A BUDDHIST PERSPECTIVE ON HUMAN ENHANCEMENT AND EXTENSION OF HUMAN LIFESPAN

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Abstract

Buddhism has nothing in principle against either human enhancement or lifespan extending technologies. Everything depends on motivation. In the case of human enhancement technologies in general, the argument that enhancing humans is unethical because it commits an unnatural act is found wanting because it relies on the untenable premise that the natural and the ethical are identical. However, Somparn Promta's argument to the effect that in Buddhism there is no unnatural act is criticized because the argument conflates two different senses of "natural", one being natural law and the other presupposed in the premise that the ethical and the natural are identical. Then the paper moves on to discuss the central idea in Buddhism concerning the emptiness of all things. Since there can be no essence or core of identity of anything, person or non-person, any argument based on there being a subsisting person whose body is to be enhanced or whose life is to be extended is based on an untenable premise. Finally the paper discusses Steven Horrobin's recent attempt to base the value of the extended lifespan on the ability to enjoy more pleasures. This is also found wanting because the extended life will contain not only pleasures but also pain and boredom. Moreover, the value of life, either extended or not, lies more on how well it is lived rather than how much pleasures the subject can consume.

Introduction

This chapter proposes to discuss the Buddhist viewpoints on human enhancement and extension of human lifespan. Current technologies are being developed with the aim of providing bodily and cognitive

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enhancements of human beings in very significant ways. Developments in human-computer integration, made possible by nanotechnology and increased understanding of the workings of the inner mechanisms of the brain, have made scenes in science fiction a likely scenario in the near future. There are many applications of these technologies; for example, patients suffering from memory loss due to the decrease in the activity of the brain can have those functions enhanced or restored through implantation of computer chips inside the brain itself, so that the neurons and the switches inside the chip can become integrated and interact with one another seamlessly. Further research is also being done on how to restore sight back to blind people through integration of artificial eyes that transmit visual information to the brain or to restore the lost functions of the visual processing parts of the brain itself.

Another area of research on extending human capabilities focuses on extending the lifespan itself. Recently there has been increased understanding of the mechanisms underlying the aging process, and there is a hope that one day humans could live indefinitely through mastering the art of manipulating these aging processes or stopping them before they happen. This requires the same kind of sophisticated technologies that are being developed for physical and cognitive enhancements alluded to above. Futurist Ray Kurzweil, for example, foresees the day when human beings will become "transhumans" or "posthumans", both terms signifying an emergence of a new type of organism, one that will perhaps supersede the human form we are familiar with. According to Kurzweil, it will be shortly possible for a human being to upload all the content of his or her mind onto a huge server, only to be downloaded to a new body when the opportune moment arrives. In that way it is foreseen that human beings (or a later version thereof) can live indefinitely.

Though this research work is still at its beginning stages, it carries a strong potential for altering the lives of us human beings forever. Moreover, it will not only affect the lives of individuals, but also of human societies as a whole. These enhancement technologies will have tremendous impact on human relations. When only some groups of humans are enhanced and others are not, inequality among the groups will widen, and this surely will lead to a host of social, cultural and political problems. Furthermore, even among the enhanced beings themselves, there will be changes in how they relate to one another. For example, when one's lifespan is increased significantly, there will need to be changes in life insurance schemes and policies concerning retirement, and age

regulations. These are just small examples in the changes in the characteristics of society due to enhancement technologies.

It is the aim of this paper to reflect on these developments through the lens of Buddhist teachings.[1] Even though there are many schools of Buddhism, chief among which are the Theravada and Mahayana traditions, what is offered here is a common thread that runs through all Buddhist schools. Both Mahayana and Theravada schools rejects the idea of the self as an inherently subsisting and enduring entity, and it is this thread that is relied on as the basis of Buddhist thought presented in this paper. Furthermore, one of the most important aspects of Buddhist teachings both the Theravada and Mahayana schools is that the emphasis on motivation as the basis on which ethical value of action rests. Thus according to Buddhism action such as enhancing the physical and cognitive functions of humans or extending their lifespan is not good or bad in itself, it is the motivation behind the act that is ultimately responsible. The basic saying in Buddhism is that when the motivation is good or "wholesome" then the act is also good, and vice versa, and a motivation is good when it is directed at the well-being of other sentient beings and away from the egoistic attitude of the subject. Another important aspect of the teaching is that the subject itself is constituted not by a self-subsisting self or soul as in other religions, but by a series of ever changing episodes of bodily and mental activities. This point has a very strong impact on much of the motivation behind enhancement and lifespan increasing technologies. These technologies are perhaps motivated by the desire to be stronger, more intelligent and to live longer, but all these are effects of the ego itself. It is the ego that wants to be stronger, to be more intelligent, and to live longer. According to Buddhism these motivations are unwholesome indeed.

