Special Section: Enhancement and Goodness

Moral Bioenhancement and Free Will

Continuing the Debate

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Abstract: This article continues and expands differences I have with Ingmar Persson and Julian Savulescu concerning issues of moral bioenhancement and free will. They have criticized my conception of voluntary moral bioenhancement, claiming that it ignores the extent to which freedom is a matter of degree. Here, I argue that freedom as a political concept (or as one that is analogous to a political concept) is indeed scalar in nature, but that freedom of the will is to be understood as a threshold concept and therefore not as subject to degree. Consequently, I contend, by asserting that freedom is a matter of degree, that Persson and Savulescu have not undermined my arguments favoring voluntary moral enhancement. In addition, I add three further arguments against compulsory moral bioenhancement.

Keywords: enhancement; voluntary moral bioenhancement; compulsory moral bioenhancement; free will; Ingmar Persson; Julian Savulescu

Introductory Remarks and Structure of Argument

Ingmar Persson and Julian Savulescu used to defend the position that moral bioenhancement ought to be made compulsory by the state.[1] In their most recent writings, however, they do not take a decisive stance on that issue. I have emphatically defended the position that moral bioenhancement ought to remain voluntary.[2,3,4]

I strongly agree with Persson and Savulescu that humanity is in dire need of moral enhancement, including moral bioenhancement. One of the reasons is that it might lower the likelihood of humanity's self-destruction, or a milder form of "ultimate harm."[5] It is debatable how helpful it would be, but it is a strategy that has at least some potential. How much potential still remains to be determined.

I have also argued that moral bioenhancement is morally uncontroversial, as long as it is voluntary and as long as the means chosen are safe and effective. The argument that we damage our free will by using medication to morally enhance ourselves is not convincing, as under such proposals we are still the ones who decide whether to take such medication or not.[6] The point of departure between Persson and Savulescu and me concerned the issue of the voluntariness of moral bioenhancement.[7] I argued that by making moral bioenhancement obligatory we would deprive ourselves of our freedom and hence, to some degree, of an important part of our human existence.[8]

I have discussed a number of the issues that are taken up in the article with John Harris, Ingmar Persson, Julian Savulescu, James Hughes, Harris Wiseman, Nick Agar, Rob Sparrow, Thomasine Kushner, and Mary Rorty. I thank all of them for the valuable comments they have made.The article is being published in the framework of the activities of project III41004 of the Ministry of Education, Science, and Technological Development of the Republic of Serbia.

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Persson and Savulescu, as well as Michael Selgelid, have criticized my concept of voluntary moral bioenhancement, arguing that "our power to act of our own *free* will is a matter of degree,"[9] implying that my concept is alien to "scalar bioethics."[10] Matching up "our power to act of our own *free* will" with freedom, Persson and Savulescu suggested that they understood freedom in a deterministic sense, whereas my view of freedom was indeterministic.[11] The problem with an indeterministic understanding of freedom is that a corresponding conception of free will implies that this will is not susceptible to moral bioenhancement: "if our will is indeterministically free by nature, we cannot make it determined that we will behave morally, which fully effective moral bioenhancement requires."[12] Hence, no moral bioenhancement, be it compulsory or voluntary, can affect a free will that is understood in an indeterministic sense.

I agree with the idea that our power to act (of our own *free* will) is a matter of degree, as freedom is a matter of degree; however, I will take issue in this article with the idea that what we understand as "free will" or "freedom of the will" itself can be a matter of degree.[13] On the contrary, I argue that it is a threshold concept. And it is precisely the notion of free will on which my conception of voluntary moral bioenhancement is built.

In what follows, I will first invoke several arguments to show that freedom of the will is not to be understood as a matter of degree. (1) As soon as an external mechanism deprives us of our free will "to a certain extent," limitations are being imposed on our freedom to think what we will, and hence we cannot consider ourselves as having a free will at all. (2) As soon an external mechanism deprives us of our free will "to a certain extent," we will be divested of the very foundation of moral behavior, thus becoming only partially responsible for what we decide to do. (3) Even if free will as a threshold concept is an illusion, it is still an illusion that deserves appreciation, as freedom of the will is a central building block of our human identity. Moreover, various findings show that belief in a free will and morally responsible behavior are related to each other. These three arguments boost my contention that compulsory moral bioenhancement does not affect our freedom "to some degree," but that it profoundly undermines what we experience as our free will, which is why voluntary moral bioenhancement is to be preferred.

