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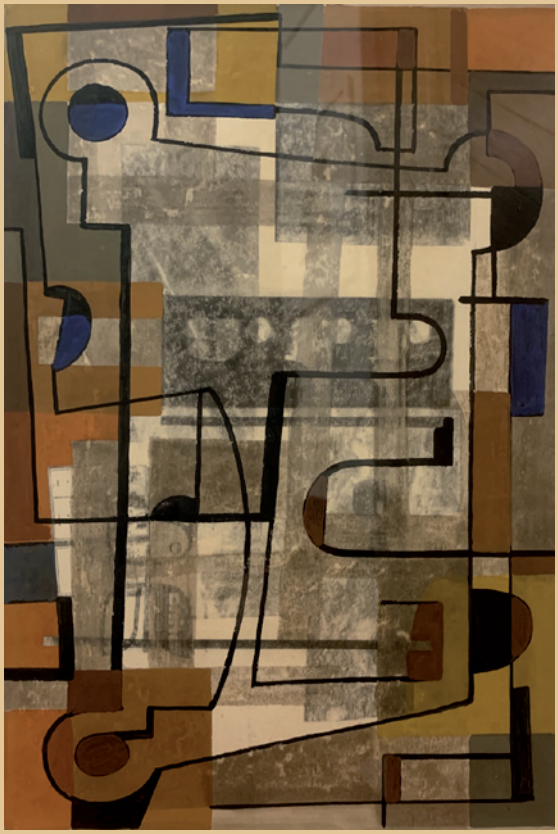
Le tecnologie 'morali' emergenti e le sfide etico-giuridiche delle nuove soggettività

Emerging 'moral' technologies and the ethical-legal challenges of new subjectivities

a cura di/edited by

Silvia Salardi - Michele Saporiti



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In copertina / on the cover:

Alfonso Salardi (1914-1981), Tempera, 1954.

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Oggi le minacce alla vita, alla libertà
e alla sicurezza possono venire dal potere sempre
più grande che le conquiste della scienza e delle applicazioni
che ne derivano dànno a chi è in condizione di usarne

Norberto Bobbio, *L'età dei diritti*

INDICE/INDEX

pag.

ARGUMENTATION ABOUT MORAL BIOENHANCEMENT

Marina Budić

1. *Introduction*

Each of us has a moral obligation to refrain from malice. Malice is manifested in forms such as abuse, manipulation, blackmail, robbery, murder, and others. Scientific advances offer a possible solution for some of these crimes: moral enhancement of human beings through biomedical and biotechnological means. Assuming the efficiency and security of moral enhancement, are we obliged to use biomedical and biotechnological interventions to reduce the likelihood of engaging in abuse? What is the goal of moral enhancement, and what is enhancing and to what extent?

This paper attempts to answer these questions through a consideration of the arguments in favor of and against moral bioenhancement interventions. The first part of the paper exhibits and explicates the notion and meaning of enhancement, and subsequently thoroughly analyzes one form of enhancement, namely moral bioenhancement. In the second part, the paper deals with arguments in favor of and against moral bioenhancement. The closing part of the paper is dedicated to the criticism concerning the restriction of freedom of a person who uses moral bioenhancers. The concluding remarks address the question whether objections on moral bioenhancement are conclusive and convincing or not. The issue of moral enhancement is important since moral behavior is, along with rationality, a precious and essential value that constitutes us as human beings.

2. *Enhancement*

Let us start by answering the question 'what is enhancement?'. Enhancement is a process that fixes or corrects our functioning. Biomedical technologies are routinely employed in an attempt to maintain or restore health. But many of these technologies can also be used to alter the characteristics of healthy individuals. Such interventions are termed *biomedical enhancements* by Douglas [1]. Bioenhancement implies *biomedical interventions that are used to improve human form or functioning beyond what is necessary to restore or sustain health*. Standard examples include:

– cosmetic surgery and the use of biosynthetic growth hormone to increase stature) [2];

– "blood doping" and steroid use to improve athletic endurance and strength [3];

– psychopharmaceutical interventions to improve memory, cognitive capacities, and mood, and [4];

– (almost entirely hypothetical) genetic and neurological manipulations to increase the human life span, acquire new sensory-motor abilities, and, through "moral enhancement", live together in more peaceable, generous, and just ways [5].

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[1] T. DOUGLAS, *Moral Enhancement*, in *Journal of Applied Philosophy*, 25, 3, 2008, p. 228.

[2] F.G. MILLER, H. BRODY, and K.C. CHUNG, *Cosmetic Surgery and the Internal Morality of Medicine*, in *Cambridge Quarterly of Health Care Ethics*, 9, 3, 2000, pp. 353-364; M. LITTLE, *Cosmetic Surgery, Suspect Norms, and the Ethics of Complicity*, in E. PARENS (ed.), *Enhancing Human Traits*, Washington: Georgetown University Press, 1998, pp. 162-176; G. WHITE, *Human Growth Hormone: The Dilemma of Expanded Use in Children*, in *Kennedy Institute of Ethics Journal*, 3, 4, 1993, pp. 401-409; P. CONRAD and D. POTTER, *Human Growth Hormone and the Temptations of Biomedical Enhancement*, in *Sociology of Health and Illness*, 26, 2, 2004, pp. 184-215.

[3] A. MIAH, *Genetically Modified Athletes: Biomedical Ethics, Gene Doping and Sport*, New York: Routledge, 2004; T. MURRAY, *Ethics, Genetics and the Future of Sport: Implications of Genetic Modification and Genetic Selection*, Washington: Georgetown University Press, 2009; J. TOLLENEER, S. STERCKX, and P. BONTE, *Athletic Enhancement, Human Nature and Ethics: Threats and Opportunities of Doping Technologies*, New York: Springer, 2013.

