of the Bible’s Psalm 90 has been reached.

That said, does society offer ways of making our encounters with ageing more encouraging by denying or, if not denying, ignoring the spectre of senescence within society? Is the issue more a matter of struggling over the symbols and subjectification of agedness than of submitting to senescence? Rather than assuming a role for human agency – whether through social or personal endeavour – in taking charge of the ageing process, in defying the rate of ageing – personally or collectively – is there another option in choosing how to represent ageing ‘without senescence’? Might there be good reason to avoid use of the term senescence in the social sciences and in cultural studies, not because of denial but because the benefits arising from representing and symbolising ageing differently are more productive, both practically and theoretically? Or in making such choices, are there discernible costs from adopting what might be termed a ‘culturalistic fallacy’ (Bidney, 1944)? In the final section of this paper, we attempt to weigh up the costs and benefits from bracketing senescence out of the social sciences of ageing.

Costs and benefits from banishing senescence from social studies of ageing

The absence of senescence from the social and behavioural sciences has arguably conferred more benefits than costs, thus far. The phrase coined by Gullette (1997) of ‘declining to decline’ still retains much of the resonance it achieved after its introduction in ageing studies/social gerontology. For Gullette, the crux of the matter is a choice between what she sees as different discourses, between one that universalises losses into a single transcendental process of ageing/decline or one that instead seeks to particularise individual life stories while calling out the harms arising from the totalising of such personal experience within the catch-all rubric of decline (Gullette, 1997). Yet there remains a dilemma. Akin to the Freudian return of the repressed, ageing studies has both declined to focus on decline while equally persistently eschewing

notions such as ‘successful ageing’ (Katz & Calasanti, 2015). In an effort to avoid stigmatising older people, some writers have sought to universalise the plight of later life, calling up images of ‘human vulnerability’ as an inherent part of our species-being (Turner, 2003) or of ‘precarity’ as the common fate of all those rendered subject to the dictates of a neoliberal system (Grenier et al., 2017).

Social constructivists, post-humanists, gender activists and post-structuralists have established a common platform that seeks out any sign of either ‘declinism’ or ‘triumphalism’ and robustly critiques both. Both options are seen as colluding with the proponents of neoliberalism that prefer an individualised rather than a collectivised remediation of the ills attendant upon later life. Torn as it were between third age dreams and fourth age nightmares, the social sciences/cultural studies nexus in ageing studies first adopted but has now largely abandoned what could be described as ‘social democratic’ approaches to addressing ageing as a source of marginalisation (Townsend, 1981; Walker, 1981). In its place have come new symbolic struggles over issues of voice and choice as well as those of identity, representation and visibility. This is combined with the desire to call out the intersectional net in which the hidden injuries of class, ethnicity, gender and sexuality are concealed beneath the patina of age (Calasanti & King, 2015). In this formulation, age as senescence does not constitute such an intersectional nexus unless it can be represented as a socially constructed age status – such as pensioner-hood, retirement, widowhood and other ascribed identities attached to old age.

Is this avoidance of an engagement with the idea of senescence a way of ensuring that later life is understood and defined primarily by its inequalities, inequities and stigmatising stereotypes? Indeed, is a disavowal of the concept a way for ‘critical gerontology’ to redact ageist ideas and practices as manifestations of decline ideologies? Or are there perfectly valid reasons for bracketing out senescence and shaping a view of later life as principally the realm of the social?⁵ This is a conundrum that has pre-occupied a number of social gerontologists, particularly in their concerns with anti-ageing technologies and discourses of longevity extension. Simon Biggs (2018) has pointed out the long existing tension between biological and social explanations of ageing in sociology given concerns that any accommodation to natural science risks ‘naturalising’ the dependent position of older people. He quotes Jan Baars and Chris Phillipson’s assertion that “the major problems that ageing people encounter are not the inevitable result of biological senescence... but are constructed through social institutions and through the operation of economic and political forces” (Baars & Phillipson, 2013: 2, quoted in Biggs, 2018: 99).

