

Human Enhancement and the Story of Job

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Abstract: This article explores some implications of the concept of transformative change for the debate about human enhancement. A transformative change is understood to be one that significantly alters the value an individual places on his or her experiences or achievements. The clearest examples of transformative change come from science fiction, but the concept can be illuminatingly applied to the enhancement debate. We argue that it helps to expose a threat from too much enhancement to many of the things that make human lives valuable. Among the things threatened by enhancement are our relationships with other human beings. The potential to lose these relationships provides a compelling reason for almost all humans to reject too much enhancement.

Keywords: human enhancement; transformative change; relationships

Recent years have seen a diversification of philosophical interest in human enhancement. Philosophers have moved beyond the investigation of human enhancement in general to consider specific varieties of enhancement. Separate debates address the specifics of cognitive enhancement, moral enhancement, and enhancement as a means of extending human life-spans. To begin with, moral aspects were the exclusive concern of philosophers of enhancement. At issue was the moral permissibility or impermissibility of enhancing humans. There is a new focus on the prudential aspects of enhancement. Here we ask whether we should expect human enhancement to promote the interests of those who are subject to it.

This article addresses prudential issues that arise with respect to radical cognitive enhancements. According to Agar (2014), radical enhancement “improves significant attributes and abilities to levels that greatly exceed what is currently possible for human beings.”¹ These can differ prudentially from moderate enhancement, which “improves significant attributes and abilities to levels within or close to what is currently possible for human beings.”² Suppose that it can be prudentially good to administer a pharmaceutical that boosts one’s IQ by 5 points. Would a brain implant that increases intelligence 100fold promote that person’s interests to a correspondingly greater degree? We argue that a sharp increase in the costs associated with enhancement means that cognitive enhancements of a lesser degree can be prudentially good, whereas those of a great degree are prudentially bad. How would something prudentially good in lesser degrees become prudentially bad in greater degrees? We use the case of human relationships, features of human lives that contribute greatly to their value, to illustrate the propensity for the costs of cognitive enhancement to significantly increase with increases in the degree of enhancement. To the extent that we value relationships with other human beings, we should be leery of offers to enhance our cognitive abilities.

This focus on degrees of enhancement is not otiose. We should not assume, as we enter the era of human enhancement, that a considerable period of time will separate moderate from radical enhancements of human capacities. There has been rapid progress in the technologies required by human enhancement. A neuroprosthesis that marginally improves human reasoning ability may be followed

promptly by one that greatly enhances it. It would be irresponsible for philosophers of enhancement to fail to consider these eventualities.

The Morality and Prudential Rationality of Human Enhancement

Prudential questions about human enhancement address the extent to which they promote the interests of those who are subject to it. The focus of prudential concern differs from morality's interest in characterizing the ways to modify humans that might be prohibited, obligatory, or permissible.

Consider prudential advice about enhancement in terms of what might be called "the friend test." Suppose a friend requests advice about whether to significantly enhance her cognitive capacities. How would you advise her? You should include specifically moral advice. She needs to know if the enhancement she is considering is morally prohibited, permissible, or obligatory; however, your advice should go beyond informing her about moral obligations and permissions. You should offer advice about whether the enhancement is likely to be in her interests. There is a useful analogy between the prudential value of philosophical advice about enhancement and advice about investment strategies offered by experts on financial markets. In an ideal world, our financial advisors would tell us about the moral aspects of a proposed investment, but they should offer prudential advice. Will the investment promote the interests of those considering it?

When experts in enhancement and experts in financial markets offer prudential advice, they point to complexities that too casual a consideration is likely to overlook. We understand that financial markets are complex. The expected cybernetic and genetic technologies are likely to have complex effects on us. We should not blithely suppose that any measure that satisfies the definition of a human enhancement is necessarily in the interests of the human beings who are subject to it. Our view can be contrasted against that of John Harris who writes that "in terms of human functioning, an enhancement is by definition an improvement on what went before." Harris thinks that if a purported enhancement "wasn't good for you, it wouldn't be enhancement."³

We argue that the superficial appeal of these enhancements masks significant downsides. A misunderstanding of financial realities can lead people to make investments that do not promote their interests. So too, a failure to grasp the implications of great degrees of enhancement can lead to choices that do not promote established human interests.