Another point concerns the conceptual issue of extending one's lifespan itself. In attempting to increase the lifespan, it seems to be the individual ego that wants to extend its stay in the world for as long as possible. But according to the Buddhist analysis this is clearly impossible as the ego does not stay the same from a moment to another moment, and there is no underlying entity that remains unchanged behind all these changes. This is a metaphysical point, and this paper will try to develop this point in philosophical terms. This, if true, will show that the motivation for extending one's lifespan or to increase one's physical and cognitive abilities simply to extend the duration or the existence of the ego is always a wrong one because it is based on a wrong conception of

reality.

However, this does not mean that Buddhism is not completely opposed to human enhancement or increased lifespan. It is only opposed to performing these out of wrong or unwholesome motivations. When these technologies are used on humans for altruistic purposes, then they can do really good things for both individuals and their societies. The hard part lies in how to consider the use of these technologies for altruistic purposes.

Human Enhancement

According to the EU document on the issue, human enhancement is defined as "a modification aimed at improving human performance and brought about by science-based and technology-based interventions in the human body" (Directorate General for Internal Policies, 2009). Basically speaking, attempts at enhancing humans originated from attempts to restore the human body and human functioning that has been lost due to illness. Thus enhancing or restoring can be performed through the use of medication, surgical means (for example in case of restoring the use of limbs), implanting device to restore sight or hearing, and other measures. As technologies aimed primarily at restoring the human functions are being developed, it is but a short step until someone imagines that the same technologies can also be used to *enhance* human capabilities in the way that may exceed those of a normal, average human being. For example, a drug may, *prima facie*, be developed with the objective of treating the memory function of the brain, which has been lost through illness such as Alzheimer's. However, if the drug is such that it can be used in normal people so that they have more powerful memories, then the issue seems to exceed that of normal medicine. It is here that the ethical questions surrounding human enhancement are centered. There seems to be a basic conceptual distinction on this issue between the therapeutic purpose of enhancing technologies and their newer, non-therapeutic and *augmentative*, purposes. Due to the latter, the goal of the technologies is not merely to restore the normal functions, but to push the boundary of what it is to be a human being, possibly in the future even to create an entirely new kind of being itself.

However, the distinction between the therapeutic and augmentative use of human enhancement technologies has been criticized by some

as not being very clear cut, since it is the same technologies that can be employed on both sides, and since the very concept of a *normal* human being can be a contested. This shows that the most salient ethical issue surrounding human enhancement is the question what constitutes a normal human being. What most people find objectionable about human enhancement is that the technologies are poised to create a new kind of human being. Talks about human enhancement seem to conjure an image of the grotesque – a body significantly different from a typical human – and this seems to be a source of uneasiness. Here the assumption is that the ethical corresponds with the normal or the natural. Any attempt to diverge from the norm, to create a kind of human being that is too different from it, would simply be unethical. The story of the Frankenstein monster is a very good example of this. The doctor who created the monster committed an unethical act because he tried to overcome nature. By creating the monster, the doctor violated a natural and ethical norm. This feeling that the ethical coincides with the normal and natural is also a leading cause of the public backlash against the genetic modification technologies. It is not a surprise to find people labeling food created through these technologies "Frankenstein" food. The root cause is one and the same.