Biggs goes on to argue that for some social gerontologists, there is a worry that a biological understanding of ageing leads to a naturalised explanation of the social inequalities experienced by older people, which are therefore not amenable to change. This has meshed with social constructionist accounts not only of the body but also of ageing. While the initial interest of writers in this field was to examine the openness of later life embodiment without any specific engagement with decline, it has also been the case as noted above that some commentators have seen the use of concepts of ‘natural’ ageing as tropes of a decline ideology which seek to impose a negative discursive frame across the whole of later life, treating it as determined by inevitable deterioration and failure. As Biggs (2018: 101) notes, this can set up a tension between accounts that reject notions of “not becoming old” and “becoming old differently”. This bears directly on the importance of the concept of

⁵ Several examples of this position can be found in the social science of ageing literature, with such quotes as “ageing has no existence independent of social interaction and power relationships in society” (Powell & Hendricks, 2009: 85); “old age is a social rather than a biologically constructed status” (Phillipson, 1991: 404); “the changes people experience as they age are heavily influenced by or even constructed by the social reality in which those changes take place” (Morgan and Kunkel, 2000: 6).

senescence given that the former effectively rejects the notion while the latter acknowledges the tension between the social, the cultural and the corporeal.

This tension between the social construction of ageing and the status of senescence is equally evident in the debates about anti-ageing medicine. The field of 'anti-ageing' is wide ranging, encompassing inter alia *modifying* appearance, curing disease, transforming fundamental biological processes, as well as seeking immortality (Vincent, 2009). While there are many pointing to both positive and negative aspects of anti-ageing interventions, for writers such as John Vincent (2003), its very existence transforms the social experience of ageing by prioritising the individual and downplaying the importance that a longer life is primarily concerned with social relationships. For Vincent, an essential part of these social relationships is the role of death in providing meaning to both individuals and society.

However, this is not a death that is defined by the absence of health and the presence of illness; rather it is a call for a return to a moral understanding of the position of old age and its cultural value to the whole of society. Vincent argues that the objective of critical discourse is in part to avoid "burdening all old people with the label 'diseased'" (Vincent, 2009: 204). Consequently, the issue of senescence need not be directly addressed as an issue of social scientific concern, rather it is better that concern should be placed on the social meaning of old age and its connection with finitude. He writes:

"Human biological and social characteristics have co-evolved through the successful transmission and modification of culture from one generation to another. Without ageing and death there would be no succession of generations. The cost of a successful 'strong' anti-ageing endeavour would be an abandonment of the succession of generations and the loss of the key, fundamentally progressive, dynamic to human society, the one that originally produced it." (Vincent, 2009: 204).

But while Vincent calls for the re-evaluation of ageing and death, he does so by treating these as moral phenomena – not as matters of flesh and blood, disease and diminishment. The moral virtue of contemplating finitude as conferring meaning and authenticity are elevated over the more material concerns of the processes of ageing that cause, and not simply accompany, senescence and death. Ageing and anti-ageing are seemingly conflated with 'good' and 'bad' ageing and senescence banished by moral decree rather than simply diminished by material progress.

Conclusions

In this paper, we have addressed the absence of senescence in gerontological social science. From the 1970s, the point when Lynott and Lynott (1996) see as marking the origin of sociological theorising about ageing, ageing has been largely studied within the social sciences without reference to senescence (See endnotes 2 and 4). This contrasts with biological gerontology, where ageing and senescence have been considered as linked but potentially separable processes. The question of whether there can be 'ageing without senescence' has been a key conceptual focus; for social gerontology, senescence is effectively the bad-mouthing of ageing. Given these originary foundations, we have examined their consequences for a social science approach to ageing. While acknowledging that a focus upon the social and cultural framings of age and ageing has enabled an understanding of the structural and symbolic influences upon both the processes of ageing and the status of old age, we have argued that there has been a cost arising from this bracketing out of senescence – and the concomitant declining of decline.

In particular, by focusing upon the structural influences of class, ethnicity, gender and sexuality, ageing risks being evacuated of any substantive meaning itself – as if it were a mere placeholder for a confluence of multiple oppressions. As a social category or status, old age is of course a potential site of discrimination and disadvantage, but ageing – the process of ageing - is not. By treating it as such, ageing loses much of its material significance, only to reappear in the guise of ill-

health and frailty, which are treated as differently successful ways of ageing (Cluley, Martin, Radnor, & Banerjee, 2022; Laceulle, 2017). Staying healthy, staying productive and staying positive are valued while resisting age decried. Treating age more as a moral status than a material reality has its benefits, no doubt, but we believe it creates conceptual contradictions that inhibit or prove problematic when thinking through the place of age and ageing within society. If the future is to be shaped by ageing societies, the challenge is more than a matter of appropriate moral positioning and symbolic recognition.