Second, I will discuss three additional reasons why we ought to favor voluntary moral enhancement in preference to compulsory moral bioenhancement, reasons in addition to those I have elsewhere proposed.[14] (1) Achieving the end of moral enhancement by coercion would radicalize the relationship between moral ends and means to such an extent that it might render the very idea of moral enhancement absurd. (2) Invoking an external mechanism in charge of compulsory moral bioenhancement opens up the question of who or what should be authorized to establish and run such a mechanism. (3) Compulsory moral enhancement might introduce a form of political repression.

The article's second section offers an outline of the three arguments against the understanding of free will as a scalar concept, whereas the third section contains the three additional considerations against the notion of compulsory moral bioenhancement. The rationale is that a refutation of the claim that free will is to be understood as a scalar concept (as "a matter of degree") boosts my preference for voluntary moral enhancement vis-a-vis its critics, whereas the addition of three new arguments against compulsory moral bioenhancement is intended to strengthen my position further.

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Arguments Why Freedom of the Will Should Not Be Understood as a Matter of Degree

Persson and Savulescu make the case that some limitations on our freedom to act are imposed by our natural capacities, whereas others serve to protect us against various calamities, such as disease. As an example of the first set of limitations, they stipulate our inability to lift a skyscraper with our bare hands, whereas our feeling of revulsion toward the idea of putting excrement in our mouths is an example they offer for the second type of restrictions on our freedom to act.[15] Furthermore, most of us do not dispute that some limitations on our freedom ought to be imposed, and that some things ought to be mandatory. For example, the dominant public opinion in the United States or the European Union is that citizens ought to pay taxes. Why then, the argument goes, should we object to making moral bioenhancement compulsory?

Limitations on Our Free Will Are Limitations on Our Freedom to Think

Freedom as a political concept is a matter of degree. We can have more or less free elections, more or less free media. In that sense, our power to act freely is restricted. The caveat, however, is that the skyscraper and excrement examples are analogous to this type of freedom, but disanalogous to freedom of the will. Another example of freedom being restricted but with a free will remaining intact is that of a clerk in a bank who decides to hand over the bank`s money to a robber at gunpoint. He does that because his freedom of action is restricted (he can be killed if he resists the robber), but he does not give up the money of his own free will. His free will has *not* been restricted. The example of the clerk`s restricted freedom is analogous to political freedom in that both are a matter of degree.

On the other hand, freedom of the will can hardly be imagined as being a matter of degree, because the very moment that we levy external limitations on our free will, even if those limitations are minor, it ceases to be free. It will be restricted by an externally imposed mechanism that adjudicates what we are allowed to will, not merely what we are allowed to do. Such a mechanism could work only if it intervened in our thoughts as soon as they began to develop into a willingness to do something that was considered to be morally inappropriate (as has been argued by Savulescu and Persson themselves[16]). In other words, by imposing limitations on what we are allowed to will, such a mechanism intervenes in what we are free to think. Hence, it clearly imposes a restriction on our freedom of thought.

Restrictions on our other freedoms, including our freedom of expression, do not go that far. The law can restrain us from doing or saying certain things, but not from thinking them. Restrictions on our free will, on the other hand, are restrictions on our free thought. As soon as our freedom to think is restricted, even slightly, we cannot consider ourselves as being deprived of our freedom "to a degree." In that case, we can only call ourselves unfree. The very moment that an external mechanism arbitrates what we are free to think, even if that mechanism is very tolerant, we cease to be beings with a free will.

