

# Is Ageing Undesirable? An Ethical Analysis

Pablo García-Barranquero,<sup>1</sup> Joan Llorca Albareda<sup>2</sup> & Gonzalo Díaz-Cobacho<sup>3</sup>

*Journal of Medical Ethics* (2023)

## Abstract

The technical possibilities of biomedicine open up the opportunity to intervene in ageing itself with the aim of mitigating, reducing, or eliminating it. However, before undertaking these changes or rejecting them outright, it is necessary to ask ourselves if what would be lost by doing so really has much value. This article will analyse the desirability of ageing from an individual point of view, without circumscribing this question to the desirability or undesirability of death. First, we will present the three most widely used arguments to reject biomedical interventions against ageing. We will argue that only the last of these arguments provides a consistent answer to the question of the desirability of ageing. Second, we will show that the third argument falls prey to a conceptual confusion that we will call *the paradox of ageing*: although ageing entails negative health effects, it leads to a life stage with valuable goods. Both valuations, one positive and the other negative, refer to two different dimensions of ageing: the chronological and the biological. We will defend that, by not adequately distinguishing these two types of ageing, it does not become apparent that all the valuable goods exclusive to ageing derive only from its chronological dimension. Third, we will argue that, if we just conceive ageing biologically, it is undesirable. We will elaborate on the two kinds of undesirable effects biological ageing has: direct and indirect. Finally, we will respond to potential objections by adducing that these are insufficient to weaken our argument.

**Keywords:** ageing, biological ageing, chronological ageing, the paradox of ageing, undesirability

---

<sup>1</sup> Department of Philosophy. Universidad de Malaga, Malaga, Spain. Corresponding author: [pablogarcia@uma.es](mailto:pablogarcia@uma.es).

<sup>2</sup> Department of Philosophy I, Universidad de Granada, Granada, Spain.

<sup>3</sup> Department of Philosophy I, Universidad de Granada, Granada, Spain.

## 1. Introduction

Western citizens have experienced a considerable increase in their healthy life expectancy since the advent of modern medicine, effective hygiene measures, lower child and maternal mortality rates, and the welfare state—among other milestones [1-2]. On average, a 60-year-old person is in better condition today than a 60-year-old person who lived 60 years ago. Unfortunately, this type of life extension has also come accompanied, particularly in the final years of existence, by a frail span unknown until modern times [3]. The old age we experience today is different from the one experienced in the past because we may live longer in conditions of decrepitude.

The extension of the frail span is raising important ethical challenges. Our bodies decline their former capacities and begin to lose strength and vigor. If preventing the ageing process were in our power, would it be desirable to mitigate, reduce, or even eliminate it? Our article will attempt to answer one facet of this ethical question. We must first delimit our object of study.

Firstly, we need to clarify what we mean by the ethical question of ageing. The ethics of ageing has long been concerned with the lives of the elderly and the problems associated with old age [4]. Wareham [5] argues that this traditional approach has two main problems: (1) aged people are seen as objects rather than as central subjects of ethical discourse; and (2) ageing should be seen as a process that occurs throughout life, not just in old age. If ageing itself is analysed ethically and taken as a process that begins before old age and leads to a given biological condition, we believe that a fundamental ethical question arises. Geroscience is raising the possibility of scientific interventions in the process itself. Ageing was thought to be intractable for medicine, but today it is recognised as a “plastic” phenomenon [6]. What will happen when we have more effective anti-ageing treatments and move away from the praxis of dealing with each age-related disease separately? [7-8]. These interventions are generally divided into: (1) those that seek to delay ageing [9]; (2) those that pursue the end of ageing and wish to extend human life [10].<sup>4</sup>

The positions that address the interventions in ageing itself have mainly focused on current discussions about what ageing is or whether it is a disease, among other problems [11-13].

---

<sup>4</sup> The question we are asking is counterfactual: we do not currently possess the technologies necessary to mitigate, reduce, or even eliminate ageing, but presupposing their existence may illuminate their desirability. However, it is not an entirely counterfactual inquiry: advances in geroscience lead us to expect that, if we invest in this type of research, we will be able to intervene comprehensively in ageing. In this manner, the nature of the question also derives from the challenges posed by the current state of technology and the type of decisions we should make in this regard. Thanks to an anonymous reviewer for urging us to clarify this issue.

However, it is very common that a normative conclusion is derived from these ontological approaches: either biomedical interventions against ageing are rejected, or we are impelled to promote them. This type of analysis could provide important lessons for our research, but it should be enriched by an eminently ethical perspective. We take a theoretical step forward by asking: “Is ageing good?” [14-22].

Secondly, we will only address one of the dimensions that comprises the question about the goodness of ageing. Authors such as Bostrom [14] or Hauskeller [17], leading figures in this debate, mainly answer this question on the basis of another one: is death good? However, our objective is not to analyse whether death is bad [23], or if immortality is harmful; [24] but, on the contrary, if the ageing process itself, regardless of whether or not it leads to death, is good.

Thirdly, we will also not undertake an answer to our question from the perspective of the social or populational effects of ageing [25]. We will just ask whether ageing is good in itself for each of us individually.