The location of this problem in the domain of prudential rationality does not mean that it lacks moral implications. Suppose one is making enhancement choices on behalf of a dependent other. That person might act immorally if making choices that do not promote the dependent other's interests.

Weighing the Prudential Costs and Benefits of Great Degrees of Cognitive Enhancement

Our interest in the prudential value of enhancements of great degree directs against assessments in which cognitive enhancements are simply good or bad. We must weigh their benefits against their costs. It is wrong to deny the considerable benefits brought by cognitive enhancement. Smarter humans can solve problems too difficult for less intelligent humans. The problem is that once we have

labelled a modification “an enhancement,” we tend to become less aware of its downsides.

There is a mistaken tendency to view enhancement as a resource akin to money. If an offer of \$1000 promotes one’s interests, then an offer of \$10,000 should promote those same interests to a much greater degree. A person cannot be made worse off for the addition of \$9000 even if that person can find no use for it. The broad utility of money makes it likely that the person will find a valuable use for the additional money. If not, the person can throw it away. Enhancement seems to share this manner of broad utility. Additional IQ points have a wide range of potential uses. In this article, we describe human interests for which great degrees of enhancement are predictably too much of a good thing. We show that it can be rational to accept offers of lesser degrees of enhancement, but reject offers of greater degrees. There are significant costs that arise with respect to great degrees of enhancement.

This article brings some of the costs of cognitive enhancement more clearly into focus. The identification of costs does not settle the issue of whether a given enhancement is a good or bad idea. It could be a good idea if its benefits outweigh its costs. We use the example of human relationships to make the case that as the degree of cognitive enhancement increases so too do its costs. These costs become more pronounced with greater degrees of enhancement. Such is their magnitude that they are likely to be beyond compensation by any prudential benefit.

Degrees matter to prudential choices. It may be morally permissible for an informed adult drinker who has no plans to drive or operate heavy machinery to consume vast quantities of wine. That person’s decision may be freely taken and have no detrimental effects on others. We can suppose that the person has no dependents who might be harmed by his or her predicted incapacity. Therefore, if we are offering that person specifically moral advice we may limit ourselves to offering that his or her actions violate no moral duties and are therefore morally permissible. Suppose the person is asking for advice on whether the intended binge is prudent. Anyone who enjoys a good wine with a meal should understand that prudential rationality finds a difference between two glasses of pinot noir with an evening meal and two bottles. When it comes to alcohol there can definitely be too much of a good thing. We propose a feature of cognitive enhancement that conforms to this pattern. Too much cognitive enhancement predictably undermines a central human interest. This central human interest is in the relationships we form with other human beings.

The Story of Job

We begin our investigation of the effects of radical enhancement on relationships by discussing a case that involves no enhancement. It does nevertheless involve a relationship in which there is replacement of something objectively good by something objectively better. This is the biblical story of Job.

In the *Book of Job*, God is approached by Satan. He says to God that Job, a truly perfect and righteous man, is only so righteous because God has blessed his life.⁴ God, unimpressed by Satan’s assertion, offers him a wager. He gives Satan permission to afflict Job as he sees fit, as long as he does not kill him, in order to test Job’s faithfulness.⁵ Job is tormented by Satan; his livestock are killed, his properties are destroyed, he is afflicted by agonizing boils.⁶ Worst off all, his children

are killed when their house collapses in on them.⁷ He suffers horribly, but remains faithful to God in spite of what he endured, and he is rewarded for his faithfulness. God returns to Job twice what he had before, double the property he lost.⁸ He also is provided by God (if we take a literal reading) with seven new, better children, to replace those who were killed.⁹ Job is satisfied with what God allots him.