It is impossible to will something that we cannot comprehend. We are cognitively impaired to will it, as we are unable to think of it. In that sense, it might

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appear right to claim that our freedom of the will is limited, but it is not our will that limits here. It is cognition that imposes restrictions. In other words, there are clearly degrees of cognition, but that does not mean that there are degrees of freedom of the will. There is an important disanalogy between externally imposed limitations on our free will and limitations that nature imposes on us. The example of not being able to lift a skyscraper with our bare hands, although appropriate in discussions about cognitive or other limitations that nature imposes on us and analogous to restrictions on our political freedoms imposed by the law, is disanalogous to the issue of free will. We cannot lift a skyscraper with our bare hands, but we *can* lift a small souvenir representing the Empire State Building, as it is many thousands of times lighter than a real skyscraper. In that case, the issue is one of degree.

Limitations on Our Free Will Deprive Us of Our Moral Responsibility

A free will is a prerequisite for consciously behaving morally. It would be wrong to say that we have praiseworthy moral dispositions if we act morally because someone or something else, for example, the state, has imposed moral behavior on us. To make it compulsory to undergo moral bioenhancement would rob us of a central prerogative of our humanity: to freely decide whether we will act morally or not, and whether we will undergo moral enhancement by biotechnological interventions.[17]

That is not similar to a legal or moral obligation to pay taxes, or a feeling of disgust that protects us from freely doing things that might be hazardous to our health or that are widely considered disgusting (the excrement example). We can impose such restrictions on our actions on ourselves to a certain extent. Someone can blackmail us to do something, but we do not have to accept being blackmailed. We can refuse. It is also possible to imagine people who feel a perverse satisfaction in doing certain things that are considered repulsive. We are free not to pay taxes and suffer the consequences of the refusal; we are free to kill someone or commit suicide. Laws impose *some* boundaries on our freedom, and political freedoms can also be restricted to a certain extent. None of that, however, necessarily leads to us being unfree in the sense that we cannot decide not to respect those restrictions. Our free *will* remains intact.

However, as soon as we are deprived of our free will "to some degree," we have been robbed of the very basis of our moral behavior. People who are not fully free to will because an external mechanism decides, to any extent, about what they will, do not lack some moral responsibility. They have no moral responsibility. They have not passed the threshold for being a person who is morally responsible, because their moral judgment is dependent on an external authority. Young children might be in need of moral tutors, as they do not have the moral responsibility that most adults have developed. It seems inconceivable, however, to ask adults to take a step back in their moral development and accept the assumption that they are in need of moral tutors because they lack moral responsibility.

The argument that in some cases, such as kleptomaniacs' irresistible urge to steal, an external mechanism that corrects their behavior might expand rather than limit their freedom and moral responsibility (as they will now have the option not to steal), is misguided, as these cases are exceptional instances.

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It is for the general population, not for such exceptions, that I have consistently argued against compulsory moral enhancement.To make this clear, I have even proffered the example of an incarcerated child rapist who might be a candidate for compulsory moral enhancement as he has forfeited his freedom already.[18]

Freedom of the Will Is an Essential Component of Our Human Identity and There is Evidence That Belief in a Free Will and Morally Responsible Behavior Are Related to Each Other

I have been arguing that if we limit externally, even somewhat, what we perceive to be our free will, it ceases to be free. But suppose that we have only an illusion of a free will. The Libet experiment, as well as later experiments with similar findings, suggests that our decisions might take place before we become aware of them.[19,20] More recent findings presented by Lau and colleagues suggest that the perception of intention occurs after executive motor movements.[21] Wegner reasons along similar lines when discussing how auditory hallucinations produced by schizophrenia seem to suggest a divergence of will and behavior.[22] Kühnand Brass argue that we might even be unable to veto or halt a decision we have made unconsciously, as this veto might also have taken place on an unconscious or subconscious level.[23] It should be noted, however, that those are internal limitations to our free will. Furthermore, they are limitations that we are not aware of in our direct experience. Compulsory moral bioenhancement, on the other hand, involves an external mechanism that is designed to affect our will, a mechanism that we are conscious of.

The implication is that compulsory moral bioenhancement, an enterprise that affects what we perceive as our free will, runs contrary to our notion of who we are. In that sense, it already inflicts ultimate harm on our identity as human beings. This does not mean that it is impossible to redefine this identity. However, if we do so by denying the reality of our experience of free will, the redefinition of our human identity, even if possible, would be difficult and traumatic.