On the issue of human enhancement technologies, what seems to be ethical objectionable at the first sight is the possibility that humans will be created which violate the view that the ethical and the normal. If the purpose of the enhancement is not therapeutic, then, given the predictably more widespread and powerful technologies in the near future, it is quite likely that many of the enhancing technologies will become routine, with the consequence that a new type of human being, if not a totally distinct kind, will emerge. This will certainly violate the assumption that the normal and the ethical are one and the same. For example, it is conceivable that a drug will be available which significantly enhances memory capacity of those who take it. So when the drug is in general use, we will have created a new type of human who have a more powerful memory than those who do not take the drug. If a critical threshold of population who take the drug is crossed, then even the conception of what constitutes the 'normal' itself could change. In this scenario, the 'normal' will be those who take the enhancing drug, leaving those who don't to be branded as out of the normal range. Those who find this scenario ethical objectionable typically reasons that the new norm is unnatural, hence it cannot be an ethical one.

Another ethical issue concerning human enhancement concerns groups of people rather than individuals. Suppose a group of human beings are enhanced in one way or another. Suppose, for example, that the group takes the memory-enhancing drug on a regular basis. What will happen will be that there are other groups who might not be as fortunate and do not have the opportunity to take the drugs regularly. The result could be that, in the long run, the group that take the drug will enjoy more cognitive and memory capabilities than those who don't. This will surely be used as a justification for segregation, only that this time the issue that separates one group from another is not entirely socio-cultural, but physical. This is tremendously important, because it is based on internal physical characteristics, whereas in the past it was based on socio-cultural characteristics (such as the fact that one is born to such and such family). It is true that certain physical characteristics were used in the past to segregate people into groups, such as skin colors and so on, but with the enhancement technologies the segregating characteristics will be those that enable those who possess the new found abilities to perform tasks that might not be possible for those who are not so enhanced. This is in stark contrast with the earlier physical characteristic such as skin color which was not relevant as a marker of more enhanced capabilities. The group who take the memory-enhancing drug will in theory be able to remember more things and remember them more clearly than those who do not take the drug. Hence it appears that the human enhancement technologies have a much more serious impact on the issue of equality among groups of people than any natural physical characteristic ever could.

Of the two main ethical concerns surrounding human enhancement – the view that the normal and the ethical are one and the same, and the other view that the technologies could segregate humans into unequal groups – the former one is more basic. We can imagine a scenario where every human being receives the benefits of these technologies, so nobody will be left out. In this case there will be no inequality among the people since everybody will become equally enhanced. However, even if everybody is enhanced in the same way, the first ethical objection seems to remain, because in this case everybody then deviates from the norm, so the whole development becomes unethical.

A Buddhist Response

We will discuss each of the two main ethical concerns of human enhancement and see how the Buddhist responds to them. The first issue, as we have seen, concerns the identification of the normal and the ethical. On this topic, Somparn Promta has argued that according to Buddhism nothing is in fact unnatural. That is, Promta sees that in Buddhism there is nothing unnatural since everything has to follow natural law. Creating a Frankenstein is a natural act since the creation has to follow natural laws, Frankenstein himself, is therefore an object in the natural scheme of things. Here is what Promta says on the issue:

> In Buddhism, morality can be separated from the concept of being natural because according to Buddhist teaching it seems impossible to say that such and such a phenomenon is unnatural. Buddhism proposes that the moral goodness or badness attributable to any action depends solely on the moral properties. Actually, Buddhism does not think that there is anything unnatural. Buddhism believes in the Five Laws of Nature as we have observed previously, and thinks that there is nothing which is beyond these laws of nature. In Buddhist texts, for example, reproductive methods other than the sexual one we are acquainted with are mentioned. For those of us who never perceive such methods, they could be considered unnatural. But they are natural in the sense that they are permitted to appear in the universe through any of the five natural laws (Promta, 2005).

The Five Natural Laws mentioned in the quote above are: physical law (utuniyama), biological law *(bijaniyama)*, law of action *(kammaniyama)*, law of mind *(cittaniyama)*, and law of dhamma *(dhammaniyama)* (Promta, 2005). In short, these laws represent all action in nature, both physical and psychological. Physical law refers to what is happening in the physical world. Biological law refers to what happens in the biological world; thus genetic inheritance, for example, belongs to this law. Law of action refers to the relation of cause and effect that obtains in the world. The fourth law, that of the mind, covers action of the mind and the relation between the mind and the world,

while the last law covers everything else. We don't need to concern ourselves with the details of each of the laws here. Suffice it to say that these laws cover everything in the psycho-physical world. According to Promta, nothing is unnatural in Buddhism because everything that happens does so according to one or more of these five laws. Furthermore, he argues that, since nothing is unnatural, any argument purporting to show that an action is ethical because it leads to unnatural result is not tenable as it rests on a false foundation. Promta uses this argument to claim that human genetic research, for example, is not unethical in itself because the research necessarily follows natural laws.