We would suggest that a re-engagement with senescence would enable a better grasp of the intersubjective experience of growing older, age's inherent directionality, and the appropriate personal and institutional responses to it. Cells, self and society form an inter-related reality that expresses both causality and contingency. For example, the topic of frailty, understood within the biomedical disciplines as having a corporeal existence (e.g., in the concept of sarcopenia), is often treated as the 'product' of labelling or social disadvantage, as if ageing-as-senescence had nothing to do with it: likewise dementia (Harding & Palfrey, 1998; Laceulle, 2017). Similarly, attempts to negate the influence of ageing/senescence by noting that many degenerative conditions can occur earlier in adulthood fail to distinguish between 'senility' and 'senescence' – the former designating pathology, the latter the proneness to developing morbidity. All pathology, of course, is not age dependent but the increasing risk is.

By advocating what might be called a more corporeally engaged sociology of later life, we do not wish to diminish or devalue the social worth of later life nor the insidious effects of labelling; rather we want to locate the vicissitudes of old age in the intimate connections between ageing bodies, ageing subjects and ageing societies. To fully meet this challenge, the idea of ageing without senescence must be seen as the oxymoron it is.

Data availability

No data was used for the research described in the article.

References

- Allen, J. O. (2016). Ageism as a risk factor for chronic disease. *The Gerontologist*, 56(4), 610–614.
- Baars, J., & Phillipson, C. (2013). Connecting meaning with social structure: theoretical foundations. In J. Baars, & J. Dohmen (Eds.), *Ageing, meaning and social structure: Connecting critical and humanistic gerontology* (pp. 11–30). Bristol, UK: Policy Press.
- Bianchi, E. (1986). *Ageing as a spiritual journey*. New York, NY: Crossroads.
- Bidney, D. (1944). On the concept of culture and some cultural fallacies. *American Anthropologist*, 46(1), 30–44.
- Biggs, S. (2018). *Negotiating ageing: Cultural adaptation to the prospect of a long life*. London: Routledge.
- Blagosklonny, M. V. (2007). Paradoxes of aging. *Cell Cycle*, 6(24), 2997–3003.
- Calasanti, T., & King, N. (2015). Intersectionality and age. In J. Twigg, & W. Martin (Eds.), *Routledge handbook of cultural gerontology* (pp. 215–222). London: Routledge.
- Calasanti, T., & King, N. (2021). Beyond successful aging 2.0: Inequalities, ageism, and the case for normalizing old ages. *The Journals of Gerontology: Series B*, 76(9), 1817–1827.
- Carr, D. (2018). *Golden years? Social inequality in later life*. New York NY: Russell Sage Foundation.
- Chmielewski, P. (2017). Rethinking modern theories of ageing and their classification: The proximate mechanisms and the ultimate explanations. *Anthropological Review*, 80(3), 259–272.
- Cluley, V., Martin, G., Radnor, Z., & Banerjee, J. (2022). Talking about frailty: Health professional perspectives and an ideological dilemma. *Ageing and Society*, 42(1), 204–222.
- Colchero, F., Aburto, J. M., Archie, E. A., Boesch, C., Breuer, T., Campos, F. A., ... Alberts, S. C. (2021). The long lives of primates and the 'invariant rate of ageing' hypothesis. *Nature Communications*, 12(1), 1–10.
- Crimmins, E. (2020). The social hallmarks of aging: suggestions for gero-science research. *Ageing Research Reviews*, 63, Article 101136.
- Crystal, S., Shea, D. G., & Reyes, A. M. (2017). Cumulative advantage, cumulative disadvantage, and evolving patterns of late-life inequality. *The Gerontologist*, 57(5), 910–920.
- Davies, C. (2022). Queen Elizabeth died of 'old age', death certificate says. In *The Guardian*, 29th September, 2022. accessed 30th September, 2022 via <https://www.theguardian.com/uk-news/2022/sep/29/queen-elizabeth-died-of-old-age-death-certificate-says>.