[4] A. ELLIOTT, *The Tyranny of Happiness: Ethics and Cosmetic Psychopharmacology*, in E. PARENS (ed.), *Enhancing Human Traits: Ethical and Social Implications*, Washington: Georgetown University Press, 1998, pp. 177-188; P.J. WHITEHOUSE, E. JUENGST, M. MEHLMAN, and T.H. MURRAY, *Enhancing Cognition in the Intellectually Intact*, in *The Hastings Center Report*, 27, 3, 1997, pp. 14-22; A. SANDBERG, *Cognition Enhancement: Upgrading the Brain*, in J. SAVULESCU, R. TER MEULEN, and G. KAHANE, (eds.), *Enhancing Human Capacities*, New York: Wiley-Blackwell, 2011, pp. 71-91.

[5] E. JUENGST, D. MOSELEY, *Human Enhancement*, in *The Stanford Encyclopedia of Philoso-*

It should be borne in mind that enhancement interventions affect specific human characteristics and traits rather than the person as a whole, which means that moral enhancers, for example, will not make a person who uses them completely moral, but will improve only certain characteristics that have an impact on her behavior in an ethical sense. Enhancement interventions attempt to improve specific human capacities and traits, rather than whole persons. For example, when it comes to moral enhancement, most people take it for granted, or rather too literally, and immediately object that some pill can not make us a moral person. This is true, but moral bioenhancement does not even imply this. It implies the use of a bioenhancer in order to influence a characteristic that contributes to moral behavior, specifically, for example, the development of empathy.

Sometimes it may be difficult to understand that there is, or whether there is, a moral difference between enhancing the reduced functions to a normal level and increasing normal functions to super-normal levels. However, the notion of what is normal has changed over time, along with changes in ecological and genetic factors. In addition, modern medicine and the development of science have led to changes in the understanding of the notion of the *normal*. A long time ago it used to be normal for women to die in childbirth, or for people to die from certain diseases. But today scientists have found the cure for many diseases, which are successfully treated by using drugs. The dividing line between *treatments* and *enhancements* has also become thinner. However, it remains controversial whether it is morally permissible to use biomedical technologies to enhance people.

Some argue that it would be better if people were more intelligent and physically stronger, and that there is no objection to using biomedical technologies to achieve these goals. But others hold that biomedical enhancement ought to be avoided altogether[6].

3. *Moral Bioenhancement*

Sometimes people behave in bad ways because they ignore what is good. More often, their bad behavior stems from the lack of will to act otherwise, or from having *bad motives*. The development of science enables us to

phy (Spring 2016 Edition), edited by E.N. ZALTA, https://plato.stanford.edu/archives/spr2016/entries/enhancement/; J. SAVULESCU, R. MEULEN, and G. KAHANE (eds.), *Enhancing Human Capacities*, New York: Wiley-Blackwell, 2011.

[6] T. DOUGLAS, *Moral Enhancement*, cit., p. 228.

change our motives in order to act more morally. What could motivate people to use such inventions is the increase in the number of crimes, immoral behavior, damage, and destruction. We are not talking about the risks and dangers caused by natural disasters and catastrophes, but rather about risks and dangers caused by human beings. This is mostly the result of scientific progress that allows, for instance, a person to use nuclear weapons. Mass destruction, unlike theft or the killing of one man, poses a danger to the entire human race.

Moral enhancement can be defined as an increase in the moral value of the actions or character of a moral agent. It implies the improvement of moral dispositions. Moral bioenhancers affect self-control, empathy, benevolence, and other desirable characteristics that discourage tendencies towards violence, aggression, and racism. Thomas Douglas sets out his definition of moral enhancement in the following way: «A person morally enhances herself if she alters herself in a way that may reasonably be expected to result in her having morally better future motives, taken in sum, than she would otherwise have had. He understands motives to be the psychological – mental or neural – states or processes that will, given the absence of opposing motives, cause a person to act»[7].

Unlike the most frequently mentioned varieties of enhancement, enhancements satisfying this formula for moral enhancement could not easily be criticized on the ground that their use by some would disadvantage others. Regarding intelligence enhancement, for example, it could be argued that if one person makes herself more intelligent she may disadvantage the unenhanced by out-competing them for jobs, or by discriminating against them on the basis of their lower intelligence. These arguments may be persuasive when directed against the most commonly discussed biomedical enhancements – physical ability enhancements, intelligence and memory enhancements, and natural lifespan enhancements. But they appear much less persuasive as objections to moral bioenhancement. On any plausible moral theory, a person's having morally better motives will tend to be to the advantage of others. Indeed, on some views, the fact that having some motive would tend to advantage others is what makes it a morally good motive[8].

It is not immediately clear what sorts of psychological changes would count as moral enhancements. There are at least two reasons for this lack of clarity. First, there is little agreement on which motives are morally good, and

[7] *Ibid.*, p. 229.

[8] *Ibid.*, p. 230.

to what degree. Whereas some would claim that it is best to be motivated by normative beliefs formed as a result of correct reasoning processes, others would emphasize the importance of moral emotions, such as sympathy. Others still would favor some mixture of the two. Moreover, this disagreement cannot be resolved by appealing to some view about what sorts of considerations determine the moral goodness of a motive, since here there is even less agreement. For example, some would hold that a motive is morally good to the extent that it tends to produce good consequences, while others would hold that motives are good to the extent that they are partly constitutive of certain virtues [9]. Second, both what counts as a good motive and what counts as an improvement in one's motives will be different for different people, or people performing different roles. For a judge, a certain sort of legal reasoning might be the best motive, whereas for a parent love might be more appropriate. Similarly, for a person who feels little sympathy for others, an increase in sympathy might count as a moral improvement. But for someone who is already overwhelmed by feelings of sympathy, any such increase is unlikely to count as an improvement [10].

