1. Introduction

In recent years, medical technology has advanced rapidly. It has been suggested that methods such as nanotechnology, cell rejuvenation, and gene therapy might result in a significant increase in the human lifespan.[1] Due to these developments, the topic has recently also attracted a lot of attention in philosophy, especially in bioethics. In the philosophical discussion concerning the ethical desirability of considerable life extension, many authors use the concept of immortality in order to gain a better understanding of the desirability of extending the human life span. This seems like a good starting point since eternal life can be seen as the maximum of life extension. In theory, with the help of medical technology, it could be possible to keep living for hundreds or thousands of years, even eternally. However, this does not imply that one would be immune to death. A being that *can* die is not actually immortal. In what follows, I will argue that many authors tend to confuse considerable life extension with immortality, although there is a distinction between the two. I will emphasize that we should be careful in using the notion of immortality in the discussion on the ethics of considerable life extension.

The aim of this article is to provide conceptual clarification concerning the notions of immortality and considerable life extension. Instead of defending a certain view for or against considerable life extension, the goal is to evaluate the relevance of different reasons used for supporting or opposing it. The point I aim to defend is not that referring to immortality would always be a bad choice when trying to make sense of the ethical questions related to life extension. Instead, I would like to emphasize that the notion of immortality should be more carefully distinguished from that of a considerably extended human life. I suggest that the traditional debate considering the metaphysical questions about immortality should be separated from the discussion on considerable life extension in a clearer manner than is currently done.

2. The Relation between Life Extension and Immortality

In order to examine the relation between immortality and life extension it would be helpful to consider some recent papers on the topic. I would refer to the texts of Leon Kass, John Harris, and Larry Temkin to point out cases in which the authors operate with a fairly liberal understanding of immortality. Before moving on to examine the examples, I should emphasize that I am *not* suggesting that the authors are not aware of the difference between immortality as a metaphysical concept and the possible eternal life suggested by scientists. Harris and Temkin explicitly point out that the word 'immortality' can be used both in a literal sense and as a way to describe considerably extended human life. The latter might refer to anything between, say, two hundred years and eternity. So the word 'immortality' is, very consciously, often used to discuss something that is not immortality in its literal sense. However, I aim to demonstrate that this manner of speaking may easily lead to misunderstandings that have a bearing on the acceptability of the arguments defended.

In his 2003 book, *Life, Liberty and the Defense of Dignity,* Leon Kass makes a case for the "virtues of mortality".[2] In a passage in which he examines the desirability of emerging life extension technologies, Kass argues that the finitude of life is a blessing for each of us, whether we know it or not.[3] Kass states that he is not granting any virtue to premature deaths or the event of death itself. Rather, he wishes to remind us of the characteristics of mortality often considered deeply human. He offers four benefits of mortality: interest and engagement, seriousness and aspiration, beauty and love, and virtue and moral excellence.[4]

Kass asks "If life is good and more life is better, should we not regard death as a disease and try to cure it?"[5] This kind of goal might seem desirable for some people but actually many might settle for less and find literally being immortal a scary thought. Furthermore, even if we wished to cure death, there is absolutely no scientific evidence that we might be able to do that even in the distant future. Kass is concerned that "conquering death" would make us lose the virtues of mortality. In addition to that, he believes that being immortal would make us something other than human. Some people are glad to embrace posthumanism but Kass is not among them. According to Kass, arguing that human life would be better without death is to argue that "human life would be better being something else than human".[6] To state that immortal people would be non-human does not necessarily mean that immortality (or any kind of posthumanism) would be undesirable. However, Kass

adds that humans are better off as mortal beings.[7]

Harris and Temkin are more careful when talking about life extension, and they make no explicit statements about the possibility of abolishing death; they mainly talk about arresting the process of aging. In his article "Intimations of Immortality: The Ethics and Justice of Life-Extending Therapies" (2002), Harris notes that Kass suggests that "Since the (current) essence of being human is to be mortal, immortals would necessarily be a different type of being and therefore have a different identity." According to Harris, this can be true in a sense but it is also possible to be willing to change identity over time.[8] What I want to concentrate on here are not the arguments about the nature of an immortal identity but the fact that Harris pretty much takes as given the assumption of human identity transforming from mortal to immortal as our lives get longer. Yet in the same article, when commenting on Kass's view on virtue and moral excellence, Harris states that "Of course, as we have already noted, our vulnerability will remain so that it will still be possible to 'give our lives' if necessary".[9]

Harris states that he uses the term 'immortality' to cover everything from relatively modest life extension methods to "truly infinite survival".[10] It can be questioned whether it is reasonable in the first place to use immortality to describe these two very different entities with highly different implications. Harris states explicitly that "We should note that immortality is not the same as invulnerability, and even 'immortals' could be killed".[11] Hence indefinite survival does not refer to actual immortality. Thus it is somewhat confusing when Harris writes that "Humans have up to now been defined in terms of their mortality. We mortals have seen this as part of our essential nature".[12] If we have been mortals "up to now" then the most apparent interpretation in this context would be that we are turning into something else, namely immortal. Even though Harris states that he does not take the term "immortal" literally he is willing to go along with Kass in evaluating the possible outcomes of lost mortality.