It is quite clear that this argument rests on an equivocation of the meaning of the word "natural". On the one hand, things in the physical world proceed according to natural laws; this much is totally uncontroversial. On the other, however, when someone makes an argument to the effect that an action is unethical because it leads to unnatural products such as a grotesquely enhanced human, they are not referring to the natural law, but the fact that the resulting product is out of the range of the normal for a thing of its kind. When one creates a Frankenstein, the act is unethical precisely because it distorts what has come to be agreed upon as normal. The fact that creating a Frankenstein is only possible through reliance on natural laws is not relevant to the ethical value of the act. It may be the case that Buddhism teaches that everything happens according to natural laws, but that does not imply that acts which create grotesquely unnatural things are for that reason an ethical one. What constitutes ethical value of an action in Buddhism is not whether the action is natural or not.

In Buddhism what determines the ethical value of an act is not its functioning according to natural laws, but the motivation behind the act itself. An act, considered in and of itself, is neutral regarding its moral value; it is the motivation of the one who is doing the action that is important. If the motivation is such that it leads to harmful results, then an act is an unethical one, but if the motivation is for beneficial purposes, then the very same act can become ethical. Buddhist ethics is sometimes regarded as a consequentialist one, but an important difference from a standard consequentialist ethics is that Buddhism pays much more attention to the motivation behind an act, and it is the motivation that is more important in determining an ethical value of an act rather than purely the consequences. For example, in developing a human enhancement technology, such as one that enables a human to hear better. The act can be a

good one just in case the motivation is for the good of everyone as a whole, such as when one tries to develop the technology in order to help deaf people. However, if the motivation is a selfish or narrow-minded one, such as developing the technology out of the desire to gain monetary benefits just for oneself, then it is unethical.

Sometimes, however, the motivation can be mixed, as in the case where one develops a technology motivated both by the desire to help the deaf and to reap material reward. In this case Buddhism would say that the action would be both ethical and unethical. It is ethical just to the extent that the act is performed out of altruistic motivation, and it is unethical just in case where there is a selfish motive. There is no direct contradiction here since each of the ethical values are dependent on their respective motivations.

In one of the most important passages in the Buddhist Canon, there are the following verses that emphasize the supreme role that the mind plays in determining the value of an action:

> Mind precedes all mental states. Mind is their chief; they are all mind-wrought. If with an impure mind a person speaks or acts suffering follows him like the wheel that follows the foot of the ox.
> Mind precedes all mental states. Mind is their chief; they are all mind-wrought. If with a pure mind a person speaks or acts happiness follows him like his never-departing shadow (Yamakavagga, 2010).

This passage opens the *Dhammapada,* one of the most widely read Buddhist scriptures. It says that the mind is the most important thing; everything proceeds from the mind and everything also is made up by the mind. Thus if the quality of the mind is not pure, such as when one performs an action with selfish attitude, or with one or more of the defilements such as greed, anger and delusion, then the act itself cannot be said to be pure. On the contrary, if the quality of the mind is pure, then the act itself will also be pure. The act in both cases here can well be one and the same, but it becomes vastly different in terms of its ethical value due to the quality of the mind that is involved. Thus, in the case of human enhancement technologies, what is at issue is not the act *per se*, but the quality of mind behind it.

If this is the case, then what about an act such as enhancing sol-

diers to become more powerful than ordinary human beings? Could such an act be ethical according to Buddhism? This question can be asked in another way, which is: Could there be a positive, altruistic motivation behind creation and enhancement of human soldiers so that they are more powerful than their enemies? Could there be a good motivation behind an act of war at all? The answer is yes. We could imagine a situation where creation of robo-soldiers who are half machines-half humans for certain altruistic purposes, such as saving humankind from devastation. On the contrary, if the reason behind the creation of enhanced humans is not an altruistic one, but the opposite, such as when one enhances one's body in order to defeat others for the sake of material gain only for oneself, then the act is certainly an unethical one according to Buddhism.