Despite these difficulties, Douglas thinks it would be possible to identify several kinds of psychological changes that would uncontroversially qualify as moral enhancements for some people under some circumstances. The author believes there are some emotions – henceforth, the counter-moral emotions – whose attenuation would sometimes count as a moral enhancement, regardless of which plausible moral and psychological theories one accepted. One example of a counter-moral emotion might be a strong aversion to certain racial groups. Such an aversion would be an uncontroversial example of a bad motive. It might also *interfere with* what would otherwise be good motives. It might, for example, lead to a kind of subconscious bias in a person who is attempting to weigh up the claims of competing individuals as part of some reasoning process. Alternatively, it might limit the extent to which a person is able to feel sympathy for a member of the racial group in question [11].

A second example would be the impulse towards violent aggression. This impulse may occasionally count as a good motive. If I am present when one person attacks another on the street, impulsive aggression may be exactly what is required of me. But, on many occasions, impulsive aggression seems to be a morally bad motive to have – for example, when one has just been mildly pro-

[9] *Ibid.*, p. 231.

[10] *Ibid.*

[11] *Ibid.*

voked. Moreover, as with racial aversion, it could also interfere with good motives. It might, for example, cloud a person's mind in such a way that reasoning becomes difficult and the moral emotions are unlikely to be experienced. Douglas concludes that there are some emotions such that a reduction in the degree to which an agent experiences those emotions would, under some circumstances, constitute a moral enhancement [12].

The definitions of moral enhancement that we have discussed in this chapter suggest that moral enhancement implies not only the enhancement of one's cognitive ability to understand morality, but also an increased tendency to act in accordance with one's moral beliefs. Moral enhancement thus entails the narrowing of the gap between our understanding of morality (how we believe we should act) and our behavior (how we actually act). It follows that the motivation to act morally (i.e. according to how we believe we should act) is the essential disposition of morally improved people. Consequently, bridging the gap between understanding and motivation is essential for moral enhancement.

To be morally enhanced is to have those dispositions which make it more likely that you will arrive at the correct judgement of what the right thing to do is, and more likely to act on that judgement [13].

We can also raise the question whether moral enhancers should be provided only to criminals and "bad" people, or to the entire population, i.e., to all those who want to improve themselves morally. It is a very interesting and important question whether moral enhancement should be permitted, and if so, whether it should be compulsory or voluntary. A lively debate debate between Persson and Savulescu, Harris, Vojin Rakić, and several other authors has developed on this question. In this paper I focus on the issue of whether moral bioenhancement is permissible or whether it should be prohibited.

Here is one example of moral enhancement by using moral bioenhancers. The example is given by Persson and Savulescu:

«John is a professor of mathematics at the University of Oxford. Everyday, he passes a beggar sitting in the front of his college. The woman is in rags and asks for 50 p for shelter that night. John always averts his gaze and walks as far as possible away from her. He never gives her any money. John is relatively wealthy and prefers to buy expensive bottles of claret from the College cellar for himself and his friends. John takes a drug which makes him more interested in the suffering of others, more empa-

[12] *Ibid.*, p. 231.

[13] J. SAVULESCU, I. PERSSON, *Moral Enhancement, Freedom and the God Machine*, in *Monist*, 95, 3, 2012, p. 403.

thetic, more capable of vividly imagining what it would be like to be in another person's shoes. The drug is like a pair of "moral spectacles", clarifying his vision of the other. He looks at the beggar, reflects more about her suffering and so decides to give the beggar an apple. He does not give money because he believes the beggar will use it imprudently. In this case, there is the right sort of connection deliberation and judgement. John acts for reasons, as much as anyone acts for reasons. He just got to see things the right way. John's giving the apple was not unfree – it was virtuous. Imagine that John, when he took the drug, always behaved in the morally correct way. He would not be unfree. He would be the most virtuous person.» [14]

Now let us consider the characteristics necessary for moral behavior which can be influenced by certain medicines. Could we, through our knowledge of biology, strategically influence people's moral dispositions and behavior? There are reasons to believe that we could. Historically, drugs and surgical procedures, such as lobotomy, were used in an attempt to control behavior. But today, sophisticated and ever more powerful cognitive science is providing new and more effective means of influencing human choices [15].

Indeed, a number of drugs are already prescribed specifically for their choice-altering effects, which have effects relevant to moral behavior: the anti-alcohol abuse drug disulfuram, the weight loss drug orlistat, and anti-libidinal agents used to reduce sexual re-offending. Neuropsychology is beginning to provide more robust evidence for the existence of biological correlates of morally relevant traits, e.g., aggression, trust and empathy. Ramachandran and colleagues have begun to identify the neural loci of empathic responses in humans and animals [16]. This research may lead to developing pharmacological

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[14] *Ibid.*, pp. 407-408.

[15] Psychological research is affording strategies to influence choice: a range of unconscious stimuli can affect choice through priming (A. KIESEL, A. WAGENER, W. KUNDE, J. HOFFMANN, A.J. FALLGATTER, C. STOCKER, *Unconscious Manipulation of Free Choice in Humans*, in *Consciousness and Cognition*, 15, 2006, pp. 397-408). One prominently discussed technique is the 'nudge' strategy, which harnesses knowledge about 'cognitive biases' that may influence voluntary choice (R.H. THALER, C. SUNSTEIN, *Nudge: Improving Decisions about Health, Wealth, and Happiness*, New Haven: Yale University Press, 2008) These ideas are affecting health policy (A. CHARKRABORTTY, *From Obama to Cameron: Why Do So Many Politicians Want a Piece of Richard Thaler?*, in *The Guardian*, 8 July 2008.) A number of commonly employed antidepressants and antihypertensives (see S. TERBECK, G. KAHANE, S. MCTAVISH, J. SAVULESCU, P. COWEN, M. HEWSTONE, *Emotion in Moral Decision Making: Beta Adrenergic Blockade Increases Deontological Moral Judgments*, forthcoming) affect moral behaviour as a side effect (according to J. SAVULESCU, I. PERSSON, *Moral Enhancement, Freedom and the God Machine*, cit., p. 401).