Fourthly, the authors who have entered to discuss our research question have tended to use the concepts of *good* and *bad* [14-22] and this has two major implications: (1) both concepts have objectivist resonances; and (2) the concepts of good and bad are asymmetrical [26]. First, the use of good and bad carries with it an objectivist notion of value. Objective value gives a positive or negative charge to the valued object independently of human judgments and experiences. In this sense, defending that ageing is bad would entail that biomedical interventions against ageing imply a devaluation of old age as a natural stage of life, which will lead to a negative view of it and a set of associated behaviors, ageism [27] and gerontophobia [28], that will entail serious harm to the elderly. Second, bad carries a series of moral burdens and connotations that the concept of good does not incorporate. This makes the defense of the badness of ageing go hand in hand with a greater rejection. For this reason, we will use the pair of terms *desirability* and *undesirability* because these are implicitly connected to the notion of desire as a subjectively mediated moral judgment. That is, what is valued is not the *persons* who belong to a reviled social group but the *effects* that ageing produces in these people. It thus shifts the burden from the ageing person to the effects produced by ageing (see also [29]).<sup>5</sup>

---

<sup>5</sup> Overall [21] makes a similar point when she delimits her object of study to whether “ageing is good for them”. She is not just understanding ageing as an inquiry in itself, but also that this inquiry relates to the unique experiences of the elderly.

In this article, we will defend that ageing is undesirable. The argument will proceed as follows. First, we will discuss the three main claims that have been used to criticise biomedical interventions against ageing: (1) ageing is not a disease; (2) the negative consequences of life extension; and (3) ageing leads to a valuable life stage. Although we will reject the first two, we believe the latter is a promising approach: it shows that ageing brings with it valuable goods which can be jeopardised by these biomedical interventions [17-19, 21-22]. We will focus on arguing against this viewpoint. In doing so, we will debunk some misconceptions about the desirability of ageing. On the one hand, we will distinguish between two dimensions of ageing that are used interchangeably: biological and chronological. On the other hand, we will clarify how the relationship between both dimensions has been continuously altered due to the advances in science and technology. Both distinctions will show why biological ageing is the only ethically relevant dimension when discussing biomedical interventions against this process. Finally, we will state the reasons why biological ageing is undesirable. We will present the two most relevant arguments for the undesirability of ageing: direct and indirect negative effects. From this approach, we will respond to those authors who can object to our position [17-19, 21-22].

## **2. Is ageing desirable? A review**

The possibility of intervening in ageing itself has led us to ask whether, in virtue of this potential technical capability, we would be removing something valuable in our lives if ageing were mitigated, reduced, or eliminated. Thus, before making any decision about this intervention, we must ask ourselves whether ageing is desirable [14-22]. Our aim in this section will be to analyse the arguments against comprehensive interventions in ageing. We will start from the three main premises of the status quo of ageing, a notion developed by de Grey [30]. It was formulated as an irrational sentiment in favor of the benefits of ageing that makes any critical review of its valuation and meaning impossible (see in this sense reference [20]). In other words, it is the tacit acceptance, established in the common imagination, of a particular conception of ageing that is incapable of critically reviewing its assumptions in light of the negative effects produced by ageing. These three claims constitute, in our view, the three main arguments against these interventions. We will show how only the last of them gives a consistent answer to the question of the desirability of ageing.

(1) *Ageing is not a disease*: Most geroscientifics and ageing theoreticians present ageing as an irreversible, natural, normal, and universal process. This is precisely what is endorsed by Hayflick [31]. He gives four reasons to defend this idea from biology: (1) all animals experience it when they reach a certain age; (2) it occurs in virtually all animal species; (3) all members of the species experience it once they leave the reproductive stage behind, and (4) animals in captivity also experience it despite having followed a different evolutionary path. Ageing—unlike cancer, diabetes, or cystic fibrosis—is a natural process and should not be treated as a disease. Medicine is concerned with diseases and they are bad for us. This implies that, as Moody [32] adduces, ageing can only be treated by curative medicine, i.e., restoring and maintaining health within a limited time frame rather than substantially improving the human condition. The naturalness of ageing has been heavily criticised, particularly by Caplan [33]. He states that none of these four criteria explains why ageing is not a disease. Firstly, it is questionable that ageing is a natural process since it is not a product of evolution, but an “accident of evolution” or a by-product of natural selection, along the lines of the antagonistic pleiotropy hypothesis. Secondly, the naturalness, normality, universality, and irreversibility of a body condition are not relevant in determining whether or not it is a disease. What is relevant in determining if a body condition is a disease is not its “naturalness”, but whether or not it is dysfunctional for the organism. Ageing should be treated as a condition analogous to other pathologies because it implies a cognitive and physical decline of functional capacities (see in this sense reference [12]). Thus, these arguments incur two types of errors: (1) they assume that ageing is natural; and (2) they presuppose that everything natural is good. The first premise leads them to deny that ageing is not a disease, despite the fact that it entails dysfunctions equivalent to other diseases. The second encloses the so-called *naturalistic fallacy*. Two dimensions of the naturalistic fallacy play a role in their assumptions according to the categorization of Curry: [34] ageing is good because it is natural, but the moral value of something does not derive from its naturalness; and what exists naturally should exist, even though some natural phenomena such as natural disasters are not good.

