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OPEN PEER COMMENTARY

Human Engineering: An Ethical Obligation?

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The authors of ‘Human engineering and climate change’ (Liao et al., 2012) say that their goal is to show that ‘human engineering deserves consideration alongside other solutions in the debate about how to solve the problem of climate change.’ In this modest aspiration the paper is surely successful. Human engineering has, as far as I know, been largely omitted from discussions about global warming, and the authors demonstrate that this is a mistake. The goal of the paper is not, they say, to ‘argue that human engineering ought to be adopted’; nevertheless, the interest of the piece derives at least in part from the reader’s sense that the arguments the authors present will lay the groundwork for this stronger claim. Yet how might that go?

The proposal for human engineering as a response to climate change might be taken as a public policy recommendation. This fits well with the authors’ avowal that ‘human engineering would be a voluntary activity – possibly supported by incentives such as tax breaks or sponsored healthcare – rather than a coerced, mandatory activity.’ Read in this way, the present proposal is a useful contribution to the debate about how to combat global warming, but it faces essentially the same hurdles as other proposals: just as I might ask why I should curtail my driving when others in the world are not, so too I can reasonably wonder why I should render myself incapable of enjoying red meat when others are not. Similarly, while I might acknowledge that I can help the planet by paying to get the electricity I use from environmentally sound sources, or by having smaller children, in either case it can be argued that this very small contribution to the common good requires a perhaps unreasonably significant sacrifice on my part. Fundamentally, the problem with solving (or even mitigating) global warming is that the set people who contribute most to creating the problem is not necessarily the same as the set of those who face the most severe consequences, nor with the set of people whose actions might most effectively address it. That is equally true for the sorts of measure the authors describe, as for more conventional steps.

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However, it might be that the authors intend to make us aware not only of a policy option but also of a moral obligation. The question of how to address global warming is moral and not just practical or political, because the question of what I ought to do about global warming is not exhausted by determining what is in my interest. If I have an obligation to stop or mitigate global warming, then I have an obligation to use reasonable available means to that end. Accordingly, I will consider whether ‘Human engineering and climate change’ can offer a basis for a moral obligation, however weak, to engage in human engineering.

The authors offer four concrete examples of voluntary human engineering that can help to reduce global warming: pharmacologically-induced aversion to meat; making humans smaller; ‘cognitive enhancement’ through better education for women; and pharmacological enhancement of altruistic impulses. Of these, I will concentrate on just one, the possibility of breeding smaller humans. From an ethical standpoint, the other three ideas share one problem in common, which is that the connection between the proposed measure and the reduction of global warming is so tenuous as to weaken the ethical argument for it. Consider, for example, the proposal to improve education for women. Taken on its own, this is hard to find fault with. The only problem is that the connection to global warming is quite indirect: better-educated women lead to lower birth rates, which in turn will lead to lower output of substances that cause warming. The authors do not offer specific estimates of the reduction in consumption that might result from improved education for women, let alone of the reduction, say, in greenhouse gases we could expect. Thus, from an ethical standpoint, there are much stronger reasons to support improving women’s education, especially since gains in education, in addition to reducing birthrates, might also increase economic activity, which would counteract the mitigating effect of the measure. The proposal to makes ourselves more altruistic and empathetic – for example, by increasing our levels of the hormone oxytocin – is likewise ethically unobjectionable, though again the connection between the proposed measure and the outcome of reduced global warming is tenuous. Finally, the idea for reducing our consumption of meat by taking drugs that cause us to lose the desire for meat at least has the advantage, relative to the aforementioned measures, that the problem it addresses most directly is indeed quite significant. The authors show persuasively that consumption of meat is a major contributor to global warming. But they do not show that this could lower meat consumption significantly. After all, the only people who will choose to take such drugs will be people who already believe that they ought not to eat meat. The drug adds only a sort of physical guarantee of their own, already existing resolve, so that the drug really amounts to a sort of Ulysses contract. The difficulty with all these proposals as potential ethical obligations is that the ethical force of the obligation is conditional on the measure having some impact on the temperature of the planet. The weaker the causal connection, the weaker the resulting moral obligation.