[16] S. RAMACHANDRAN VILAYANUR, M. OBERMAN, *Lindsay Broken Mirrors: A Theory Of Autism*, in *Scientific American*, 295, 2006, pp. 62-9.

interventions to improve empathy, cooperation and trust [17]. Indeed, empirical research has already shown that propranolol can reduce implicit racial bias [18].

Although there are some aspects of our moral psychology that are exceedingly complex, it is possible to extract some characteristics that have a biological and genetic basis, that contribute to moral behavior, and which can be influenced by certain medicines.

Willingness to co-operate with other people is one of them. Another trait is impulse control. If one cannot withstand temptation and delay gratification, one will be less likely to sacrifice her own interests for some moral goal. Drugs which increase impulse control can thus contribute to more moral behavior. Ritalin, Adderall and other drugs improve impulse control in children with attention deficit disorder, indeed reducing violence and antisocial behavior [19].

A common, specific form of self-sacrifice is altruism, which is usually taken to be uncontroversial as a basis of morality. Altruism involves the sacrifice of one's own interests for the welfare of others (as opposed to sacrificing one's interests in order to achieve some non-welfarist moral goal). Alongside altruism, a sense of justice is a central moral disposition. Both have been shown to have a biological basis. Björn Wallace and associates have found that, in the case of identical twins (who share the same genes), there is a striking correlation in what they consider to be unfair and fair in Ultimatum games. There is no such correlation in the case of fraternal twins. This indicates that the human sense of fairness has a genetic basis [20]. According to Simon Baron-Cohen, there is also a striking correlation in respect of altruism in identical twins. If there is a genetic basis to some trait, such as a sense of justice or altruism, this opens the door to future biological manipulation of that trait. Even if controlling that trait is impossible, changing the strength or nature of a disposition, even to a small degree, can have effect on moral behavior [21].

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[17] C.K.W. De Dreu, L.L. Greer, M.J.J. Handgraaf, M.J.J. Oxytocin, S. Shalvi, G.A.Van Kleef, *Promotes Human Ethnocentrism. Proceedings of the National Academy of Sciences*, 108, 4, 2011, pp. 1262-6.

[18] J. Savulescu, I. Persson, *Moral Enhancement, Freedom and the God Machine*, cit., p. 400.

[19] S. Terbeck, G. Kahane, S. McTavish, J. Savulescu, P. Cowen, M. Hewstone, *Beta-Adrenergic Blockade Reduces Implicit Negative Racial Bias. Under review a Terbeck*, S. Terbeck; G. Kahane, S. McTavish, J. Savulescu, P. Cowen, M. Hewstone, *Emotion* in *Moral Decisionmaking: Beta Adrenergic Blockade Increases Deontological Moral Judgments. Under review* bp. 407.

[20] According to Savulescu and Persson, *Moral Enhancement, Freedom and the God Machine*, cit., p. 405.

[21] *Ibid.*

Moral enhancers would enable us to improve our capacity for empathy, solidarity, gratitude, forgiveness, and other morally desirable traits. Examples of moral enhancement include a reduction in the dislike of certain racial groups, as well as a lessening of impulsive violent aggression. Douglas refers to a number of relevant findings: oxytocin has been shown to promote trust, SSRIs to increase cooperation and reduce aggression, while methylphenidate reduces violent belligerence; furthermore, the biological basis for some personality types that give rise to immoral conduct appears to have been elucidated – antisocial personality disorder may have biological underpinnings, whereas criminality has been related to the MAO mutation on the X chromosome, especially when coupled with social deprivation [22].

One substance shown to have effects on moral behavior is the hormone and neurotransmitter oxytocin. It facilitates birth and breastfeeding in humans and other mammals, but it also appears to mediate maternal care, pair bonding, and other pro-social attitudes, like trust, sympathy and generosity [23]. Kosfeld and collaborators investigated the relationship between oxytocin and trust in a simple game of cooperation [24]. Their results have shown that participants taking oxytocin exhibited significantly more trusting behavior [25].

However, the effect of oxytocin on trusting and other pro-social behavior towards others appears to be sensitive to those others' group membership. Studies by Carsten De Dreu and associates suggest that the pro-social effects of oxytocin may be limited to in-group members [26]. Further experiments by De Dreu's group indicated that oxytocin can also reduce pro-social behavior towards out-group members where this helps one's in-group. A higher level of oxytocin amplifies the intensity of trust and reciprocity within an already fa-

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[22] According to V. RAKIĆ, *From Cognitive to Moral Enhancement: A Possible Reconciliation of Religious Outlooks and the Biotechnological Creation of a Better Human*, in *Journal for the Study of Religions and Ideologies*, 11, 31, 2012, p. 118.

[23] T.R. INSEL, F.D. RUSSELL, *How the Brain Processes Social Information: Searching for the Social Brain,* in *Annual Review of Neuroscience*, 27, 2004, pp. 697-722.

[24] M. KOSFELD, M. HEINRICHS, P.J. ZAK, U. FISCHBACHER, E. FEHR, *Oxytocin Increases Trust* in *Humans,* in *Nature*, 435, 7042, 2005, pp. 673-6.

[25] J. SAVULESCU, I. PERSSON, *Moral Enhancement, Freedom and the God Machine*, cit., p. 401.