There is evidence suggesting that the belief that we have in a free will is a significant motivation for us to act morally. Various empirical findings substantiate this. Baumeister and colleagues point to findings that a disbelief in free will decreases helpfulness and increases aggression.[24] Elsewhere, Baumeister et al. argue that trust in free will has behavioral consequences, including increases in socially and culturally desirable acts.[25] In one publication, Rigoni et al. show that the readiness potential for acting is lowered in individuals induced to be skeptical about a free will.[26] In another article Rigoni and colleagues demonstrate that undermining free will can degrade self-control and lead to other antisocial tendencies.[27] Vohs and Schooler provide evidence that mistrust in free will increases the tendency to cheat.[28] All these findings further strengthen the argument that even the illusion that our will is free should not be easily abandoned. If we abandon it, we might be less prone to act morally. If we believe that freedom of the will is a matter of degree, that we do not have what we have always experienced as a free will, we will be less likely to even try to act morally, thereby achieving exactly the opposite of our goal of moral enhancement.[29]

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Additional Reasons Against Compulsory Moral Bioenhancement

I have argued that compulsory moral bioenhancement would result in our loss of freedom to decide what to will, thus converting us into beings with a lower moral status than we used to have, making us less human. I have also contended that humanity does not have to survive at any cost.[30] There is nothing unethical in not wishing to survive at any cost. The ethics of survival have a basis in biological morality. It is an ethic that is imbued with a conception of the good that is founded on the survival of the species. Voluntary moral bioenhancement might remain an option, provided that we have a free will. If we do not have free will, compulsory moral bioenhancement is acceptable; however, no moral bioenhancement at all would be equally acceptable, as morality itself becomes meaningless if we do not have free will.[31] It is true that in that case species survival would continue to be a relevant consideration, but to call it a program of moral bioenhancement would be a misnomer. It would solely be a program of survival at all costs, or of ultimate harm prevention.

I have argued too that compulsory moral bioenhancement might already cause a certain form of ultimate harm, as it would deprive us of our free will, an essential element of our human existence as we currently understand it. It might be added that if such form of ultimate harm changes our species beyond recognition, compulsory moral bioenhancement itself obliterates humans and is, therefore, not even consonant with biological morality as an ethics of survival of the species. Supplementing these earlier arguments,[32] I now offer three additional critiques of compulsory moral bioenhancement.

Radicalization of the Relationship Between Means and Ends

If we opt to make moral bioenhancement compulsory, we accept not only that it is possible to have an authority that decides about which moral ends are praiseworthy and which means are most effective to attain them, but also that it can impose its decisions by coercion. That is a very audacious idea, as it might result in the reduction of the moral realm to the realm of ideology. We have witnessed throughout history various examples of ideologies that claimed to know which objectives were morally right and whose proponents used coercive means to enforce them. Achieving the end of moral enhancement by coercion would radicalize the relationship between moral ends and means to an extent that might render the very idea of moral enhancement absurd. Imagine that the relevant authorities in a state do know everything about what is morally right. Let it also be assumed that they have a correct perception of the benefit of making others believe the same. Then, they realize that it is difficult to persuade some of their citizens of the rightness of their beliefs. Subsequently, they decide to coerce their citizens into subjecting themselves to moral bioenhancement. To take one of the most innocent examples: oxytocin might become a state-mandated ingredient of our food and/or beverages. But what if certain people do not wish to consume an ingredient that impacts their moral dispositions? It appears implausible to force a normal, healthy person to consume such an ingredient without undermining the moral appropriateness of a program of compulsory moral enhancement.

All in all, the use of coercive means that are directed toward moral enhancement runs contrary to the right of humans to freely make decisions based on their

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moral dispositions. Should it be accepted, such an endeavor might hopelessly compromise the very idea of moral enhancement.