- Dillaway, H. E., & Byrnes, M. (2009). Reconsidering successful aging: A call for renewed and expanded academic critiques and conceptualizations. *Journal of Applied Gerontology*, 28(6), 702–722.
- Dong, X., Milholland, B., & Vijg, J. (2016). Evidence for a limit to human lifespan. *Nature*, 538(7624), 257–259.
- Erikson, E. H. (1985). *The life cycle completed: A review*. New York NY: W Norton & Co.
- Ferraro, K. F., & Shippee, T. P. (2009). Aging and cumulative inequality: How does inequality get under the skin? *The Gerontologist*, 49(3), 333–343.
- Geronimus, A. T. (2013). Deep integration: Letting the epigenome out of the bottle without losing sight of the structural origins of population health. *American Journal of Public Health*, 103(S1), S56–S63.
- Geronimus, A. T. (2023). *Weathering: The extraordinary stress of ordinary life in an unjust society*. London UK: Hachette.
- Geronimus, A. T., Hicken, M., Keene, D., & Bound, J. (2006). 'Weathering' and age patterns of allostatic load scores among blacks and whites in the United States. *American Journal of Public Health*, 96(5), 826–833.
- Götmark, F., Cafaro, P., & Jane O'Sullivan, J. (2018). Aging human populations: Good for us, good for the earth. *Trends in Ecology & Evolution*, 33(11), 851–862.
- Grenier, A., Phillipson, C., Rudman, D. L., Hatzifilalithis, S., Kobayashi, K., & Marier, P. (2017). Precarity in late life: Understanding new forms of risk and insecurity. *Journal of Aging Studies*, 43, 9–14.
- Gullette, M. M. (1997). *Declining to decline: Cultural combat and the politics of the midlife*. Charlottesville VA: University of Virginia Press.
- Harding, N. M., & Palfrey, C. (1998). *The social construction of dementia: Confused professionals?* London: Jessica Kingsley.
- Harris, D. K., & Cole, W. E. (1980). *Sociology of aging*. Boston: Houghton Mifflin.
- Jones, O. R., Scheuerlein, A., Salguero-Gomez, R., Camarda, C. G., Schaible, R., Casper, B. B., ... Vaupel, J. W. (2014). Diversity of ageing across the tree of life. *Nature*, 505(7482), 169–173.
- Katz, S., & Calasanti, T. (2015). Critical perspectives on successful aging: Does it 'appeal more than it illuminates'? *The Gerontologist*, 55(1), 26–33.
- Kendig, H., & Nazroo, J. (2016). Life course influences on inequalities in later life: Comparative perspectives. *Journal of Population Ageing*, 9(1), 1–7.
- Khalyavkin, A. V., Vyacheslav, N., & Krut'ko. (2018). How regularities of mortality statistics explain why we age despite having potentially ageless somatic stem cells. *Biogerontology*, 19(1), 101–108.
- Khokhlov, A. N., Klebanov, A. A., & Morgunova, G. V. (2017). *Does aging have a purpose?*, 72 pp. 222–224. Moscow University Biological Sciences Bulletin.
- Khokhlov, A. N. (2014). *On the immortal hydra, again*. Moscow University Biological.
- Kluge, F., Zagheni, E., Loichinger, E., & Vogt, T. (2014). The advantages of demographic change after the wave: fewer and older, but healthier, greener, and more productive? *PLoS One*, 9(9), Article e108501.
- Laceulle, H. (2017). Virtuous aging and existential vulnerability. *Journal of Aging Studies*, 43, 1–8.
- Lithgow, G. J. (2013). Origins of Gero-science. *Public Policy and Aging Report*, 23(4), 10–11.
- Lowsky, D. J., Olshansky, J. S., Bhattacharya, J., & Goldman, D. P. (2014). Heterogeneity in healthy aging. *The Journals of Gerontology. Series A, Biological Sciences and Medical Sciences*, 69(6), 640–649.
- Lynott, R. J., & Lynott, P. P. (1996). Tracing the course of theoretical development in the sociology of aging. *The Gerontologist*, 36(6), 749–760.