Suppose that we limit discussion to what happens to Job's children and how that affects him. There seems to be case for viewing Job as benefiting from the wager. He suffers the loss of his children, but these are replaced by better versions. The naming of Job's daughters suggests that they are superior to those they replaced. The first daughter Job called Jemimah, meaning "turtle-dove," a name used for graceful birds, plants, or precious stones.¹⁰ The second he called Keziah, the name of a prized variety of cinnamon, and the last he called Keren-happuch, a name referring to eye-shadow.¹¹ The superiority of the new daughters is further supported by the assertion in the final chapter of the *Book of Job* that there were no women in the world as beautiful as his new daughters.¹²

The replacement of Job's children introduces a complication absent from the doubling of his property. A shift in temporal perspective is likely to lead Job to make inconsistent judgments about the replacement. First consider the time slice of Job's life many years after God's wager. The trauma he experienced as a result of the wager is a fairly distant memory. He has come to love his new children. This love permits him to recognize and take pride in the senses in which his new daughters are superior to those he lost. Jemimah, Keziah, and Keren-happuch are more beautiful, more precious, and brighter than the daughters that God permitted Satan to kill. He occasionally mourns the daughters he lost, but he understands that if these original daughters had not died, he would not have the daughters he currently loves. Such is his attachment to Jemina, Kezia, and Keren-happuch that we can suppose that we would reject an offer from God to reverse time so that his original daughters were not killed but his new daughters were never brought into existence.

The temporal inconsistency emerges when we inquire into Job's attitude prior to the wager. Suppose that a pre-wager Job were informed that he could be party to a wager that would predictably replace his objectively good enough children with objectively superior versions. All he would have to do to acquire the improved versions would be to mourn the deaths of his original children and play his part in proving God right. After a period of mourning he will predictably be rewarded with objectively superior children. We can imagine that Job would be horrified by this offer. He would surely reject the offer even when told that the passage of time would lead him to deeply love the replacements and that he would predictably celebrate the respects in which his new daughters were superior to those he had lost. He would reject the offer even when told that with the passage of time he would be so content with the outcome of change that he would refuse an offer to reverse it.

There is a temporal inconsistency in Job's evaluation of the change. Before the replacement it would seem right for him to reject it. After the replacement it would seem right for him to refuse that it be reversed. This temporal inconsistency indicates the gravitational power of relationships on certain of our values. A shift in temporal perspective is much less likely to lead to inconsistent judgments about the change in his property. The respects in which his property is good prior to the change are respects in which it is better after. We can imagine that Job lived well

prior to the wager. His home would have been spacious; however, he is likely to understand the sense in which the palace he comes to inhabit after playing his role in dispelling Satan's skepticism is superior to his residence prior to the wager. Giving up the less good residence to achieve the better residence seems like a good deal to Job at both time points. There are less likely to be temporal inconsistencies.

How is this story relevant to the debate about enhancement? We suggest that it permits us to explore the prudential desirability of certain features of enhancement. The enhancement of our capacities introduces temporal inconsistencies. This is because the relationships that we form with other people are contingent on features of our psychologies that would be threatened by enhancement: the greater the degree of enhancement, the greater the magnitude of the threat. We may be confident that, once enhanced, we will form relationships superior to those that we lost. But Job's attitude to God's transformation of his life applies to enhancement. We may predict that we will be happy once we have undergone enhancement but still find it right to reject an offer of enhancement.

The Effect of Enhancement on the Psychological Bases of Our Relationships

The enhancement of our cognitive capacities is likely to undermine relationships by means of its effects on the psychological and emotional states essential to them.

Shared interests are features of some of our most important relationships. One's interests depend, in part, on one's intellectual capacities. An interest in string theory assumes a capacity to understand at least some of it. If someone were radically enhanced, it is likely that that person's interests would change, because of the change in his or her intellectual capacities. Acquiring the ability to think about more complex parts of reality might seem to be unproblematically beneficial, but it has consequences, because relationships are founded on shared interests. People enjoy the plays of Shakespeare because they can relate to the very human predicaments the characters. A friendship based on a shared love of Shakespeare is likely to suffer if one friend comes to view Hamlet, Juliette, and Othello, as simple-minded fools.