Extension of Human Lifespan

One of most interesting applications of human enhancement technologies concerns how the technologies will be used to extend the length of human life. Knowledge and technologies are being developed that extend the lifespan beyond what has been hitherto possible. This requires highly advanced knowledge into the working of the human body at the cellular and molecular level, something that is being done with the development of nanotechnology and human enhancement technologies. As is the case with other applications of human enhancement technologies, the goal is not only to restore the normal function of a healthy human body, but to enhance it, in this case in order that the normally aging body will function in the same way as does a healthy, youthful one. Humankind has searched for millennia for the fountain of youth, something which promised to defeat the most feared enemy of life, namely death itself. Recent advances in sophisticated technologies have appeared to make this age-old search closer to reality.

As with the other applications of human enhancement technologies, the normal application is focused on treating diseases and disabilities that afflict human beings as they get older. Diseases such as Parkinson's or Alzheimer's attack humans when they get old, and technologies are being developed to combat them, mostly by studying the working of the brain and to restore its functions through various means. For example, chips can be planted inside an elderly person's brain to help the brain function normally. This will prevent brain deterioration and thus postpone dementia. Here it is quite clear that the line between the restorative or therapeutic function and the non-therapeutic, enhancing functions of human enhancement technologies are becoming blurred.

The problem lies in how one can specify, clearly and objectively, exactly what is the normal functioning of the brain and what is the goal that restorative technologies should aim for. What, exactly, is the "normal" level of brain functioning for someone who is, say, eighty-five years old? Shouldn't the brain of a "normal" 85-year-old function in a slightly less efficient manner than the brain of a 25-year-old? To "restore" the brain of an 85-year-old so that it functions exactly as well as that of a 25-year-old could be regarded as an "enhancement" beyond what is normal for people of that age. If this enhancement is accepted, then there would not seem to be any barrier against an attempt to extend the capabilities of a 25-year-old brain, perhaps to extend it beyond any brain of any naturally existing human being. Again all this hinges on our conception of what is "normal". If it shifts, then the distinction or the line between restorative and purely enhancing technologies will shift too.

So in a nutshell, the ethical problem of human enhancement technologies with regarding to the elderly and extension of lifespan is this: Is it ethical to use the technologies in such a way as to extend the lifespan of an individual further and further? Does extending the lifespan mean that we humans are again doing something that is unnatural, hence unethical at least according to some views? These questions are difficult to answer without a clear conception of what constitutes the normal functioning of an elderly human being. If, as is likely, one is to insist that the normal functioning of an elderly should be exactly the same as that of a healthy, youthful human being, then one seems to admit that enhancement beyond what is therapeutically required is all right, since there is no clear line between the two to begin with.

The ethical value of extending lifespan can be determined roughly in two ways. The first way is to look at death itself. If death is something to be avoided at all cost, then extending lifespan for the purpose of avoiding death seems to be tenable. If everything else is equal, one should always choose living rather than death if death is always to be avoided according to this point of view. Epicurus is well known to have a view on death such that death can be nothing to us, because when we are living, death does not occur to us, so death is purely negative when we are living and thus can be nothing to us. However, when we are dead, we are no more. We are totally non-existent and since there is no "we", death cannot be anything to us at all. If this argument is sound, then death cannot be a factor in any argument at all. But if this is the case, then any argument in favor of extending lifespan cannot depend on the fact that we

would like to avoid death.

A Buddhist Response

Steve Horrobin argues that life has an intrinsic value such that it is always desirable to extend the lifespan and that since the person is a process rather than an entity, lifespan extension has an "inalienable" intrinsic value (Horrobin 2006a; 2006b). Extension of lifespan enables the person to realize his or her potentials and to live out all kinds of dreams and goals that would not have been possible if the lifespan were limited by ones normal biological nature. In other words, according to Horrobin one should always strive for extending one's lifespan because not only is life intrinsically worthwhile in itself, but the extended life would make it possible for one to become anybody or to enjoy any kind of pleasures that life has to offer. Horrobin's example is particularly telling:

> Consider the notion and ideal of a Renaissance Man. A person fully integrated with their cultural milieu was once at least *possible*. What hope now that a single person may within the scope of their lifetime understand or know all concerning even the single discipline of biology, let alone further and other realms of knowledge? The harsh and bitter rigours of the Procrustean lifespan cut us off, increasingly, from the possibility of integrated experience and understanding of our own created realm of culture and of knowledge (Horrobin 2006a, p. 286).