Authorizingan External Mechanism to Impose Restrictions on Our Free Will Oron Our Motivations: The "God Machine," The "God Machine Lite," Mandating Medication to All and the Realm of Politics

Invoking an external mechanism that adjudicates on what we are free to will opens up the question of who should be authorized to establish and run such a mechanism. Should it be Savulescu and Persson's "god machine"?[33] This device disables us from performing certain immoral acts as soon as we think of performing them, making us unable to perform them. Hence, it deprives us of our free will. Even if our free will is an illusion, it deprives us of even this illusion.[34]

Consider the following possibility: our freedom of the will stays intact, but our motivation to do certain things is being externally manipulated. This would be a refined version of the "god machine." Such a device, which I will call the "god machine lite," does not disable us, but only *demotivates* us to perform certain immoral acts. As this would preserve our freedom to act differently from what the "god machine lite" suggests, our free will would be left intact. But who would decide which acts we should be demotivated to perform? It could be the state, in the best case legitimized by a democratically elected government as moral arbiter. A similar scenario already occurs when restrictions are imposed on the behavior of citizens and penalties are enforced if these restrictions are not being observed. In the case of both the "god machine (lite)" and compulsory medication for moral enhancement, the restrictions would be imposed by externally administered biotechnological interventions.

However, both the program of the "god machine lite" and that of compulsory medication for moral enhancement face three serious problems that are associated with the issue of how to authorize an external authority that would be in charge of these programs.

First, the dispositions to which supporters of moral bioenhancement habitually refer as to the ones that ought to be encouraged—empathy, altruism and interpersonal trust at the expense of aggression—do not always imply heightened morality. Take the controversial role empathy plays in the trolley problem, or the judge who has a problem with sentencing a serial murderer because her empathy has been heightened by administered oxytocin. Instead of being driven by empathy for the murderer she is directly confronting, she needs to make sure that justice is being served. And it is not only judges, but all of us, who have to strike a balance between empathy and the quest for justice where the two collide. Striking this balance in an appropriate way is an essential ingredient of morality. It remains unclear how to put an external authority in charge of mandating and overseeing this activity.

Second, it is questionable whether an external mechanism that impacts the motivations of all would make specific individuals more moral, as not all of them are inclined to the same moral transgressions. Moreover, what counts as a transgression is context dependent: its weight depends on the individual who makes it and the time that person makes it, as well as on those who suffer its consequences. All this becomes apparent the very moment we think of instituting such a mechanism.

Third, even if we solved these difficulties and established a state authority that successfully decided which motivations to induce or reduce among its citizens,

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we would be accepting that it is appropriate for morality to be determined by political decisions.[35] Hence, we would consent to morality being subjugated to the political realm. In the case of the "god machine lite" it would be politics deciding what we ought to be motivated to will. In the case of the (original) "god machine," politics would have an even greater role: it would decide about what we are allowed to will.

All in all, a program of compulsory moral bioenhancement appears to face insurmountable difficulties when dealing with the issue of an external authority that is in charge of imposing restrictions on our free will or influencing our motivations. This applies to Savulescu and Persson's "god machine" that disables us to do certain things, to the "god machine lite" that only demotivates us to do these things, and to compulsory medication for moral bioenhancement.[36]

Enhancing God and Political Repression

A program of compulsory moral bioenhancement might lead to political repression. I will offer, in brief, two reasons why this could be the case. As previously noted, Persson and Savulescu, although not advocating such a program in their recent writings, do not take a stance against it either. Consequently, their position might be in danger of indirectly supporting political repression for the following reasons:

1) The "god" mentioned in Savulescu and Persson's "god machine" is not the God of Judeo-Christian and Islamic religious denominations. In all of them, God preserves our freedom, including our "freedom to fall." Savulescu and Persson's "god machine," on the other hand, already intervenes when we form a morally unacceptable intention and wish to act upon it. Hence, its aim is to enhance God. Policing our thoughts, such a "god" is more of a "police machine" than a "god machine." Even if this machine were controlled by a democratically elected government, its arbitration would have to be repressive, as it would change (e.g., delete) our thoughts whenever we decided to act in a way that it considered morally unacceptable.[37]
2) In *Unfit for the Future*, Persson and Savulescu adopt a critical attitude toward liberalism, leaving open the possibility of a state-mandated moral bioenhancement aimed at helping humanity avoid ultimate harm,[38] but even if their strategy would be an effective means of avoiding ultimate harm to humanity, abandoning liberalism and accepting a form of enlightened authoritarianism would be a step back in the historical development of humankind. An authoritarian state, even if its ideology is an enlightened one, uses political repression to eliminate those who disagree with it. Although it is possible to reasonably argue in favor of political repression if the repressive authority is a morally enlightened one, let it be noted as a matter of fact that compulsory moral bioenhancement *is* repressive and that political repression is a stage in our historical development that appears to have been left behind in most of the developed world.