(2) *The negative consequences of life extension*: Numerous philosophers have adopted a conservative position concerning biomedical interventions against ageing [35-39]. They argue that measures that go beyond the contemporary therapeutic paradigm entail catastrophic scenarios that render their implementation impossible. The most famous argument is that of Francis Fukuyama [36], who argues that these measures would lead us to the *Giant Nursing Home* scenario: hyper-long-lived societies in which the increase in years of life is not

proportional to the increase in health span. They would result in ageing societies living 50-60 years longer in poor cognitive and physical conditions. The best attitude is to accept that we must grow old and aspire to a good old age. De Grey [40] warns that these positions incur in the *Tithonus Error*, namely, presupposing counterfactual scenarios in which the extension of life is always at the expense of lengthening the frail span at the end of life. These scenarios are neither logically nor empirically necessary. On the one hand, life extension does not logically contradict the extension of health span. On the other hand, it has been demonstrated in recent experimental research with mice that it is possible to extend life without increasing the state of decrepitude. For this reason, we believe these positions fall prey to the *slippery slope fallacy*. Van der Burg [41] defines it briefly: if we allow A, B will necessarily or most probably follow. B is not morally acceptable; therefore, we should not allow A either. In our case, the scheme would be as follows: if we intervene in ageing and extend life, the subsequent scenarios would be catastrophic; so, if interventions in ageing *necessarily* lead to bad consequences, comprehensive interventions in ageing are bad. As we shown, the problem with this line of argument is that applying biomedical interventions against ageing does not necessarily imply a set of negative consequences that would occur in all circumstances.

The two above mentioned arguments have failed to adequately answer the question of the desirability of ageing. On the one hand, arguing that biomedical interventions against ageing are undesirable tells us nothing about whether ageing itself is desirable. They ask about the causal link between these interventions and future catastrophic scenarios, but, since these links are not necessary, they cannot be entirely rejected. On the other hand, the first position does try to answer whether or not ageing is desirable in itself, but the answer it gives is so unsatisfactory—its naturalness—that we are forced to reject it. In our view, only the latter argument is promising. We will now discuss why.

(3) Ageing leads to a valuable life stage: Some authors have argued that, despite leading to negative health effects, ageing brings with it valuable goods [17-19, 21-22]. This is because ageing disemboogues in old age, a rewarding life stage. We would lose valuable goods if we eliminate, reduce, or mitigate ageing. Therefore, we have to preserve it. In this vein and from a classical position, Kass [18] has rejected biomedical interventions against ageing through the human life cycle argument. It refers to the fact that human life has certain stages—birth, adolescence, maturity, and old age—that must be maintained because of their vital importance. Old age is a fundamental stage of human life, as well as the others, so losing it would be an irreparable damage. From more contemporary positions, long-term relationships or the

possibility of having grandchildren [21], values exclusive to old age such as dignity [19], or the type of relationship that ageing has with death [17, 22] have been defended as some of the goods unique to ageing.

In this case, it is argued that old age is desirable in itself because it possesses valuable goods. In contrast to the argument of the bad consequences, it does address the desirability of ageing in itself; and, unlike those who argue that ageing is desirable because it is natural, it uses arguments that do not reduce desirability to a certain type of property—whether natural or not. It is argued that ageing, because of its unique characteristics, entails valuable goods. In the following sections, we will argue that all these goods would not be shattered by biomedical interventions against ageing. Although this conception is the only one that considers the possibility that ageing itself possesses unique valuable goods, it fails to clarify which type of ageing they are referring to. This leads them to fall prey to conceptual confusion and derive unjustified theoretical consequences. We will discuss in the last section the concrete arguments developed within this position.

### **3. Debunking misconceptions about the desirability of ageing**

As we have seen in section 2, there are some authors who argue that ageing is a life stage which carries with it valuable goods. These goods are threatened by the potential disappearance of ageing as a result of advances in science and technology. In our view, proponents of this type of argument fall prey to what we will call *the paradox of ageing*: while ageing brings with it valuable goods, it also has bad health effects. Overall [21] and Jecker [42] endorse, for instance, how ageing makes us deal, in many cases, with disabilities of various kinds, while at the same time they argue that ageing brings with it unique valuable goods.

We will state that this paradoxical situation in which ageing is both desirable and undesirable at the same time derives from a conceptual confusion. That is, the advocates of the valuable goods of ageing do not take into consideration that these derive only from the chronological dimension of ageing and not from its biological dimension. The valuable goods associated with ageing would not be compromised since biomedical interventions against ageing only affect the biological dimension. First, we will make the theoretical distinction between biological and chronological ageing and show their different ethical implications. Second, we will display

how the two dimensions have been separated in practice due to the advance of science and technology.

### 3.1 Biological and chronological ageing

It may seem strange to state that there are two types of ageing. To our eyes, it is perceived as a unitary process: time passes and the body begins to lose strength and vigor. Nevertheless, it is very common to be surprised by people who look young at an advanced age or by young people who look older. Both dimensions of the last sentence enclose a hidden meaning: how can we simultaneously say that a person is young and old? This is precisely because the term *ageing* is used in two different ways.