So Horrobin would like to be able to experience all things, know all things and perhaps to enjoy everything possible that life has to offer in its unlimited variety. In the past the ideal of the Renaissance Man was taken seriously because it was then still possible for one person to master all fields of knowledge and to enjoy all kinds of artistic creations that were in existence at the time. However, in today's world that has not been possible at all because of the tremendous explosion in all branches of knowledge and in creative works, so there is simply not enough time for an individual person to master them all. From this observation Horrobin then argues that life is worth being expanded indefinitely. Given that the current human enhancement technologies might start to make

this seemingly unrealistic scenario a reality, this demands a response from the Buddhist. In a nutshell, Horrobin is arguing that life is intrinsically valuable because it gives us the chances to enjoy so many things; hence extending life is valuable because it gives us more chances. Ideally becoming immortal would then be the ultimate good because it gives us an unlimited amount of time to experience and to enjoy an unlimited number of things.[2]

Note that Horrobin emphasizes one's *experiences* and *enjoyment* of life that requires that there be one and the same person who does the experiencing and enjoying. For Horrobin it is not possible for there to be a series of persons who live successively and who experience things in turn. The reason is that some kinds of enjoyment require that one spends a long amount of time on education and training which would make it possible for the person to enjoy those things in the first place. A person may not be able to appreciate the intricacies of Bach's music on the first hearing, but after repeated trainings and experiences the person may start to enjoy Bach's music fully. Thus Horrobin's view requires that there be one and the same person whose lifespan should be expanded.

This view is in stark contrast to the Buddhist one. Firstly, Buddhism holds that even at a moment of time it is unwarranted to hold that there is a personal identity, since the person is a process, something comparable to a flowing river. Thus the Buddha and Heraclitus share this important aspect of their thinkings in common, as when Heraclitus says that one cannot step in the same river twice. Horrobin, however, may object that his view does not require that a person must be a self-subsisting entity. In fact Horrobin also argues that the person is a process and it is by virtue of the person's being a process that lets him or her enjoy and experience all that life has to offer (desirably indefinitely) (Horrobin 2006a; 2006b). However, as Horrobin's argument against the series view of persons makes clear; in order for one person to be able to enjoy and understand all of Bach's music, one has to undergo rigorous musical training, and in order to enjoy all of Bach's music and its perhaps unlimited depth in full, one has to be able to live longer than a normal human being does. Hence a person may be a series but Horrobin's view requires that the person in question has to be one and the same; in other words even if the person is a process, there has to be a core identity behind this process which enables the process itself to be part of *one and the same* person. Without such a core, the carrying over of identity across time is not possible. For Horrobin the desired picture is that of a man or a woman

who can live, say, for two hundred years, enjoying all the niceties of life and learning all the knowledge that there is to be learned. The man or the woman here, then, has to be *one* person.

This is the type of view that Buddhism has troubles with. A key component of Buddhist philosophy is that for any thing whatsoever, one cannot find a substantive core for such a thing such that it functions as the seat of identity for the thing itself. In other words Buddhist denies that there be anything comparable to Aristotle's "the what-it-is-to-be" or an essence that functions as the core identity of a particular thing. This is the main contrast between Horrobin's view and the Buddhist's. In arguing for the kind of person that is able to enjoy all the experiences that the extended lifespan will bring, Horrobin presupposes that there must be an enduring person, even though he argues that the person is essentially a process. The Buddhist, however, refuses to acknowledge that there be such an enduring person. Instead what we normally take to be a person, for example when we refer to others using personal pronouns, is only, ultimately speaking, what appears to our perception and functions in our daily lives as though they are enduring entities. Behind these appearances, however, there are nothing but episodes of mental and physical events that all together make up, to the perceiving mind, the appearance of a person.