[26] C.K.W. DE DREU, L.L. GREER, M.J.J. HANDGRAAF, S. SHALVI, G.A.VAN KLEEF, M. BAAS, V. TEN, S. FEMKE, E. VAN DIJK, S.W.W. FEITH, *Neuropeptide Oxytocin Regulates Parochial Altruism* in *Intergroup Conflicts among Humans. Science*, 328, 2010, pp. 1408-11; C.K.W. DE DREU, L.L. GREER, M.J.J. HANDGRAAF, S. SHALVI, G.A.VAN KLEEF, *Oxytocin Promotes Human Ethnocentrism. Proceedings of the National Academy of Sciences*, 108, 4, 2011, pp. 1262-6.

vored group, rather than extending their range to out-groups [27].

Another neurotransmitter implicated in moral behavior is serotonin. Selective serotonin reuptake inhibitors (SSRIs) are commonly prescribed for depression, anxiety, and obsessive-compulsive disorder. They help govern activities such as eating and sleeping, and sexual activity. SSRIs work by slowing down the reabsorption of serotonin, a neurotransmitter crucially involved in mood regulation, thereby making more of it available to stimulate receptors. But SSRIs also seem to make subjects more fairminded and willing to cooperate. So, modifications of such systems in the brain by drugs like SSRIs appear to have moral consequences [28].

4. *The relation between cognition and motivation*

Morally enhanced individuals do not only simply have enhanced cognitive abilities, as the narrowing of the cognition-motivation gap is not merely a cognitive capacity. It is a capacity that pertains to our will. Moral enhancement implies adding motivational criteria to cognitive criteria [29]. We undoubtedly have a sense of morality, a sense of right and wrong. We usually know what is wrong, and what is right, but we do not always act in accordance with that. For example, we know that it is good to give to charity, but often we do not do that. Everybody may sometimes fall prey to an immoral act that they will not be proud of in the future. And that is precisely the point when we frequently act differently than we think we ought to act. Hence, the following two issues are the most relevant where the comprehension motivation gap is concerned:

1) Most people have a notion of right and wrong, which can be upgraded by cognitive enhancement. Such enhancement can be traditional enhancement or cognitive bioenhancement.

2) Most people have a tendency not to act as they believe they ought to. They have some kind of motivational impairment (for whatever reason) against doing what they believe is right. That lack of motivation can be dealt with by moral enhancement. Such enhancement can be traditional enhancement or moral bioenhancement. Moral enhancement, if understood as an in-

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[27] *Ibid.*, p. 402.

[28] *Ibid.*

[29] V. RAKIĆ, *We Must Create Beings with Moral standing Superior to Our Own*, in *Cambridge Quarterly of Health Care Ethics*, 24, 1, 2015, p. 60.

tervention that does not just make us understand morality better, but also results in us *behaving* more morally, is an intervention with such enormous implications that it amounts to nothing less than a moral status enhancement [30]. So, moral enhancement can be understood as an intervention that not only helps us understand morality better, but also leads us to *act* more morally.

In his paper *Voluntary moral enhancement and the survival-at-any-cost bias*, Vojin Rakić considers the question of whether cognitive enhancement is sufficient in itself, so that we do not need moral enhancement if we are cognitively enhanced. He concludes that this is not the case. This is because knowing that something is right does not mean that we will automatically be motivated to act accordingly. Rakić gives convincing arguments and describes the problem in the following way: The discrepancy between what we do and what we believe is right to do might be the greatest predicament of our existence as moral beings. The essential issue is not only how to make us understand morality better, but how to morally enhance our *actions*. It is freedom, rather than cognition, that is at the heart of the matter. Hence, the key problem of morality comes down to how we use our freedom, to how we decide to act [31].

Harris is certainly right in claiming that defects in cognition drive some of our immoral behavior. Garett Jones observes that smarter groups generally display more patience and perceptiveness, traits that are key to cooperative behavior. The implication is that intelligence is one of the drivers of moral behavior. When we are more intelligent, we cooperate more and are less prone to violent conflict or to secretive actions; hence, we might be less inclined to certain types of immoral behavior. Consequently, it is possible that enhanced intelligence might help us act more morally. We can improve our intelligence through better nourishment, healthier surroundings and better schooling in the world's most impoverished countries. In other words, traditional means of cognitive enhancement might indeed be important for morality. But they do not appear to be sufficient, for two reasons:

– morality has certain biological underpinnings, which cannot be affected by traditional means of cognitive enhancement and

– traditional means of cognitive enhancement do not have the critical im-

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[30] *Ibid.*, p. 62.

[31] V. RAKIĆ, *From Cognitive to Moral Enhancement: A Possible Reconciliation of Religious Outlooks and the Biotechnological Creation of a Better Human*, in *Journal for the Study of Religions and Ideologies*, 11, 31, 2012, p. 120.

pact on us of bridging the gap between how we act, and how we think we should act [32]

Based on this, Rakić concludes that traditional types of cognitive enhancement, or any other type of cognitive enhancement for that matter, do not appear to be the solution to our immoral behavior. Moral enhancement is undeniably needed as a supplement to cognitive enhancement [33].

5. *Bioconservatives and Bioliberals*

A sizeable body of literature has been devoted recently to arguments for and against the cognitive and/or moral enhancement of human beings. Harris, Savulescu, Persson, Douglas, Crockett, Wilson, DeGrazia, Agar, Sparrow, Rakić, Wasserman, Wiseman and others have written various articles and books on the topic.