In the first place, we find a type of ageing associated with the negative valuation we alluded to earlier. Ageing is conceived as those characteristics that are anchored in the body effects it produces. We relate it to negative predispositions such as the possibility of suffering from age-related diseases, the cognitive and physical decline that accompanies the passage of time, or the difficulty in performing many activities. All these effects are part of the process of cellular damage that human beings undergo due to ageing.

This typology has taken the name of *biological ageing*. Lemoine [11] defines it as the process resulting from the combination of mechanisms that limit life (“promoters”) and mechanisms that modulate its effects (“protectors”). An ageing-promoting mechanism meets all the following conditions: (1) its effects increase with age; (2) natural selection has not eliminated these effects because they are extrinsic to evolutionary dynamics; (3) its effects may have been selected as pleiotropic antagonistic effects at different stages of life history or merely inherited by-products of evolution; and (4) its effects are sufficiently compensated to optimise reproduction at the expense of longevity. A protective mechanism of ageing meets all of these conditions: (1) it counteracts the effects of one or more promoting mechanisms; and (2) it repairs, to some extent, cellular damage by modulating metabolism in response to various environments.

However, despite the fact that biological ageing is commonly identified with old age, we must emphasise that we are including two interconnected but differentiated layers in our definition. As Jecker [19] argues, ageing should be understood both “synchronically” and “diachronically”. On the one hand, ageing is a life stage characterised by a lower level of strength and vigor than in other life stages. On the other hand, ageing is a process that begins

long before old age (see also [5]). We are interested in how this biological process leads to old age and involves cellular damage that can entail undesirable body effects.

Secondly, we encounter another type of ageing associated with the positive valuation. This typology brings with it a greater experience, knowledge, and wisdom gained throughout a lifetime.<sup>6</sup> Therefore, it is a valuable life stage that should be understood together with others. That is, the time that the individual has lived and experienced the world confers them a series of precious goods: not only have they had the opportunity to develop a more extensive life project, but they have also had the opportunity to learn from their experiences and to refine their life project.

This typology has been called *chronological ageing*. According to Nathan [43], it is the lapse of time, concretised in objective units of measurement, between two predefined events. Namely, it generally refers to where a person is in their life in relation to their date of birth. Beyond the body's biological state, it refers to the inevitable passage of time, to live a certain number of years, months, minutes, and seconds in the world.

The conceptual confusion on which the paradox of ageing is based consists of not differentiating between the biological effects produced by ageing and the passage of time in the life of the living. Biomedical interventions against ageing at no time question its chronological benefits: their objective resides—contrary to what their critics believe—in enhancing chronological goods through the containment and slowing down of the decline produced by biological ageing. One can use life experience, knowledge, and wisdom and how all of them impact the consistency of one's life project without the limitations of cognitive and physical decline [44-45]. Biomedical interventions against ageing promote research that slows down and limits the cellular damage of the human body, but they do not deny that chronological ageing contains valuable goods. It is possible to dissociate both types of ageing, break their traditional links, and just intervene in biological ageing. That is why from now on we will make reference to biomedical interventions against biological ageing.

In this sense, although both types of ageing always go hand in hand in practice, they are analytically distinct [44]. They refer to two dimensions of ageing that play distinct roles in

---

<sup>6</sup> We should note, as Overall [21] does, that chronological ageing does not necessarily imply greater wisdom. That is to say, it does not lead aged persons to be more cultured or reach a higher level of knowledge in comparison to the youth. Nevertheless, certainly the more we have lived and experienced, the more enriched is our vital perspective.

human valuations and that must be dissociated to gain greater clarity in these philosophical debates. Biomedical interventions against ageing have an eminently biological dimension: they seek scientific-technical ways to slow down and/or limit cellular damage. Arguments against or in favor of these measures must show why intervention in biological ageing is harmful without resorting to the recognised positive aspects of the chronological dimension.

### **3.2. The role of science and technology in the practical distinction between biological and chronological ageing**

It can be argued that, although it is possible to separate both typologies at a conceptual level, their deep entrenchment in practical issues makes this separation nothing more than a theoretical exercise. However, this viewpoint loses sight of the fact that the relationship between biological and chronological ageing is *historical*: their unity depends on the state of science and technology [14,44]. Biological and chronological ageing, although inseparable, are not univocally linked dimensions in practice. If we attend to the history of their relationship, we will become aware of how we nowadays arrive at biological old age when we are substantially chronologically older than a century ago [1-2].

Therefore, the distinction is not only important at the theoretical level, but it is also relevant empirically. Ageing is “plastic” [6], it depends on both material conditions and cultural views on ageing [44]. The passage of time continues to elapse, but the biological conditions in which life is experienced or the beliefs held about the passage of time may change. The contemporary development of geroscience and many biomedical interventions is another step towards the alteration of the nexus between chronological and biological ageing. It forces us to rethink biological and chronological ageing separately and to show that both have distinct ethical implications.