There is obviously not enough space in this paper to lay out this important Buddhist view in any detail. But at least we can see it relies on analysis. When one pares down a person one finds nothing that functions as the core that serves as the seat of the identity of the person. For example, when one pares down someone's body, one finds nothing but bodily parts, none of which looks like the core seat of identity. The brain seems to be the most promising candidate, but even the brain, physically speaking, is merely an organ and does not remotely resemble the person whose brain it is. Alternatively, the analysis might also be directed at the mind. But when we were able to inspect our own mental content, we would find that the content consists of ever changing episodes of mental events, such as memories, desires, passing thoughts, plans, ruminations, and so on, none of which appears to be the core seat of identity either. Thus the Buddhist concludes that the belief that there be a core seat of identity which functions as the essence of the person himself or herself is an illusion created by our habits. This is a very complicated argument. But for the purpose of this paper, we can see that, if the Buddhist view is tenable, this will pose a serious problem for Horrobin's view.

But if the person is ultimately a perceived entity, a construction, then what consequence does this view have on the problem of lifespan extension? If there is ultimately no person, then what exactly is extended when the technologies are applied? One might say that, according to the Buddhist view, no self persists through time. The fact that I very closely resemble my previous self that existed yesterday shows that there is a sense in which there is an 'I' that endures. But according to Buddhist this is an illusion. There is nothing that gets carried over from yesterday to today; anything that looks like there being the same person as the one who is typing this paper is merely due to a habit that takes up similar episodes of an event to be an enduring entity. And with the dramatic changes of aging, then there is a real sense in which I may not be the same person I am today. If this is the case, then this contradicts Horrobin's view that one can maintain one's identity throughout.

Horrobin argues that extending life is valuable in terms of accumulating the knowledge and experiences that one would not have been able to enjoy had one's lifespan not been extended. He dismisses the series view of person as being "conservative", and not being able to accommodate his preferred view of being able to enjoy things with the extended life. For Horrobin life is worth living precisely because it enables one to enjoy the good things, and if there are more good things to enjoy, then it is good to extend the life so that one is able to do so. According to the Buddhist, however, the question whether human lifespan should be extended should be based on what kind of motivation lies behind the attempt to develop the lifespan extending technologies. As in the case of human enhancement technologies, the Buddhist gives prominence to motivation. Thus the act of extending lifespan is not ethical or unethical per se, but its ethical value depends on the nature of motivation behind it. Perhaps one would like to develop lifespan extension technologies in order to save human beings from extinction (in this case we need to suppose that all humans have lost their capabilities of reproducing themselves, perhaps due to all the chemicals that humans have ingested throughout the years). However, if the development of the technologies is such that it responds to the selfish need of someone's desiring to extend his or her own lifespan simply for the purpose of expanding his or her own time for enjoying the pleasures, then the motivation is not a wholesome one and hence it is unethical. Since Horrobin's focus seems to be mostly the possibility of enjoying the pleasures (and to learn all the knowledge, which is also a kind of pleasure) that life has to offer,

then Horrobin's motivation does not seem to be an other-regarding one. Instead one would want to extend one's lifespan only because one wants to experience more pleasures for *oneself*. If this is so, then Horrobin's view would be criticized by the Buddhist as being "unwholesome".

Furthermore, there is another dimension of Horrobin's argument where he assumes that life has nothing but pleasures to offer. However, in reality life has both pleasures and pain. Even though tremendous progress in science and technology has been made which has made extension of healthy lifespan a serious matter, there is no guarantee that the extended life will always be pain free. This is because pain is both physiological and mental; both physical and mental factors are involved in one's experiencing of pain. Moreover, people differ in their perception and in their threshold of feeling pain. Hence it is difficult to predict that future life will be always free of pain. Even if all the known physiological causes of pain will be eliminated, that will provide no guarantee that people in the future will experience no pain at all because it is possible that pain can happen even if there are no physiological causes, such as when one feels pain in their phantom limbs. If this can be the case, then Horrobin's picture of someone living an extended life enjoying all sorts of pleasures may be too rosy. As pain will almost certainly be with us, it is possible that in the extended life there will be both pleasures and pain. This seems to undercut Horrobin's argument that life is worthwhile because it gives us only the pleasures. When the pain is factored in, the worth of the extended life would be the same as the normal, unextended one. If one lives significantly longer, then one almost certainly experiences both pleasures and pain, just as one experiences both sensations when one lives the old style, unextended life. Thus the worth of the extended life is not augmented by the premise that there will be more pleasures. Since there will be both pleasures and pain, the two can cancel each other out, rendering Horrobin's argument vacant. If there is anything that makes the extended life worth living, it is not the premise or the promise that it will bring us more pleasure.