Conclusion

I gave three arguments in favor of the position that, unlike political freedoms (and those that are analogous to them), which are scalar in nature, freedom of the will

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is a threshold concept, or at least should preferably be treated as one. If my arguments are correct, Persson and Savulescu's criticism that my notion of voluntary moral bioenhancement is not respectful of the fact that freedom is a scalar concept ("a matter of degree"), does not really affect freedom of the will itself. Hence, compulsory moral enhancement deprives humans not of a degree of their free will, but of their (experience of) free will in general. As a free will is a key component of our humanity, compulsory moral bioenhancement lowers our moral status. On top of that contention, I added three additional arguments against compulsory moral bioenhancement

My arguments against compulsory moral bioenhancement do not imply, however, that I am unaware of the serious difficulties that the alternative, voluntary moral bioenhancement, entails. The most damaging one might be that it appears unlikely that the number of people who will embark on it would be sufficient to decisively lower the likelihood of ultimate harm. Moreover, those who are most in need of it might precisely be the ones who are most averse to subjecting themselves to it. Nonetheless, as the alternative would be humans being deprived of an essential element of their humanness, that is, of their free will, voluntary moral bioenhancement appears to be the more plausible option.

Similarly, it might be argued that the conception of voluntary moral enhancement overlooks the importance of ultimate harm prevention; that is, of safety. Safety is a concern that figures prominently in Persson and Savulescu's position, whereas freedom might well be regarded as the most important value from my standpoint.[39] However, that is true only to a certain extent. As I argue that divesting humans of their free will dispossesses them of an essential component of their humanity, possibly inflicting in that way ultimate harm, my call to respect our free will by refraining from compulsory moral bioenhancement is also aimed at safeguarding our human existence. If human safety is understood in such a broad sense, it certainly can be regarded as a significant concern in the concept of voluntary moral bioenhancement as well.

Notes

1. Persson I, Savulescu J. The perils of cognitive enhancement and the urgent imperative to enhance the moral character of humanity. *Journal of Applied Philosophy* 2008;25:162–77, at 74.
2. Rakić V. Voluntary moral enhancement and the survival-at-any-cost bias. *Journal of Medical Ethics* 2014;40:246–50.
3. Rakić V. We can make room for SSRIs. *American Journal of Bioethics: Neuroscience* 2014;5:34–5.
4. Rakić V. Voluntary moral bioenhancement is a solution to Sparrow's concerns. *American Journal of Bioethics* 2014;14:37–8.
5. I accept the definition of "ultimate harm" as an event or series of events that make worthwhile life on this planet forever impossible (See note 1, Persson, Savulescu 2008, at 74.).
6. See note 3, Rakić 2014, at 35.
7. See note 4, Rakić 2014.
8. See note 2, Rakić 2014.
9. Persson I, Savulescu J. Should moral bioenhancement be compulsory? Reply to VojinRakić. *Journal of Medical Ethics* 2014;40:251–2.
10. Selgelid M. Freedom and moral enhancement. *Journal of Medical Ethics* 2014;40:215–6, at 16.
11. See note 9, Persson, Savulescu 2014. Freedom in an indeterministic or "contra-causal sense" signifies that our choices are not fully determined by our biology and environmental circumstances.
12. See note 9, Persson, Savulescu 2014.
13. "Free will" and "freedom of the will" are used interchangeably throughout this article.
14. See note 2, Rakić 2014.
15. See note 9, Persson, Savulescu, 2014.