At a certain point both Harris and Kass discuss eternal love and move from a debate on life extension to evaluate how deeply an immortal person could love another person. Kass

doubts that immortals could love one another as deeply as we do, whereas Harris states that it would be the same – they would simply have the possibility do so eternally. In cases like this it seems clear that both authors have effortlessly proceeded from the original context to something quite mysterious.[13] In fact, both Kass and Harris seem to use immortality (in the literal sense) and "immortality" (as a form of life extension) quite effortlessly side by side without thinking through the relation of the different meanings. It seems especially surprising that Harris puts so much effort into attacking Kass's conceptions about the virtues of mortality instead of pointing out that Kass is operating with a different, and, in this context, quite erroneous concept of immortality.

In defense of both Harris and Kass it could be said (although Kass constantly uses "immortality" in a literal sense) that they are not confusing immortality to forms of life extension; they are merely arguing about a theoretical point. But this kind of objection holds the implicit claim that we can use arguments about immortality when evaluating the ethical desirability of considerable life extension. I will return to the problems of this claim in Chapter 3.

In his paper "Is Living Longer Living Better?" (2008) Temkin states that "even if Kass is right about the virtues of *finitude*, that wouldn't be enough, to undermine the value of research whose ultimate aim is to stop aging".[14] He adds that "after all, a solution to aging wouldn't make us immortal".[15] Thus it seems confusing when Temkin, at times, adopts a very vague definition of immortality. It can be questioned why he is willing to put so much effort into analyzing Kass's views that clearly handle immortality as something other than a result of successful anti-aging medicine.

Both Temkin and Kass express a worry that if we managed to stop people from dying of "old age", death would always be a tragedy.[16] Today the three major causes of human death are trauma, disease and aging.[17] However, if aging could be arrested, it would leave us with trauma and disease. We would basically be left with suicide, illnesses, accidents, famine, and homicides. According to Temkin, each death would then rob a person of an open-ended future that could have included even millions of years in a vital state.[18] According to Kass's

formulation, “We could no longer comfort the widow by pointing out that her husband was delivered from his suffering. Hence “death would always be untimely, unprepared for, shocking”.[19]

Without the familiar life structure (childhood-adolescence-adulthood-old age) and with a theoretically everlasting life time expectancy, death would nearly always come as an unpleasant surprise. In Kass’s case, however, the view contradicts his other statements about *mortality* as giving meaning to our lives. If we were to become immortals, there would be no tragic death since there would be no death in the first place. If, on the other hand, death were still around, we would be familiar with the limits of human existence and the fact that we might, and most likely would, someday die.

Temkin emphasizes the value of living *well* over living long (I will not go into the criteria of a good life here). Referring to this comparative statement,he ends up stating that even if a long life were attractive to each individual, it would not be a desirable idea collectively. He states that “Even if it would be better for all of us, collectively, to live forever, I still doubt whether that outcome would be most desirable”.[20] He goes on to say that “an outcome of a fixed, immortal, population would be significantly worse than one involving regular regeneration”.[21] This is mainly because a population with no regeneration would lack the joy of having children and the fresh ideas that new generations tend to produce. This worry might be logically reasonable but it seems to lack relevance in the sense that considerable life extension technologies would be unlikely to lead to a “fixed, immortal, population”.

What such technologies *could* produce is a world where many people would live considerably longer than at the moment but where people would still have babies and die because of various causes. Furthermore, if the average life expectancy were considerably high, the likely outcome would be that people would start to have children at a later stage in their life. The number of children could also be controlled without forbidding reproduction: it is very unlikely that we would have to choose between living long and having a child. Thus it seems that Temkin’s argument works best if we understand immortality in a very literal sense. In the abstract of his paper, Temkin suggests that we should live better rather than

longer and he favors “ongoing reproduction over immortality”.[22] My main interest is not in evaluating the logical validity or invalidity of Temkin’s claim. Instead, I would like to emphasize that a situation in which we would need to make a choice between immortality and reproduction is highly hypothetical, and is not really relevant in the context of the current discussion on considerable life extension discussion.