Another kind of sensation that could almost certainly happen to the extended life is boredom. This is easily understandable considering that one lives far more than what has been possible for humans up until now. If one were able to live for, say, three hundred years, one might enjoy all the pleasures and learnings that Horrobin talks about for a while. But what would prevent one to feel bored by all this? If there is seemingly indefinite time frame open up to someone, there might be at first a

feeling of elatedness in realizing that one can now experience unlimited things. But if one feels bored by all of this, then the pleasures will not seem to be pleasurable any more. This can happen to anybody when they have too much of good things. The worth of those good things would seem to diminish. Furthermore, if the time available for someone would be almost indefinite, then it is almost certain that at some time in his or her extended life he or she will feel bored. When one is bored, then all the pleasures that used to excited one will not be so pleasurable or exciting any more.

The situation is different that experienced by someone who lives in a more limited time frame. For those living the unextended life, they know that death is imminent. It can happen to them at any time. This makes them live their lives to the full, squeezing every moment as if it were their last. In this situation there is no time to feel bored; on the contrary one would feel very intensely, as if a whole lifespan could be compressed into only a few hours or minutes. This kind of life, however, is not available for those who have the extended lifespan, because they can always postpone any events to a future date.

The point is that the reason for the value of the extended life does not seem to lie in the putative fact that it can bring us pleasures. More often than not it will bring us boredom, which can be as bad as pain. According to the Buddhist perspective, the value of someone's life, or in other words the *meaning* of someone's life, lies in whether he or she has pure, altruistic motivation in living the life or not. The life can be short or long–Buddhism has nothing in principle against the development and use of lifespan extending technologies, which in fact are subsets of the human enhancement technologies that we have talked about earlier. In any case, the meaning and worth of life does not consist in how short or how long the life is lived, but it does consist in how *well* it is lived. If the development and use of lifespan extending technologies arise out of pure and altruistic motivation, then Buddhism would have nothing against it and in fact would commend the effort. But if the development arises out of the desire to continue consuming the pleasures indefinitely, then Buddhism would strongly advise against the attempt. One reason for doing so would be that it is totally unreliable to predict that one's life extended in this way would consist totally of pleasures. At the very least boredom will set in. An extended life will contain not only pleasures but also pain and boredom. Moreover, the value of life, either extended or not, lies more on how well it is lived rather than how much pleasures the subject

can consume.[3]

Acknowledgement

Research leading to this chapter has been partially supported by a grant from the Commission on Higher Education and the National Research University Project, project number HS1025A and AS569A.

Endnotes

[1]There are a number of fine introductions to Buddhist philosophy. One is Mark Siderits (2007); another is Gethin (1998). These works, nonetheless, do not even scratch the surface of the enormous amount of literature on Buddhism and Buddhist philosophy.

[2]Being immortal in this sense is different from what Floridi (2008) describes as being 'e-mortal' where an "artificial companion" acts as a surrogate to a person and could even survive the person himself due to large memory storage that contains the person's private information. In Horrobin's sense, being immortal here is that of flesh and blood. It's our own body that borders on being immortal, and not of any surrogate.

[3]The chapter presents how a general tenet of Buddhism would look at these issues. However, there are obviously a variety of religious viewpoints in existence, some of which might be similar or different from that of Buddhism offered here. It would be interesting to see how the values of other religions, such as Christianity, Islam or Hinduism, would look at the issues of human enhancement and extension of human lifespan. See, for example, Mark Hanson (1999) for a Christian (Protestant) perspective of human enhancement, and Athar (2008) for an Islamic perspective on the same issue.

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