Bioconservatives have argued against bioenhancement, as they believe that it is aimed at intervening in what has been ordained by God or given to us by nature. Bioliberals, on the other hand, insist that nature is morally indifferent, from which it follows that we have a right to intervene in what nature has created. In fact, they argue that we are doing that already when we fight certain natural phenomena that inflict harm on people: e.g., medications are administered to patients who suffer from diseases (which are frequently naturally occurring phenomena), dams are built to contain floodings, defenses against lightning are set up. Some bioliberals insist on our moral *duty* to enhance everything that can be enhanced. On the other hand, there are those who are against certain forms of enhancement but are by no means bioconservatives. For instance, they are against moral bioenhancement, at least in its currently possible form, but are not necessarily against cognitive bioenhancement (e.g., John Harris and Nicholas Agar).

Persson and Savulescu assert that humanity is at risk of (self-) annihilation, or another form of what they call "ultimate harm," if it does not embark on the path of moral bioenhancement. John Harris, on the other hand, maintains that this type of enhancement can be accomplished only to the detriment of our freedom. He insists on cognitive enhancement being sufficient for moral enhancement. Rakić argues against both Harris and the collaborative efforts

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[32] V. RAKIĆ, *Voluntary moral enhancement and the survival-at-any-cost bias*, in *Journal of Medical Ethics*, 40, 4, 2014, p. 248.

[33] *Ibid.*

of Persson and Savulescu. Against Harris, he maintains that we might become cognitively enhanced, e.g., we might start to understand that racial prejudices are morally wrong, without acquiring the motivation to act upon this understanding. At the same time, Rakić argues against Persson and Savulescu's position that moral enhancement ought to be made compulsory[34].

When it comes to those advocating moral bioenhancement, we will consider their arguments in favor of these interventions. Why do they think that there is a need for these types of interventions? They suggest that it is evident that traditional means of moral enhancement, like education, are not efficient, because there are a lot of crimes and malice.

Since human well-being is essential, it is not just the treatment and prevention of disease that is relevant. Biological interventions to *increase* opportunity and happiness are morally justified as well. Even more than that, according to some authors, if it is our duty to treat and prevent disease, it is also our duty to intervene in what is given to us by nature, in order to provide an individual with the best prospects for having the best possible life[35]. Furthermore, Persson and Savulescu argue that people now have at their disposal technology so powerful that it could bring about the destruction of the whole planet if misused. Around the middle of the last century, a small number of states acquired the power to destroy the world through the detonation of nuclear weapons. In this century, more people, perhaps millions, will acquire the power to destroy life on Earth through the use of biological weapons, nanotechnology, deployment of artificial intelligence, or cyberterrorism[36].

Besides, these authors argue that it is comparatively easy to cause great harm, and much easier than to benefit to the same extent. Consider an everyday illustration: most readers of this paper probably have access to a car and live in densely populated areas. Whenever you are driving, you could easily kill a number of people by ploughing into a crowd. But, we dare say, very few of you have the opportunity every day to save an equal number of lives. Indeed, most of you have probably never had that opportunity, since this kind of situation happens only when, first, a large number of lives is threatened,

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[34] According to: V. RAKIĆ, Ć.M. MILAN, *Confronting Existential Risks With Voluntary Moral Bioenhancement*, in *Journal of Evolution and Technology*, 26, 2, 2016, p. 49.

[35] J. SAVULESCU, *Genetic Interventions and the Ethics of Enhancement of Human*, in B. STEINBOCK (ed), *The Oxford Handbook of Bioethics*, Oxford, 2007, pp. 516-535, see also V. RAKIĆ, *From Cognitive to Moral Enhancement: A Possible Reconciliation of Religious Outlooks and the Biotechnological Creation of a Better Human*, p. 116.

[36] J. SAVULESCU, I. PERSSON, *Getting moral enhancement right: the desirability of moral bioenhancement*, in *Bioethics*, 27, 3, 2013, p. 125.

and, secondly, you are also in a position to eliminate that threat. Harris has tried to refute this argument by mentioning Mr Schuringa who averted a terrorist attack. But such situations are exceedingly rare. Consequently, it seems indisputable that we are much more frequently in circumstances in which we could kill a number of people, than in situations in which we could save an equal number of people. In other words, it is easier for us to kill than to save lives [37]. In addition, it is much easier to spread an infection, for example, than to prevent the infection and save people. The fact that it is easier to deliberately spread an infection than prevent it is also shown by the fact that it requires less medical knowledge. English colonial settlers spread smallpox among Aboriginal Australians and Native Americans by the simple means of distributing infected blankets. In contrast, effective protection against an infectious disease requires the discovery of a vaccine, which takes sophisticated medical research [38].

6. *Arguments*

The argument of Persson and Savulescu in favor of moral bioenhancement is based on the following premises:

1. It is comparatively easy to cause great harm, much easier than to benefit to the same extent.

2. With the progress of science, which would be sped up by cognitive enhancement, it becomes increasingly possible for small groups of people, or even individuals, to cause great harm to millions of people, e.g. by means of deploying nuclear or biological weapons of mass destruction.

3. Even if only a tiny fraction of humanity is immoral enough to want to cause large-scale harm by weapons of mass destruction in their possession, there are bound to be some such people in a huge human population as on Earth, unless humanity is extensively morally enhanced. (Or unless the human population is drastically reduced, or there is mass genetic screening and selection, though we take it that there is no morally acceptable way of achieving these sufficiently effectively.)

4. A moral enhancement of the magnitude required to ensure that this will not happen is not scientifically possible at present and is not likely to be possible in the near future.

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[37] *Ibid.*

[38] *Ibid.*, p. 126

5. Therefore, the progress of science is in one respect for the worse by making likelier the misuse of ever more effective weapons of mass destruction, and this badness is increased if scientific progress is sped up by cognitive enhancement, until effective means of moral enhancement are found and applied[39].