In short, both typologies of ageing are not completely separable, but instead conceptually and empirically dissociable. Nowadays, this dissociation becomes even more pressing in the face of advances in science and technology. We have more and more tools to decouple biological ageing from chronological ageing. The challenge posed by these advances must be questioned at the outset. Do we need measures to slow down and/or limit the biological dimension of ageing? We will only be able to answer this question if we can answer whether biological ageing is or is not desirable.

## **4. Why is (biological) ageing undesirable?**

It follows from the previous section that all those valuable goods attributed to ageing derive only from its chronological dimension. We showed that the object of the negative valuations of ageing, the harmful physical and cognitive effects it produces, refer to the biological dimension of ageing and that the object of positive valuations, the greater experience, knowledge, and wisdom that accompany it, refer to its chronological dimension. Therefore, if biological ageing just entails a series of undesirable health effects that are negatively valued by the persons who subjectively experience them and anti-ageing treatments only affect the biological dimension, then biological ageing will be undesirable to the extent that it no longer possesses chronological valuable goods and anti-ageing treatments will be desirable as long as they only affect its biological dimension. In this section, we will elaborate further on why the health effects of biological ageing are undesirable and how the objections that can be raised against our approach are not strong enough to refute it.

### **4.1. Direct and indirect negative effects of biological ageing**

Negative evaluations of biological ageing derive from the undesirable health effects it produces. Biological ageing entails a process of cellular damage that deteriorates human capacities. Numerous age-related diseases begin to appear, as well as a decline in the physical and cognitive conditions that had characterised the previous vigorous stages. This process is universal, although the severity of its effects differs in different individual cases [46]. All human beings suffer from it, they are subject to it, but there are substantial differences at the individual level. This is because this process of cellular damage is softened or aggravated depending on genetic and environmental factors, among others.

*Why is ageing undesirable?* There are two main reasons for its undesirability: its direct and indirect negative effects. First, ageing brings with it a set of age-related diseases that are part of a degenerative process of cognitive and physical deterioration. Elderly individuals are forced to live a life progressively marked by physical and psychological pain resulting from a more vulnerable body condition [47]. Let us put ourselves in the shoes of an older adult with mobility problems resulting from their advanced age. The pain caused by the structural damage of their joints represents a significant reduction in the person's well-being. Their situation can hardly be dissociated from the ailments of age. In this sense, these effects are direct insofar as they appear in an unmediated way as a consequence of the weak body condition of the ageing

individual. Their undesirability resides in the effects in themselves and not due to the deprivation of other types of goods.

These effects are often overlooked due to the current praxis of medical data registries. The correlation between certain diseases and their increasing occurrence in the ageing process is not included. For example, in the United States the three leading causes of death are heart disease, cancer, and stroke. Each of these causes increases enormously after the age of 65 [30, 48]. And this happens not only with serious diseases, but also with other biological functions that are categorised as minor diseases or simply by-products of ageing.

However, structural damage to the joints is not only undesirable because it entails living with pain, but also because it impedes vigorous joint movement, which limits or prevents what the person can do. In turn, it has indirect effects. These result from those goods relevant to the personal existence of a given individual that can no longer be accessed due to the weakened body condition of the aged person. This deprivation or limitation is indirect because what is undesirable is not the effects of ageing themselves. They are rather undesirable to the extent that they deny or limit relevant goods in people's lives. Activities such as physical exercise, recalling past experiences and relevant events in one's biography, or performing daily tasks without the constant help of a caregiver are relevant examples to understand what is deprived or limited by this new body condition [47].

The deprivations of ageing should not be understood only in a presentist sense: my body prevents me from getting to certain places, moving quickly and nimbly, or thinking clearly, which makes me unable to perform many activities that are valuable to me. It also has important consequences in temporal terms for my life project. As Derek Parfit [49] argues, we have a preference for the future, favoring the idea that all good things are yet to come and all bad things have passed. Underlying this is a preference for an incrementally valuable life project: [50] we do not prefer everything good to happen at the beginning of our life, but rather to be distributed incrementally throughout our life. A stage of life in which everything of value is placed in the past entails significant psychological damage.

This is why this process of body degeneration has important negative consequences for the individual life projects of human beings. The chronological dimension brings us—with the passage of time—experience, knowledge, and wisdom, allowing the projects carried out by human beings to be more consistent. Biological ageing, through the pains that accompany it and the discomfort produced by what cannot be done due to the weakness of the ageing body

condition, prevents what is valued in chronological ageing from developing in good conditions: experience and wisdom. Thus, it is not a matter of extending life for no apparent reason but of increasing the span of health to (1) have more time to carry out personal life projects; and (2) take advantage of the consistency gained in the chronological dimension to pursue and configure the personal life project more satisfactorily [3,15,20].

In the following subsection, we will confront our position with the strongest arguments for the desirability of ageing. We will show how, although they involve important criticisms against our arguments, they are not sufficient to refute them.

## **4.2. Further objections**

### **4.2.1. Biological and chronological ageing cannot be dissociated**

Ageing is undesirable, according to our argument, in an eminently biological sense. The valuable goods of ageing refer only to its chronological dimension and not to its biological dimension. If this distinction is accepted, it must be acknowledged that biological ageing is undesirable. However, some have argued that both dimensions are not dissociable and that, therefore, any chronological good is necessarily biological.