So let us focus on the remaining proposal, which is that we find ways to have smaller children [hereafter ‘miniaturization’]. Of the four proposals considered in the article, this one seems best to merit the title of ‘human engineering.’ It is possible, the article’s authors tell us, to have smaller children, either by selecting embryos for implantation, modifying children through the use of growth-inhibiting hormones; or even by reducing birth weight. I will draw attention to three issues here. First, this
idea suffers from the same problem as the other proposals, namely that the authors do not offer an estimate of the impact of such measures on climate change. In the absence of information on this point, we really have no evidence that the possibilities they discuss need to be taken seriously. I will return to this point below.

Second, unlike the other proposals, this one involves actions performed on others in ways that raise serious questions of autonomy. To render myself incapable of eating meat does not violate my own autonomy; educating women involves acting on others but in ways that are compatible with their autonomy, in so far as it is something we can say one could reasonably assent to, even if one did not actually do so. But choosing to have a smaller child than would otherwise have been the case is much more fraught. In an interview on Atlantic.com, lead author Matthew Liao rejects this worry about embryo selection, because ‘the embryo selected can’t complain that she could have been otherwise – if the parents had selected a different embryo, she wouldn’t have existed at all’. However, first, this hardly allays the interviewer’s concern, because it really shows only that selecting an embryo for environmental reasons is no more, but also no less, ethically difficult than selecting embryos for other good reasons – but that is ethically very difficult indeed. Second, this argument applies only to the selection of embryos, not their modification, as for example through the injection of hormones. A parent who chooses this course is choosing to give someone else all the disadvantages that come from being smaller than other people, and it is easy to see that the potential benefits to the Earth’s climate could be outweighed by the costs.

Finally, there is a special problem pertaining to the ever-expanding scope of biological science. Let us assume that reducing the size of human beings would, by reducing, for example, our intake of food, significantly lessen the pressure on global warming. If we have a moral obligation to mitigate global warming, then, other things being equal, we would also have an obligation to use available means to that end, and the authors maintain that miniaturization is one such means. This is an application of a widely (though not universally) held principle, that ‘ought implies can,’ that is, I can be morally obliged only to actions that I am able to perform. If I cannot swim, for example, I cannot be obliged to rescue a drowning man, though of course I can still be obliged to call for help. All these measures involve some level of risk and uncertainty, the last most particularly. All, however, are possible, so that, given an antecedent obligation to reduce global warming, I also have a prima facie obligation to reduce my next child’s birth rate. I say ‘prima facie’ because of course the final assessment of my obligation depends on a relative weighing of a number of factors, such as the likely benefit to the global environment; the known risks involved of the measure in question; and the reliability of the science underwriting the measure.

The main point is that if an action is possible, and it is possible that that action might mitigate global warming, then it is also possible that there is a moral obligation to perform the action. But where human engineering is concerned, the realm of the possible is constantly expanding. For example, in the Atlantic article, Liao mentions the possibility of ‘engineering’ cat’s eyes for humans. This is unsafe, and, he says, simply not possible right now. But what if it were possible? One issue is the one I’ve already raised, which is that if we do not know how much might be gained by taking such a step, we cannot be in a position to evaluate the
putative obligation. Another issue, however, is the question of whether there might be any limits on what we can ethically do. The authors reject the objection that human engineering is an affront to human nature, and in general I am sympathetic to their position on this. Ultimately, though, our ethical thought must take account of the potentially infinite extent of the possibility of scientific progress. Engineering cat’s eyes for humans might be compatible with a future for humanity that we can rationally endorse, but what about other, more radical innovations? There is no aspect of the human being that cannot conceivably be changed through some future scientific advance, and thus no possible human future that can be foreclosed \textit{a priori}. Any discussion of the topic has to start with some attention to the question of what sort of future is compatible with our continued humanity.

\textbf{References}