7. *Critics and Objections*

The opponents of enhancement do not all set out to defend a common and clearly specified thesis. However, several of them would either assent or be attracted to the following claim (the Bioconservative Thesis): Even if it were technically possible and legally permissible for people to engage in biomedical enhancement, it would not be *morally permissible* for them to do so[40].

7.1. *Unfair position*

The Bioconservative Thesis can be defended in various ways. One argument is based on social considerations: though enhancement may be good for the enhanced individuals, it might well be bad for others. Thus, regarding intelligence enhancement it could be argued that if one person makes herself more intelligent she might disadvantage the unenhanced by, for example, outcompeting them for jobs, or by discriminating against them on the basis of their lower intelligence. These arguments may be persuasive when directed against the most commonly discussed biomedical enhancements – physical ability enhancements, intelligence and memory enhancements, and natural lifespan enhancements. But there are other types of biomedical enhancement against which they appear much less persuasive. Moral enhancement is one.[41] It is not clear how a morally enhanced person is supposed to harm other people. Her moral enhancement could not disadvantage others. On any plausible moral theory, a person's having morally better motives will tend to be to the advange of others. Indeed, on some views, the fact that having some motive would tend to advantage other is what makes it a morally good motive[42].

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[39] J. SAVULESCU, I. PERSSON, *The Perils of Cognitive Enhancement and the Urgent Imperative to Enhance the Moral Character of Humanity*, in *Journal of Applied Philosophy*, 25, 3, 2008, p. 174.

[40] T. DOUGLAS, *Moral Enhancement*, cit., p. 228.

[41] *Ibid.*, p. 229.

[42] *Ibid.*, p. 230.

7.2. *Identity Change*

Some critics argue that moral bioenhancement causes unjustified changes in the identity of the people using these bioenhancers. One bad effect of moral enhancement might be the loss of identity of the person using the bioenhancers. Worries about identity loss have been raised as general objections to enhancement, and Douglas believes there is no obvious reason why they should not apply to cases of moral enhancement. Clearly, moral enhancement of the sort we are considering need not be identity altering in the strong sense that an individual will, post-enhancement, be a different person than they were before. Our moral psychologies change all the time, and sometimes they change dramatically, for example, following particularly traumatic experiences. When these changes occur, we do not think that one person has literally been replaced by another. However, perhaps moral enhancement of a person would be identity-altering in the weaker sense that it would change some of their most fundamental psychological characteristics – characteristics that are, for example, central to how they view themselves and their relationships with others, or that pervade their personality. However, plausibly, we have reasons to preserve our fundamental psychological characteristics only where those characteristics have some positive value. But though someone's counter-moral emotions *may* have some value (they may, for example, find the experience of them pleasurable), they need not have it [43].

One might believe it is really important for her to preserve her fundamental psychological characteristics only when those characteristics have some positive value. Impulsiveness might be one of her fundamental characteristics, one which makes her recognizable to her group of friends, but it is certainly a negative characteristic that is not so good for her, or for her relationships with others.

7.3. *Unnaturalness*

The objection that moral bioenhancement is wrong because it is unnatural can be expressed through the following two statements:

(1) using biomedical means to morally enhance oneself *is* unnatural, and:

(2) this unnaturalness gives one a reason not to engage in such enhancement [44].

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[43] *Ibid.*, p. 239.

[44] *Ibid.*, p. 236.

In his paper [45], Thomas Douglas tried to challenge this objection, considering several different variants of the notion of *unnaturalness.*

David Hume distinguished between three concepts of nature; one which may be opposed to 'miracles', one to 'the rare and unusual', and one to 'artifice'. This taxonomy suggests a similar approach to the concept of unnaturalness. We might equate unnaturalness with miraculousness (or supernaturalness), with rarity or unusualness, or with artificiality. Douglas considers whether any of these concepts of naturalness succeeds in rendering both (1) and (2) plausible [46].

Unnaturalness as Supernaturalness

Consider first the concept of unnaturalness as supernaturalness. On one popular account of this concept, something is unnatural if, or to the extent that, it lies outside the world that can be studied by the sciences. It seems clear, on this view, that biomedical interventions are not at all unnatural, for such interventions are precisely the sort of thing that *could* be studied by the sciences. The concept of unnaturalness as supernaturalness thus renders (1) clearly false [47].

Unnaturalness as Unusualness

The second concept of unnaturalness suggested by Hume's analysis is that which can be equated with unusualness or unfamiliarity. Leon Kass's idea of unnaturalness as disconnectedness from everyday human understanding may be a variant of this concept. Unusualness and unfamiliarity are relative concepts in the following way: something has to be unusual or unfamiliar *for* or *to* someone. Thus, whether someone's biomedical intervention would qualify as unnatural may depend on whom we relativise unusualness and unfamiliarity to. For us inhabitants of the present day, the use of biomedical technology for the purposes of moral enhancement certainly does qualify as unusual and unfamiliar, and thus, perhaps, as unnatural. But for some future persons, it might not. Absent any specification of how to relativise unusualness or unfa-

[45] *Ibid.*, pp. 228-245.

[46] *Ibid.*, p. 236.

[47] *Ibid.*

miliarity, it is indeterminate whether (1) is true.

We need not pursue these complications, however, since regardless of whether (1) comes out as true on the current concept of unnaturalness, (2) appears to come out false. It is doubtful whether we have any reason to avoid adopting means merely because they are unusual or unfamiliar, or disconnected from everyday human understanding. We may often prefer familiar means to unfamiliar ones, on the grounds that predictions about their effects will generally be better informed by evidence, and therefore more certain. Thus, if I am offered the choice between two different drugs for some medical condition, where both are thought to be equally safe and effective, I may choose the more familiar one on the grounds that it will probably have been better studied and thus have more certain effects. But the concern here is not ultimately with unnaturalness – or any other objectionable feature – of the means, but rather with the effects of adopting it [48].