- Morgan, L., & Kunkel, S. (2001). *Aging: The social context*. Thousand Oaks, Ca: Pine Forge Press.
- Olshansky, S. J., & Carnes, B. A. (2019). Inconvenient truths about human longevity. *The Journals of Gerontology: Series A*, 74(Supplement 1), S7–S12.
- Panayotes, D., Biddulph, J. P., Bobak, M., & Marmot, M. G. (2016). Wealth and mortality at older ages: a prospective cohort study. *Journal of Epidemiology and Community Health*, 70, 346–353.
- Partridge, L. (2010). The new biology of ageing. *Philosophical Transactions of the Royal Society, Series B*, 365, 147–154.
- Peck, M. S. (1993). *Further along the road less traveled: The unending journey towards spiritual growth*. New York NY: Simon and Schuster.
- Petralia, R. S., Mattson, M. P., & Yao, P. J. (2014). Aging and longevity in the simplest animals and the quest for immortality. *Ageing Research Reviews*, 16, 66–82.
- Phillipson, C. (1991). The social construction of old age: New perspectives from political economy. *Reviews in Clinical Gerontology*, 1, 403–410.
- Phillipson, C., & Dannefer, D. (2010). *The SAGE handbook of social gerontology*. London: Sage Publishing.
- Powell, J. L., & Hendricks, J. (2009). The sociological construction of ageing: Lessons for theorizing. *International Journal of Sociology and Social Policy*, 29, 84–94.
- Rowe, J. W., & Kahn, R. L. (1987). Human aging: Usual versus successful. *Science*, 237, 143–149.
- Rowe, J. W., & Kahn, R. L. (1997). Successful aging. *The Gerontologist*, 37, 433–440.
- Rowe, J. W., & Kahn, R. L. (2015). Successful aging 2.0: Conceptual expansions for the 21st century. *The Journals of Gerontology: Series B*, 70(4), 593–596.
- Schmeer, C., Kretz, A., Wengerodt, D., Stojilkovic, M., & Witte, O. W. (2019). Dissecting aging and senescence – Current concepts and pen lessons. *Cells*, 8, 1446.
- Settersten, R. A., & Angel, J. L. (Eds.). (2011). *Handbook of sociology of aging*. New York NY: Springer.
- Sierra, F. (2016). The emergence of Gero-science as an interdisciplinary approach to the enhancement of health span and life span. *Cold Spring Harbor Perspectives in Medicine*, 6(4), Article a025163.
- Sierra, F., & Kohanski, R. (2017). Gero-science and the trans-NIH Gero-science interest group. *GSIG. Gero-science*, 39, 1–5.
- Stamler, I. (2015). Has aging ever been considered healthy? *Frontiers on Genetics*, 6, 202.
- Tidière, M., Gaillard, J.-M., Berger, V., Müller, D. W. H., Bingaman-Lackey, L., Gimenez, O., ... Lemaître, J.-F. (2016). Comparative analyses of longevity and senescence reveal variable survival benefits of living in zoos across mammals. *Scientific Reports*, 6(1), 1–7.
- Tornstam, L. (1997). Gerotranscendence: The contemplative dimension of aging. *Journal of Aging Studies*, 11(2), 143–154.
- Townsend, P. (1981). The structured dependency of the elderly: A creation of social policy in the twentieth century. *Ageing and Society*, 1(1), 5–28.
- Turner, B. (2003). Biology, vulnerability and politics. In S. J. Williams, L. Birke, & G. Bendelow (Eds.), *Debating Biology* (pp. 281–292). London: Routledge.
- Vincent, J. (2003). *Old age*. London: Routledge.
- Vincent, J. (2009). Ageing, anti-ageing, and anti-anti-ageing: Who are the progressives in the debate on the future of human biological ageing? *Medicine Studies*, 1(3), 197–208.
- Wacks, V. Q., & Jr. (1994). Realizing our inner elder-child: Toward the possible human. *Journal of Humanistic Psychology*, 34(4), 78–100.
- Walker, A. (1981). Towards a political economy of old age. *Ageing and Society*, 1(1), 73–94.