It can be objected that biological ageing is a necessary process for a conscious and assumed transit towards death. Hauskeller [17] and Schweda [22] have argued that the ageing process is a precondition of our finitude, for if we were to die in good biological condition, our and our loved ones' acceptance of our own death would be much more traumatic than it is so far. The different perception of the death of a young and an old person has to do mainly with the fact that we are not as prepared to see the former die as we are in the case of the latter.

This argument presents two problems. On the one hand, it presupposes that one can only have the right attitude towards death if he or she is biologically aged. This premise is refuted both at the societal and individual level. The perception of death is not the same in all cultures. Its acceptance seems to depend not only on biological ageing, but also on the performance of certain rituals or on the participation in military conflicts. Cultural and social beliefs mediate our understanding of death. On the individual level, the good death of young people who are ill or involved in accidents are examples of individual attitudes that courageously accept their own death [20]. On the other hand, it presupposes that each biological condition carries with it a certain attitude towards death. Human convictions about facing moral or existential problems, although mediated by biology, are not solely products of it [51]. Therefore, it is in our hands

to change social and individual attitudes towards death. We find many psychologically different ways of coping with death under similar biological conditions.<sup>7</sup>

#### **4.2.2. We are losing valuable goods**

The valuable goods of ageing are many and varied. However, our argument is that these goods derive solely from chronological ageing. Biological ageing is only an impediment to the enjoyment of these goods. Another form of opposition to our argument is to evaluate what valuable goods ageing entails and how our analysis jeopardises them. In the following, we will show how this conclusion is unjustified through an exposition and critique of the arguments about the desirability of ageing by Overall [21] and the midlife bias by Jecker [42].

On the one hand, Overall [21] posits that ageing may be good because it is better than the alternative: dying young. It is better because it gives us access to experiences, characteristics, and relationships that we would miss if we did not age. Three valuable goods accompany ageing. First, longevity gives us more time to pursue those activities we value and enjoy. This presupposes that there are renewable goods, i.e., goods whose value is not exhausted in their continued and repetitive use. Creative activities carried out over time would fall into this category. Secondly, ageing opens up the possibility of accessing new valuable goods. Overall refers to the opportunity of having grandchildren or maintaining and promoting friendships and social relationships over many years. Third, ageing brings us a valuable enrichment of experience. This does not mean that growing older necessarily makes us wiser, but rather that lifetime provides the aged person with an experientially richer life perspective.

While we accept that all of these goods are valuable, we believe that they relate only to the chronological dimension of ageing. If biological ageing were successfully intervened in and we could reach old age in good body condition, these goods would continue to exist. We could continue to enjoy renewable goods and in better conditions. The type of goods specifically related to ageing, according to Overall, would also continue: we could have grandchildren and maintain valuable long-term relationships. Finally, we could also acquire an enriched view of life. It does not matter how biologically old I am, I would gain experience just from being

---

<sup>7</sup> An anonymous reviewer raises an interesting objection: although biological ageing is not necessary to achieve certain valuable goods, it can be *instrumentally* valuable, so it would be surprising to consider it undesirable. We believe that this question deserves an in-depth academic debate and we cannot devote sufficient space to it in our argument. For the time being, we have reservations about this criticism for two reasons: while ageing may be instrumentally valuable, (1) it brings with it significant harms; and (2) it does not seem a necessary means to achieve any particular valuable good. In this sense, if we can avoid broadly harmful effects and achieve such valuable goods by other means, it seems difficult to argue that it is not undesirable.

chronologically old. All these goods advocated by Overall, therefore, depend on chronological ageing and are not affected by our arguments about the undesirability of biological ageing.

Second, Jecker [42] argues that much of our moral theories and theories of justice carry with them the so-called *midlife bias*. We establish a hierarchy of values that privileges those maintained during adulthood, ignoring the specific values of childhood and old age. For Jecker, values such as care and trust dominate in childhood; autonomy and rationality in adulthood; and dignity in old age.<sup>8</sup> We usually privilege autonomy and rationality over other values when these depend on the life stage of the individual in question. This privilege is an unjustified bias; each life stage has its own associated values. Our moral theories should be informed by the differences that exist between the various life stages.

In the case of old age, the central value is dignity because, in the face of the biological decline that occurs in old age, there is an increased risk that we will lose the human capacities central to a dignified life. The problem with Jecker's argument is that it answers a question that we do not face: how should we conceive our moral theories in a world in which there are various life stages? There are life stages that have different hierarchies of values, so any moral theory must be sensitive to the differences between life stages so as not to be biased in any way. However, if it is possible to eliminate or mitigate the last of these life stages, then all values derived from a vulnerable<sup>9</sup> and declining body condition would disappear. Jecker presupposes the existence of biological ageing and discusses how it affects our theories of morality, while we raise the possibility of its non-existence and argue for its undesirability.<sup>10</sup> The question to be asked to Jecker's approach is: if we can eliminate or mitigate the last of the life stages, is it desirable to do so? Is it desirable to choose a younger biological condition at the risk of losing the life stage in which dignity dominates? We, as we have argued, believe it is, but Jecker's approach does not provide us with an answer to it.