One possibility is that both partners radically enhance so as to preserve shared interests. Two friends who undergo radical enhancement may acquire compatible interests; however, a case of cognitive enhancement with which we are familiar shows that this is an unlikely outcome. The passage from childhood to adulthood involves quite considerable cognitive enhancement. Children with a passion for toy soldiers and the game snakes and ladders, tend to find that these interests do not survive the transition to adulthood. Childhood interests evolve in ways that are difficult to predict. It is possible that an interest in toy soldiers and model tanks will translate into a career in the military although it does not for many children.

The comparison between the enhancement that occurs as we grow up and radical enhancement may seem to undermine our case against the latter. The fictional case of Peter Pan notwithstanding, it is clearly good to grow up even if that process undermines friendships based on shared interests. So why should it not also be good to undergo radical enhancement?

Our purpose here is not to directly reject radical enhancement, but to identify costs associated with it that receive insufficient recognition from advocates of enhancement. Growing up also comes with costs. When Peter Pan refuses to grow up,

he, in effect, chooses to preserve experiences that he finds valuable. Most children view the benefits of growing up as more than compensating for the loss of valuable childhood experiences. They look forward to having lives that are like those of their parents and caregivers. They accept that the costs of growing up as justified. The costs of great degrees of enhancement are higher for adults than they are for children. Children have many passions, but they tend to lack a reflective awareness of the meaning of those passions that would organize them into a life plan. Adults with a passion for Shakespeare tends to have more than a strong interest in the works of the bard. They have a sense of how that interest relates to other plans and projects. They conceive of themselves as lovers of Shakespeare. The nuanced self-reflection that organizes passions and interests into a life plan tends to be lacking in children. It reduces the costs associated with coming of age.

Empathy is important for many significant human relationships. Part of the reason we can empathize with others is that we can picture ourselves *as them*. We can think, "what if that happened to *me*?" If we were to be radically enhanced, we might no longer be as empathetic. We might not be able to think about what it would be like to be another human being in certain situations. This would be because we would be far removed from the experiences of most humans. As a result, one would have a decreased ability to empathize with the unenhanced, and the unenhanced would have a decreased ability to empathize with the enhanced. Relationships require empathy to flourish; reducing people's ability to empathize would, therefore, likely undermine their relationships with others.

A good parent-child relationship features empathy, going both ways. Parents must be able to empathize with their children (at least to some extent), and, likewise, children must be able to empathize with their parents. Parents are not able to perfectly empathize with their children; often they are at a loss as to why their child thinks or acts in a particular way. However, they can understand to some degree what it's like to be a child, because they too were once children themselves. Children also do not always understand their parents' experiences and the reasons why they act as they do; however, they can empathize to some extent with their parents.

Suppose a parent resolves to radically enhance the intellect of a child. Radical enhancement is likely to undermine the empathy that lies at the heart of a good parent-child relationship. We can allow that the child could receive benefits from increased intellect, but that child would not be able to have the same kind of relationship that an unenhanced child could have with a parent. The difference in intelligence between parent and child is likely to affect the relationship badly. As children, we look up to our parents and see them as being full of wisdom about many topics. They understand how the world works better than we do; they teach us and help us to make sense of what is around us. Sometimes they even learn *with* us. Radically enhanced children would predictably not see much value in learning from and with their parents. Why would trips to the zoo to learn about animals or to museums to marvel at the past and at technological innovations interest a radically enhanced child? The child's own intelligence and knowledge would very quickly outstrip that of the parents, and the child would see little use for the activities that parents and children usually engage in.

Radically enhanced children would likely not be able to understand their parents' beliefs and interests. The same would hold for the parents; their child's interests and concerns would be very different from their own. There would be little common

ground for understanding one another and building a healthy relationship. Radically enhanced children would also be far less able to empathize with their parents and *vice versa*. Radically enhanced children's experience could be so far removed from that of their parents that they would not be able to understand their parents' position. Likewise, their parents, having never been radically enhanced children themselves, would likely struggle to empathize with their children, having no relevant experiences of their own to draw upon. We were all once children, but none of us were ever radically enhanced children.

