Reviewer's report

Title: Limits to human enhancement: nature, disease, therapy or betterment?

Version: 1 Date: 17 Jul 2017

Reviewer: Anna Pacholczyk

Reviewer's report:

The article continues to have very strong points and have been improved since the first version. Revisions have been incorporated to a sufficient degree for the manuscript to be accepted.

Author may or may not wish to further incorporate the following comments:

Minor: 'Lasic eye surgery' --> it spells Lasik eye surgery I think. It is an uncommon way to refer to this procedure, at least to my geographically constricted knowledge - maybe it is usual in the U.S.? Perhaps saying 'laser eye surgery' will suffice?

p.6

36-40 Again, unfortunately I am not sure where this conclusion came from. The previous two sections are well organised and comprehensive descriptions of arguments and counter-arguments, but provide little evaluation of the arguments put forward. As a result, the conclusion is not justified on the basis of what is in the paper as it stands.

RESPONSE: I agree, but the aim is only to present the arguments and counterarguments without going too deep into the assessment of them (and enter the details of the specific debates). Advice on how to address this comment would be much appreciated.

Reviewer: One strategy is to make sure that where arguments are only described, the paper makes no normative claims. Another is to go forward and do more evaluation so that the normative conclusion is justified: this is an author's call which way this should go. It is up to the author to decide whether to leave it as it is or do additional work.

Naturalness: Limits in nature

'Correspondingly, nature has been normative in many ways, e.g., epistemically, aesthetically, and morally. For example, our knowledge of how to heal a broken leg, how to restore its outlook, and
the impetus to do so is drawn from the norm of a well-functioning leg of a being in its natural habitat.'

- 'outlook': please rephrase, not clear whether it refers to appearance of future

'Accordingly, a common understanding of medicine tends to think that it works according to the norms of nature, as it restores a given harmony.'

-> 'Accordingly, a common understanding of medicine tends is that it works according to the norms of nature, as it restores a given harmony.'

50-51 There is little argument to support the conclusion that there is not knock-down argument: while the article does a very good job of reviewing various concepts/arguments/counterarguments and categorisations, it does not provide (so far) the evaluation needed to support the conclusion that none of those arguments are strong arguments for setting limits on HE.

RESPONSE: I very much like this comment, as I am challenged by it. I do think that the counter-arguments present relevant objections to the limit-setting arguments from nature. One may of course dismiss such counterarguments and support some of the nature-based arguments (for limits to HE). However, then I would enter the naturalness-debate, which I only want to review. One way to handle the issue would to rephrase "knock-down argument," but then the main argument of the article would lose momentum. I am open to suggestions here would very much appreciate advice on this matter.

Reviewer: In terms of 'where': The structure indicated to me that a more clear evaluation will follow the first, more descriptive, part. In terms of 'how': guess one would expect to get a picture of what a knockdown argument would look like and then be explicitly shown how the strong version of arguments from nature do not hold. The author might choose to add a paragraph that explicitly evaluates arguments and counterarguments (their strength) & give examples that illustrate why those fall short of a knockdown argument. If by knockdown one means 'that all philosophers/reasonable and reasonably informed persons agree' then there clearly isn't that much consensus. Although van Inwagen proposed that 'There are…no knockdown arguments in philosophy. There are no philosophical arguments that all qualified philosophers regard as compelling' so there is a question of how high we set the bar. Nozick, for example said once that 'Perhaps philosophers need arguments so powerful they set up reverberations in the brain: if the person refuses to accept the conclusion, he dies.' Jokes aside: whatever the reasonable expectations for a knockdown argument would be, the expectations should be made explicit and then the state of the debate compared to it. On one definition of a knockdown argument (which requires that it brings agreement) simply showing a large amount of reasonable disagreement is sufficient. On another definition (where a knockdown argument ought to bring agreement)
additional evaluation is needed (arguing that there is at least one very strong counter-argument should be sufficient, but one has to explicitly argue that something is a strong enough counterargument to fulfill this purpose). However, I understand that there is a balance to be struck between a more in detail involvement with the debate and not getting trapped in the detail, so I will leave this as the author's call. Hope this helps.

36-40 Again, unfortunately I am not sure where this conclusion came from. The previous two sections are well organised and comprehensive descriptions of arguments and counter-arguments, but provide little evaluation of the arguments put forward. As a result, the conclusion is not justified on the basis of what is in the paper as it stands.

RESPONSE: I agree, but the aim is only to present the arguments and counterarguments without going too deep into the assessment of them (and enter the details of the specific debates). Advice on how to address this comment would be much appreciated.

Reviewer: Understandable (especially given the breadth of the reviewed literature)! But then one has to qualify the conclusions drawn - e.g. that there seems to be a lot of disagreement/controversy is a descriptive claim supported by the review of the arguments. If in want to argue more, the reader needs to be given more of 'why' - why it is the case that the arguments are not convincing? 1) One option would be to briefly assess each conception/strongest conceptions brought forward [sentence-two each], using referencing instead of full evaluations evaluating. Another option would be to say that a) given counterarguments (including some strong ones such as X) none of the arguments for limiting seem convincing and b) say something about the limited scope of counterarguments (and demonstrate) to justify the claim that counterarguments are not convincing. To show that an argument is not convincing is (generally) more difficult that to show that an argument is not a knock down argument. Again, up to the author.

55-57 I think the potential conflict between individual wellbeing and society's interest at large is a point well made, but this does not undermine the definition of enhancement proposed by Savulescu and others. This might simply mean that not all enhancements are good things all things considered from a wider consequentialist standpoint. This needs clarifying.

RESPONSE: Please apologize, but it is not clear to me what is the point here.

Reviewer: This is the fragment I was referring to:

'To define goodness in terms of individual persons' wellbeing does not seem to do the trick either.
Savulescu defines human enhancement as "improvement of the person's life. The improvement is some change in state of the person—biological or psychological—which is good. Which changes are good depends on the value we are seeking to promote or maximize. In the context of human enhancement, the value in question is the goodness of a person's life, that is, his/her well being."[38]

There are many reasons why it may not be sound to define enhancement in terms of increased wellbeing. First and foremost, what maximizes the wellbeing of the individual may undermine the wellbeing for groups of individuals and for society at large. Relativizing wellbeing to individuals may not make the world a better place. The argument only has traction if you subscribe to a specific philosophical position, which, despite great progress, still is far from all-encompassing.'

It is not clear why Savulescu definition does not do the trick. It seems reasonable to say that some enhancements may not be within everyone's all-things-considered interest, for example where intelligence increase in some is mainly a positional good and the allocation of enhancement in society means that it is going to increase inequality, or in a hypothetical case where only villains get cognitive enhancements. Such definition of enhancement may well be sound/reasonable even if it is correct that such enhancement would, overall, not make the world a better place. It would simply provide a response to the argument at the start of this section: 'On average, people with a high IQ have better jobs, eat healthier, are less superstitious, and are less likely to be either violent or the victims of violence.[76]' but does not say much about the definition itself. Perhaps linking to the argument at the start of the section would be good.

22-31. Nicely done. Minor comment: 22-23 this sentence should go I think; it is not a reason in itself, and reads somewhat rhetorical.

RESPONSE: Exactly which sentence is meant here.

Reviewer 'We need HE to save the world is their argument.'
Are the methods appropriate and well described?
If not, please specify what is required in your comments to the authors.

Yes

Does the work include the necessary controls?
If not, please specify which controls are required in your comments to the authors.

Unable to assess

Are the conclusions drawn adequately supported by the data shown?
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Yes

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