---

<sup>8</sup> Jecker [19] understands that the concept of dignity is inherently linked to the capability approach: "capability views of justice link dignity to a wide range of things that human beings can do and be. In general, such conceptions hold that we respect an individual's dignity by making reasonable efforts to support at a threshold level the central things that beings of its kind can do and be (...). If we assume this is a plausible list of central human capabilities, then respecting human dignity requires supporting each of these capabilities at some minimum threshold".

<sup>9</sup> One possible confusion that may arise from our argument is that we suggest that comprehensive intervention in biological ageing can eliminate vulnerability from the human condition. On the contrary, we believe that vulnerability is important in other aspects of human life and that such interventions would reduce it to an enormous degree in the later stages of our lives.

<sup>10</sup> Jecker departs from the existence of biological ageing because of the characteristics of the present state of affairs. See footnote 1 about the partially counterfactual nature of our inquiry.

In fact, the life stages have already been stretched due to the tremendous scientific and non-scientific milestones we have developed. A 60-year-old person is not considered old today, and a 40-year-old person is still relatively young. The main goal of geroscience is to increase health span and reduce frail span as long as possible.

## **5. Concluding remarks**

The technical possibilities opened up by biomedicine are raising major ethical challenges. We will be able to modify aspects of our biology that we had always counted on. One of the most relevant aspects is ageing, traditionally considered an inescapable process of human life. However, before undertaking these changes or rejecting them outright, it is necessary to ask ourselves whether what would be lost really has much value. To defend ourselves against potential critics who accuse us of being ageists or gerontophobics, we choose to speak of desirability and not of goodness.

In this article, we have asked ourselves about the undesirability of ageing itself from an individual perspective, without considering the role that the valuation of death may play in answering this question. The three main arguments given against these interventions have been threefold: (1) ageing is not a disease; (2) the negative consequences of life extension; and (3) ageing leads to a valuable life stage. The first step of our analysis has revealed that only the last of these is capable of offering a consistent answer to the question of the desirability of ageing.

However, the latter incur in what we have called the paradox of ageing: while ageing entails very negative effects, it is considered to carry with it valuable goods. This paradox arises from a conceptual confusion between biological and chronological ageing. The exposition of both typologies of ageing and their different ethical treatment shows how the valuable goods of ageing derive only from its chronological dimension rather than from its biological one. It would be desirable to carry out these interventions to the extent that biological ageing only consists of the negative body effects it produces and biomedical interventions against ageing only affect the biological dimension.

These negative biological effects are of two types: direct and indirect. Biological ageing leads to a biological condition that is vulnerable and much more predisposed to pathologies and diseases of various kinds, while at the same time limiting us in the pursuit of those goods that

we consider valuable. We have responded to the possible objections that could be made against our argument by showing how these are insufficient. On the one hand, there are no good reasons to defend that biological and chronological ageing are univocally linked. On the other hand, the valuable goods unique to ageing that would presumably be lost in our analysis only depend on the chronological dimension and, therefore, were not affected by our analysis.

## References

- 1 Oeppen J, Vaupel JW. Broken limits to life expectancy. *Science* 2002; **296**: 1029-31.
- 2 Christensen K, Doblhammer G, Rau R, *et al.* Ageing populations: The challenges ahead. *Lancet* 2009; **374**: 1196-208.
- 3 García-Barranquero P. Beyond the weak and strong life extension division: «Don't add years to life if you cannot add life to those years». *Arbor* 2022; **198**: e654
- 4 Jecker NS (Ed). *Ageing and Ethics: Philosophical Problems in Gerontology*. New York: Springer, 1991.
- 5 Wareham C. What is the ethics of ageing? *Journal of Medical Ethics* 2018; **44**: 128-32.
- 6 Blasimme A. The plasticity of ageing and the rediscovery of ground-state. *History and Philosophy of the Life Science* 2021; **43**.
- 7 Gems D. What is an anti-ageing treatment? *Experimental Gerontology* 2014; **58**: 14-8.
- 8 Longo VD, Antebi A, Bartke A, *et al.* Interventions to slow ageing in humans: Are we ready? *Ageing Cell* 2015, **14**: 497-510.
- 9 Blasco MA. Telomeres and human disease: Ageing, cancer and beyond. *Nature Reviews Genetics* 2005; **6**: 611-22.
- 10 de Grey ADNJ & Rae M. *Ending Ageing: The Rejuvenation Breakthroughs that Could Reverse Human Ageing in Our Lifetime*. New York: St. Martin's Press, 2007.
- 11 Lemoine M. Defining ageing. *Biology & Philosophy* 2020; **35**.
- 12 Saborido C, García-Barranquero P. Is aging a disease? The theoretical definition of aging in the light of the philosophy of medicine. *The Journal of Medicine and Philosophy* 2022; **47**: 770-783.
- 13 Sholl J. Can ageing research generate a theory of health? *History and Philosophy of the Life Sciences* 2021; **43**, 2021.
- 14 Bostrom N. The fable of the dragon tyrant. *Journal of Medical Ethics* 2005; **31**: 273-7.
- 15 de Grey ADNJ. Life extension, human rights, and the rational refinement of repugnance. *Journal of Medical Ethics* 2005; **31**: 659-63.