It is still possible to have meaningful relationships with beings who are far less intelligent than ourselves, but the kind of relationship one would form would be different. The well-known gorilla Koko, who is very intelligent in comparison with other gorillas and can use American Sign Language, has relationships with her carers.¹³ Koko and her carers benefit from these relationships. There is certainly room in our lives for such relationships, but they should not displace the very distinctive relationships we have with our romantic partners, our human friends, and our children. These are the kinds of relationships that tend to define our lives rather than being merely incidental to them.

Sarah Chan and John Harris argue that the desire to be connected with one's children is a matter of personal preference. They write that the potential for the parent-child relationship being undermined "does not show that creating posthuman children would be morally wrong. Nor does it show that it would always be the rational choice to avoid doing so."¹⁴ People who lack the desire to have a connection of the kind in question with their children, who think that they would still share enough experiences in common, or who think that the benefits of being posthuman outweigh the loss of shared experience, will not have a reason to reject radical enhancement, and would be justified in creating posthuman children, according to Chan and Harris.¹⁵ The problem with this response becomes apparent when the question is posed in terms of prudential rationality. It may be morally permissible for parents, under appropriate circumstances, to take steps that would emotionally alienate them from their children, but strong bonds with children are nevertheless important human needs. The fact that there are some human parents who care little about this need does not gainsay this. When giving prudential advice, we can take established patterns in human needs and desires into account.

Consider the analogy to advice about financial investments. Suppose your friend proposes to invest all of his savings in ways that your understanding about financial markets leads you to believe are recklessly risky. You know before you offer your advice that there is nothing necessarily immoral about a desire to lose all of your savings. It is possible to think of justifications for doing so. But your knowledge about human beings tells you that most people do not deliberately eliminate all their savings. When they do, they are likely to be worse off. This motivates your cautionary advice. You would need to hear a great deal about a new desire for an ascetic lifestyle before you considered you had met your obligation as a friend to strongly advise your friend against courses of action that are predictably bad for him. Similar points apply to prudential advice about radical enhancement. Your friend may insist that she has no interest in other human beings and, as a consequence, places no value on the capacity to form the kinds of relationship with them that humans typically value. This should nevertheless be acknowledged as being very unusual. The recognition of this possibility

would not absolve you from strongly suggesting that a friend not take this course of action.

Another seemingly plausible counterargument is to point to the fact that, although the radically enhanced might lose their relationship with their unenhanced, or even radically enhanced, partners, they will gain the ability to form objectively superior relationships with other radically enhanced people.¹⁶ They might expect to form much deeper and more intimate connections than we unenhanced humans could ever hope to. We view this case as analogous to the Story of Job. Radical enhancement does not kill your current friends, but it does impact the psychological states that are the bases of these relationships. We might expect objectively superior relationships with other radically enhanced people, but whether this fact should motivate one to sacrifice one's current relationships depends on the value of those relationships to a particular person. Earlier we supposed that the pre-wager Job would refuse to sever his connections with his objectively less good children in order to form relationships with the objectively superior children that God will provide him once he plays his role in disproving Satan's conjecture. Similar caveats apply to radical enhancement of the psychological states that underlie our current relationships.

The possibility of there being better possible relationships should be welcome news to those currently mourning the loss of a relationship. However, the cliché of there being "plenty more fish in the sea" is rather odd advice for those who are in relationships.¹⁷ It is true that it is very likely that no matter how much you value the relationship with your current partner, there is another person with whom you could have a relationship that you would value even more. If one were to apply the aforementioned cliché to one's current relationships, there are already avenues aside from radical enhancement to seek out better relationships. You could use dating websites to keep an eye out for potential partners who are more attractive and compatible with you than your current partners. Most of us are not inclined to do so, however, and the reason is more than that we believe it is immoral or we worry about being caught. The reason is that we place significant value on our current relationships, and that the possible relationships we could have with others does not have anywhere near as much. We love and care for our partners *as they are*, with all of their eccentricities and flaws. The possibility of there being better relationships does not motivate us to be reckless about our current relationships.