In his article Temkin also refers to Bernard Williams’s well-known argument about the boredom of immortal life. In “The Makropulos Case: Reflections on the Tedium of Immortality”, published in 1973, Williams states that in time an immortal life would turn out to be so boring it would be altogether unliveable. Temkin is, up to a certain point, sympathetic to this view and asks: “If I lived forever, would anything still strike me as new, exciting, or bewitching?”[23] As he states, the idea of , say, ten to twenty more healthy years of life seems attractive but living for hundreds, thousands, or even an infinite number of years is quite another question.[24] However, like many authors, he does not question the relevance of the argument about boredom. Nevertheless, it seems that being bored forever is not exactly the same as being bored for a few hundred years.

Temkin himself writes in the context of genetic enhancement and starts the paper by asking whether we should proceed with “genetic enhancements enabling us to conquer aging”.[25] This was certainly not the starting point of Williams when he wrote “The Makropulos Case” in the 1970s. It follows that Williams is more attached to the notion of immortality whereas Temkin is talking about, at most, the possibility to live on until one finally faces death by causes other than senescence. What Williams is talking about is a lonely immortal life with no possibility of dying and thus no fear of death, no sense of finitude, and so on. A disturbing feature of this kind of immortality is exactly the lack of possibility to exit life; the best it can offer might be a possibility of reversing one’s immortality by a potion (which of course would be as mystical as the beginning of the immortal life). A life span expectancy that is genetically enhanced faces no such problem. We would probably be talking about tens or hundreds of extra years, and would still be very vulnerable to, for example, accidents, diseases, famine and natural catastrophes.

3. The Relevance of the Arguments about Immortality

In his 1991 article "Research into Aging: Should it be Guided by the Interests of Present Individuals, or the Species?" Peter Singer has paid attention to the various uses of the term immortality. He notes that even if the arguments about the boredom of an eternal life "are right about *immortality*, that is no reason to believe that a lifespan of three hundred years would lead to unrelieved boredom, or a significantly diminished incentive to make each day count"[26]. He adds "Whether an infinitely long life would be a good thing is one question; whether another century or two would be a good thing is a different question altogether"[27]. In this brief consideration he points out that what is true about immortality is not necessarily true about a very long life. Singer himself does not analyze this observation in depth but in the light of the current debate it has become more and more relevant since many authors fail to differentiate between literal immortality and forms of life extension.

There are, obviously, two types of arguments about considerable life extension: those that support it (i.e. see it as desirable) and those that oppose it (i.e. see it as undesirable). Both categories can be subdivided into two categories, namely into arguments that have some relevance regarding the ethical desirability of considerable life extension, and those that do not. It should be noted that the relevance does not equal being a valid argument for or against considerable life extension.

Take, for example, Kass's argument that "the immortals cannot be noble"[28]. It is an argument that opposes considerable life extension but actually has no relevance regarding this matter. It might be interesting to see whether or not this makes an immortal life less desirable. However, since medical technology cannot produce immortal beings, the argument is not in the scope of the debate about considerable life extension. Because immortals cannot die, they also cannot sacrifice their life for a greater cause. This argument works only when talking about immortality in the literal sense. In cases like this it is not crucial to evaluate the competence of the argument in the context of life extension, since life extension clearly cannot produce people that cannot die.

Another of Kass's claims is that finitude is the reason we are able to enjoy beauty and love. He suggests that beautiful, lasting objects can be appreciated only by beings that are in themselves fragile and limited in their existence. Another possibility he suggests is that beauty can be best found in things that are impermanent, such as a beautiful sunset or awakening love. "Does not love swell before the beautiful precisely on recognizing that it (and we) will not always be?" he asks.[29]

Admittedly there is some truth in all of that. Temkin recognizes this and states that for many, life seems precious precisely because of its fragility. However, he also makes some critical claims about Kass's view, such as that Kass is making "a virtue of necessity".[30] Either way, the argument about the appreciation of beauty might make sense when talking about immortal humans. But this is not true of "immortals" since they or their loved ones can in fact die any day and for them there exists a sense of finitude in one's life, although it may be a long one.

It seems that the undesirability of immortality does not imply the undesirability of considerable life extension. A related point is that the desirability of immortality does not imply the desirability of considerable life extension, even if this might seem to be so at first glance. Basically the maximum of human life extension is an eternal life, sometimes also referred to as *biological immortality*[31]. But in fact mortality is not something that life extension technologies are aiming to fix; the goal is rather to cure age-related illnesses as a cause of death. Immortality in its literal sense is not a maximum of life extension; it is a way to describe a state in which one is completely immune to death. The talk about immortality as a biological feature is rhetorical rather than literal. Thus the (presumably) good features of immortality, such as not having to fear death or never having to worry about not having enough time to pursue one's dreams, are not true of an extended life.

A very basic argument for eternal life is to state that because life is good we should have more of it.[32] It seems that if we admire an immortal life, this is definitely a reason to support life extension. Upon closer examination, however, immortality in its literal sense is not something that can be achieved by life extension. Either way, the simple statement that life

is good and we should make it as long as possible, can be used as an argument for both immortality and life extension.