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16. Savulescu J, Persson I. Moral enhancement, freedom, and the god machine. *The Monist* 2012; 95:399–421.
17. See note 2, Rakić 2014, at 248–9.
18. See note 2, Rakić 2014, at 248–9.
19. Libet B, Gleason CA, Wright EW, Pearl DK. Time of conscious intention to act in relation to onset of cerebral activity (readiness-potential). The unconscious initiation of a freely voluntary act. *Brain* 1983;106:623–42.
20. Libet B. Unconscious cerebral initiative and the role of conscious will in voluntary action. Behavioral and brain sciences 1986;8:529–66.
21. Lau HC, Rogers RD, Passingham RE. Manipulating the experienced onset of intention after action execution. *Journal of Cognitive Neuroscience* 2007;19:81–90.
22. Wegner DM. The mind's best trick: How we experience conscious will. *Trends in Cognitive Sciences* 2003;7:65–69.
23. Kühn S, Brass M. Retrospective Construction of the judgement of free choice. *Consciousness and Cognition* 2009;18:12–21.
24. Baumeister RF, Masicampo EJ, DeWall CN. Prosocial benefits of feeling free: disbelief in free will increases aggression and reduces helpfulness. *Personality and Social Psychology Bulletin* 2009;35:260–8.
25. Baumeister RF, Crescioni AW, Alquist JL. Free will as advanced action control for human social life and culture. *Neuroethics* 2011;4:1–11.
26. Rigoni D, Kühn S, Sartori G, Brass M. Inducing disbelief in free will alters brain correlates of preconscious motor preparation: The brain minds whether we believe in free will or not. *Psychological Science* 2012;22:613–8.
27. Rigoni D, Kühn S, Gaudino G, Sartori G, Brass M. Reducing self-control by weakening belief in free will. *Consciousness and Cognition* 2012;21:1482–90.
28. Vohs KD, Schooler JW. The value of believing in free will: encouraging a belief in determinism increases cheating. *Psychological Science* 2008;19:49–54.
29. The mentioned findings have also been critically assessed by some authors. A discussion of these critiques is beyond this article's scope.
30. See note 2, Rakić 2014.
31. See note 2, Rakić 2014, at 249–250.
32. See note 2, Rakić 2014.
33. See note 16, Savulescu, Persson 2012, at 412–4.
34. Again, this does not limit our free will or our illusion of it "to some degree." As shown in the second section of this article, the very fact that compulsory moral bioenhancement is externally manipulated, even if this manipulation is limited to a small number of acts we are disabled from performing, already means that it deprives us of what we experience as our free will.
35. These political decisions would be mediated through laws.
36. The "god machine" that Savulescu and Persson have in mind leaves open the possibility of individuals voluntarily connecting to it (see note 16, Savulescu, Persson 2012, at 414). That is quite different, however, from the voluntary moral bioenhancement that I am supporting. Once people are connected to the "god machine" they cannot opt out anymore. They are permanently subjugated to its will. Only the initial act is voluntary. The rest is compulsion. If some people were misled to believe that being connected to the "god machine" would benefit them (we know of plenty of examples from our history in which people were misled to believe in various totalitarian ideologies), their subjugation to the will of the "god machine," because it would be irrevocable, would have permanent detrimental consequences. Hence, it is clearly not consonant with voluntary moral bioenhancement of the type I discuss.
37. In an article criticizing Savulescu and Persson's conception of the "god machine," Rob Sparrow invokes Philip Pettit's comparison of the subjection of our will to the "god machine" with the subjection of the slave to a powerful master. Even if this master is benevolent, subjection remains what it is (Sparrow R. A Reply to Savulescu and Persson on 'Moral Enhancement.' *Journal of Applied Philosophy* 2013;31:23–32, at 27). Sparrow also contends that democratic institutions and an educated citizenry are the best safeguard against moral bioenhancement programs being hijacked by authoritarian governments (Sparrow 2013, at 28).
38. Persson I, Savulescu J. *Unfit for the Future: The Need for Moral Enhancement*. Oxford: Oxford University Press; 2012, at 42–6.
39. See note 2, Rakić 2014.

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