Summing Up the Prudential Case Against Radical Cognitive Enhancement

This article has detailed costs associated with radical cognitive enhancement. We accept that none of the costs we describe suffice to make radical enhancement straightforwardly wrong. Each of the costs we describe could be fully warranted if it brought benefits of sufficient magnitude. We will consider one example of a choice that predictably harms relationships but seems to bring benefits that more than compensate for these harms.

Jess grows up in a small town. The town's local economy centers on farming. There are limited opportunities for higher education. Jess forms strong friendships with the children she goes to school with, but she differs from her friends in having academic ambitions. She has always been a passionate reader and yearns to continue her education at a university in a big city far from her town. In the final

year of her schooling, she applies for admission and is not only accepted but offered a full scholarship. As she considers the offer she reflects on its effects on her current friendships. She pictures a possible future in which she goes to the university, does well, and goes on to a distinguished academic career. This possible future involves occasional trips back to the town of her birth. When there, she envisages reconnecting with the friends of her childhood and predicts that it will be fun to see them again, but she also imagines that they won't have all that much to talk about. Most of them will be farmers or farmers' spouses. Her experiences will be of big cities and centers of learning and scholarship. Jess faces a dilemma. She either preserves her relationships or follows her dreams of an academic career.

Many people confront choices like Jess's. It would be perverse to say that all of those who place the career over the preservation of childhood friendships act in error, that their lives would have been better had they stayed at home and done what their classmates did, but it is also a mistake to oversimplify the choice made by Jess and people in her situation. The decision to leave home incurs prudential costs. She cares about the people she will leave behind. It is wrong to suppose that these costs are illusory. What does seem true about Jess's choice and the many choices like hers is that the benefits brought by leaving home more than compensate for the costs. When she thinks about her future, she predicts that she will look back on her decision to leave home with sadness about the friendships that were lost, but she feels some confidence about the benefits brought by her successful academic career. She anticipates benefits that will more than compensate for these losses.

We think that radical enhancement differs from Jess's decision in a way that should lead most of us to think differently about it. Radical enhancement greatly increases the magnitude of costs. It goes beyond predictably damaging connections with childhood friends. It damages all human relationships. Its appeal should be limited to misanthropes.

Concluding Comments

This article has examined the prudential costs of great degrees of cognitive enhancement. We point to costs of enhancement that cursory assessments are likely to overlook. A proper evaluation of the prudential value of enhancement must take into account its perspectival nature. We may predict that Job will be happier with his objectively superior daughters but this does not mean that the replacement of his daughters is in his interests as he would assess them before God's wager with Satan. Similar warnings apply to our assessment of the prudential benefits of large degrees of cognitive enhancement.

Notes

1. Agar N. *Truly Human Enhancement: A Philosophical Defense of Limits*. Cambridge, MA: MIT Press; 2014, at xi.
2. See note 1, Agar 2014, at xi.
3. Harris J. *Enhancing Evolution*. Princeton: Princeton University Press; 2007, at 9.
4. Job 1:8–11.
5. Job 1:12.
6. Job 1:14–7, 2:7.
7. Job 1:18–9.
8. Job 42:10.

9. Job 42:13–5.
10. Hartley J E. *The New International Commentary on the Old Testament: The Book of Job*. Grand Rapids: Wm. B. Eerdmans Publishing Co; 1988, at 543.
11. See note 10, Hartley 1988, at 543.
12. Job 42:15.
13. Patterson F, Tanner J, Mayer N. Pragmatic analysis of gorilla utterances: Early communicative development in the gorilla Koko. *Journal of Pragmatics* 1998;12:35–54.
14. Chan S, Harris J. Post-what (And why does it matter?). In: Lippert-Rasmussen K, Rosendahl Thomsen M, Wamberg J, eds. *The Posthuman Condition*. Aarhus: Aarhus University Press; 2011, at 85.
15. See note 10, Chan, Harris, at 85–6.
16. Agar N. *Humanity's End: Why We Should Reject Radical Enhancement*. Cambridge, MA: MIT Press; 2010, at 187.
17. See note 12, Agar 2010, at 187.