For many, an obvious benefit of immortality is that it would enable us to get rid of the intimidating fear of death. Even if there are varying attitudes towards death and we might accept death as a fact of life, it is hard to overcome the personal, primitive-like fear of the ending of one's own existence. It is appealing to think that one could overcome this fear not by accepting death but by defeating it. But this advantage (if we agree to call it that) is not a useful element in arguing for or against life extension medicine that has no intention of reversing death itself.[33]

Finally, it should be pointed out that even if some arguments considering the ethical desirability of immortality *are* also true of considerable life extension, it does not mean that there is a necessary connection between the two. Another point to be especially stressed is that the notion of immortality not only creates conceptual confusion but also affects the argumentation. Many authors, including Harris and Temkin, explicitly make a division between literal immortality and "immortality" as referring to a considerably long life. As a terminological point, it is interesting but somewhat trivial to state that immortality as a word should be used carefully. However, the notion of immortality often affects the views about considerable life extension and this creates problems considering the validity of those views.

Due to the complex nature of term 'immortality', the desirability of immortality has been discussed in a metaphysical context rather than in the scope of practical ethics. Combining these two fields in the context of considerable life extension may not be the most fruitful approach. I suggest that the term 'immortality' should be used more carefully to prevent confusion; it would perhaps be easier to use it only in its literal sense. Many authors sometimes confuse it with forms of life extension, even if they may have explicitly claimed not to have done so. Furthermore, the talk about immortality creates even more confusing connotations if the subject is moved into the realm of public discussion and policy making without carefully explicating the meaning in which the term is used.

4. Concluding Remarks

I have argued that the discussion about immortality in its literal sense should be separated from the discussion on the ethical desirability of considerable life extension more explicitly than is done at the moment. Many authors use 'immortality' for referring to a lifespan that is considerably longer than our current one but still far from actual immortality. Referring to immortality may not be problematic when it takes place only on the terminological level and the meaning of the notion is clearly articulated. However, referring to immortality also affects the argumentation at times since it tends to blur the difference between infinite survival and living for a few hundred years.

One could maybe say that authors such as Temkin, Kass and Harris are merely doing what many people writing about considerable life extension do, i.e. utilizing the traditional ethical questions related to immortality in a context that is slightly different from the original one. Admittedly, there are similarities in some issues such as: Can we lead a meaningful life if we live for centuries? What if one never grows old? or What happens to one's family ties and our personal identity? But from these similarities we cannot simply make the claim that what is true of immortality is necessarily true of a considerably extended human life.

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Endotes

1 For more detailed views on this, see e.g. Lapasset, Laure et al. (2011). "Rejuvenating senescent and centenarian human cells by reprogramming through the pluripotent state". *Genes and Development* 25, 2248-2253, or Rattan, S. & Singh, R. (2009). "Progress and Prospects: Gene Therapy in Aging". *Gene Therapy* 16; 3-9.

2 Kass makes similar points in his 1985 book *Toward a More Natural Science*.

3 Kass 2003, 332.

4 Kass 2003, 332-337.

5 Kass 2003, 325.

6 Kass 2003, 332

7 To say that humans are worse off as immortals is actually quite impossible if one adopts a view according to which immortals are not human in the first place.

8 Harris 2002, 87.

9 Harris 2002, 89.

10 Harris 2002, 67.

11 Harris 2002, 69.

12 Harris 2002, 67.

13 C.f. Häyry 2010, 267-268.

14 Temkin 2008, 198.

15 Temkin 2008, 198.

16 There is a twist here. Even though aging is mentioned as one of the main causes of death, very few people actually die literally of old age; most elderly people pass away because of *aging-related diseases* such as Alzheimer's or different types of cancer, and only very few live past 100 and die purely because of their age. Of course there is also a further question about whether death could actually be a tragedy, or at least bad, at all times, even when it happens "naturally".

17 See Häyry 2010, 195.

18 Temkin 2008, 199.

19 Kass 2003, 330.

20 Temkin 2008, 207.

21 Temkin 2008, 207.

22 Temkin 2008, 193.

23 Temkin 2008, 202.

24 Temkin 2008, 193.

25 Temkin 2008, 193.

26 Singer 1991, 135.

27 Singer 1991, 135.

28 Kass 2003, 336.

29 Kass 2003, 336.

30 Temkin 2008, 198.

31 E.g. Michael R. Rose 2004.

32 E.g. Christine Overall has presented this claim as follows: “Death is bad, and other things being equal, a longer life is a better life” (Overall 2011, 390). Matti Häyry has named this kind of view the “more is better” view (Häyry 2011, 24).

33 For further discussion on the fear of death see e.g. Murphy, Geoffrey G. (1993). “Rationality and the fear of death”. In Fischer, John M. (1993). The Metaphysics of Death. Stanford University Press, California.