- 16 Farrelly C. A tale of two strategies. The moral imperative to tackle ageing. *EMBO Reports* 2008; **9**: 592-5.
- 17 Hauskeller M. Is ageing bad for us? *Ethics & Medicine: An International Journal of Bioethics* 2011; **27**.
- 18 Kass LR. Ageless bodies, happy souls: Biotechnology and the pursuit of perfection. *The New Atlantis* 2003; **1**: 9-28.
- 19 Jecker NS. The time of one's life: Views of ageing and age group justice. *History and Philosophy of the Life Sciences* 2021; **43**.
- 20 Linden IP. (2022). *The Case Against Death*. Cambridge, MA: MIT Press.
- 21 Overall C. "Is ageing good?". *The Cambridge Handbook of the Ethics of Ageing* (pp. 66-78). C. S. Wareham (Ed). Cambridge: Cambridge University Press, 2022.
- 22 Schweda M. "Ageing and the temporality of the good life". *The Cambridge Handbook of the Ethics of Ageing* (pp. 23-37). C. S. Wareham (Ed). Cambridge: Cambridge University Press, 2022.
- 23 Bradley B. When is death bad for the one who dies? *Noûs* 2004; **38**: 1-28.
- 24 García-Barranquero P. Transhumanist immortality: Understanding the dream as a nightmare. *Scientia et Fides* 2021; **9**: 177-196.
- 25 Davis JK. *New Methuselahs: The Ethics of Life Extension*. Cambridge: MIT Press, 2018.
- 26 McMahan J. Problems of Population Theory. *Ethics* 1981; **92**.
- 27 de Grey ADNJ. The real end of ageism. *Rejuvenation Research* 2014; **17**: 95-6.
- 28 Bunzel JH. Recognition, relevance, and deactivation of gerontophobia: Theoretical essay. *Journal of the American Geriatrics Society* 1973; **21**: 77-80.
- 29 Blagosklonny M. Disease or not, ageing is easily treatable. *Ageing (Albany NY)* 2018; **10(11)**: 3067.
- 30 de Grey ADNJ. Life span extension research and public debate: Societal considerations. *Studies in Ethics, Law, and Technology* 2007; **1**.
- 31 Hayflick L. The future of ageing. *Nature* 2000; **408**: 267-9.
- 32 Moody HR. Who's afraid of life extension? *Generations: Journal of the American Society on Ageing* 2001; **25**: 33-7.
- 33 Caplan AL. Death as an unnatural process: Why is it wrong to seek a cure for ageing? *EMBO Reports* 2005; **6**: S72-5.
- 34 Curry O. Who's afraid of the naturalistic fallacy? *Evolutionary Psychology* 2006; **4**: 147470490600400-47.
- 35 Agar N. *Humanity's End: Why We Should Reject Radical Enhancement*. Cambridge, MA: MIT Press, 2010.

- 36 Fukuyama F. *Our Posthuman Future: Consequences of the Biotechnology Revolution*. New York: Farrar, Straus and Giroux, 2002.
- 37 Habermas J. *The Future of Human Nature*. Cambridge: Polity Press, 2003.
- 38 Sandel MJ. *The Case against Perfection*. Harvard, MA: Harvard University Press. Harvard, 2007.
- 39 Glannon W. Identity, prudential concern, and extended lives. *Bioethics* 2002; **16**: 266-83.
- 40 de Grey ADNJ. Combating the Tithonus error: What works? *Rejuvenation Research* 2008; **11**: 713-5.
- 41 Van der Burg W. The slippery-slope argument. *The Journal of Clinical Ethics* 1992; **3**: 256-68.
- 42 Jecker NS. *Ending Midlife Bias: New Values for Old Age*. Oxford: Oxford University Press, 2020.
- 43 Nathan MJ. Does anybody really know what time it is? *History and Philosophy of the Life Sciences* 2021; **43**.
- 44 Saborido C. “Teme a la vejez, pues nunca viene sola”. Nociones de envejecimiento, cambio conceptual y gerociencia. *PASAJES* 2022; **65**: 7-16.
- 45 Wareham CS. Between hoping to die and longing to live longer. *History and Philosophy of the Life Sciences* 2021; **43**.
- 46 Mykytyn CE. Medicalizing the optimal: Anti-ageing medicine and the quandary of intervention. *Journal of Ageing Studies* 2008; **4**: 13-21.
- 47 Garson J. Ageing and the goal of evolution. *History and Philosophy of the Life Sciences* 2021; **43**.
- 48 Farrelly C. Why ageing research? The moral imperative to retard human ageing. *Annals of the New York Academy of Sciences* 2010; **1197**: 1-8.
- 49 Parfit D. *Reasons and Persons*. Oxford: Oxford University Press, 1984.
- 50 McMahan J. “Old age and the preferences for the future?”. *The Cambridge Handbook of the Ethics of Ageing* (pp. 9-22). C. S. Wareham (Ed). Cambridge: Cambridge University Press, 2022.
- 51 Singer P. *The Expanding Circle: Ethics and Sociobiology*. Oxford: Oxford University Press, 1983.