Unnaturalness as Artificiality

Consider finally the concept of unnaturalness as artificiality. This is arguably the most prevalent concept of naturalness in modern philosophy. It may be roughly characterised as follows: something is unnatural if it involves human action, or certain types of human action (such as intentional action). Claim (1) is quite plausible on this concept of unnaturalness. Biomedical interventions clearly involve human action – and almost always intentional action. However, (2) now looks implausible. *Whenever* we intentionally adopt some means to some end, that means involves intentional human action. But it does not follow from this that we have reason not to adopt that means. If it did, we would have reason not to intentionally adopt any means to any end. And this surely cannot be right. The implausibility of (2) on the current concept of unnaturalness can also be brought out by returning to the case where moral enhancement is achieved through self-education, rather than biomedical intervention. Such enhancement seems unproblematic, yet it clearly involves unnatural means if unnaturalness is analyzed as involving or being the product of (intentional) human action [49].

We should consider, at this point, a more restrictive account of unnaturalness as artificiality: one which holds that, in order to qualify as unnatural, something must not only involve (intentional) human action, it must also in-

[48] *Ibid.*, p. 237.

[49] *Ibid.*, p. 237.

volve *technology* – the products of highly complex and sophisticated social practices such as science and industry. Moving to this account perhaps avoids the need to classify practices such as training and education as unnatural. But it still renders unnatural many practices which, intuitively, we may have no reasons to avoid on the basis of means. Consider, for example, the treatment of disease. This frequently involves biomedical technology, yet it is not clear that we have any reasons on the basis of means not to engage in it. To avoid this problem, the concept of unnaturalness as artificiality would have to be limited still further, such that technology-involving means count as unnatural only if they are not aimed at the treatment of disease. On this view, the means of someone who uses moral bioenhancers are not unnatural in themselves. Rather, the unnaturalness arises from the combination of their means with certain intentions or aims. Perhaps by restricting the concept of unnaturalness in this way, we avoid classifying as unnatural practices (such as self-education, or the medical treatment of diseases) that seem clearly unobjectionable. However, it remains unclear *why*, on this account of the unnatural, we should have reasons to avoid unnatural practices. In attempting to show that a person has reason not to engage in biomedical moral enhancement, it is not enough to simply stipulate some concept of unnaturalness according to which their engaging in moral enhancement comes out as unnatural, while seemingly less problematic practices come out as natural. It must be shown that a practice's being unnatural *makes* it problematic, or at least provides evidence for its being problematic. Without such a demonstration, the allegation of unnaturalness does no philosophical work, but merely serves as a way of asserting that we have reasons to refrain from biomedical moral enhancement[50].

So, we have seen that Douglas argues that none of the three concepts of unnaturalness that follow from the Hume analysis make plausible both of the claims (1) and (2). We can conclude that none of these concepts of unnaturalness provide us with any reason to refrain from moral enhancement.

In addition, we could say that nature is morally indifferent. Nature might be good, or it might be bad. What is natural is not necessarily good or bad. If we did just what is natural, then we would not practice medicine, or treat illnesses. We would also not practice science or develop new technology. So, there is nothing moral or immoral in what is natural or unnatural. We should think about what is good for us, and what is bad, not what is natural and what is not.

[50] *Ibid.*, p. 238.

7.4. *Restricted Freedom*

This objection claims that moral bioenhancement limits the freedom of the people who use these interventions. By morally enhancing herself, a person will bring about that she has better post-enhancement motives, taken in sum, than she would otherwise have had. However, this result will come at a cost to her freedom: she will, after moral enhancement, lack the freedom to have and to act upon certain bad motives. And even though having and acting upon bad motives may itself have little value, it might be thought that the *freedom* to hold and act upon them *is* valuable. Indeed, this freedom might seem to be a central element of human rational agency. Arguably, a person has reasons not to place restrictions on this freedom. The objection can be captured in the following two claims:

[3] someone's morally enhancing himself will result in her having less freedom to have and to act upon bad motives;

[4] a person has reason not to restrict her freedom to have and act upon bad motives [51].

Claim [4] is, according to Douglas, problematic. He claims that it is not obvious that the freedom referred to therein has any value. Moreover, even if this freedom does have value, there may be no problem with restricting it, provided that the restriction is itself self-chosen [52].

John Harris has recently mounted the following objection to moral bioenhancement. Harris believes moral enhancement is wrong because it restricts the freedom to do wrong, and thus undermines autonomy. He implies that moral enhancement would somehow make it impossible to act immorally. Harris thinks that freedom consists not only in the freedom to make mistakes, but in the freedom to to something wrong. Consequently, without the freedom to make a mistake, good cannot be a choice. Also, for that matter, we eliminate the possibility of learning from our own mistakes. If we can never do a bad thing, then we lose the freedom to do wrong (evil), to sin. The freedom to do the bad thing is, in itself, an important human value. The objection can be expressed through the following premises:

(1) It is morally better, all things considered, to have the freedom to do bad (and actually act upon that freedom), than to be forced to do good.

(2) Moral bioenhancement takes away the freedom to do bad.

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[51] *Ibid.*, p. 239.

[52] *Ibid.*, p. 240.

(3) Therefore, moral bioenhancement is, in some sense, a morally inferior way of ensuring moral conformity.

We ask, first, whether this is so, and secondly, if it were impossible to act immorally, whether this would be a bad thing [53].

Let's consider the first two premises in some detail. Is it good to be free to do evil? The first premise of the argument makes a contentious value claim. It states that the freedom to do bad is such an important good that a world without it is worse than a world with it. But in comparison to safety from evil, it can be disputable. Freedom is only one value. It is equally important to be safe and secure, and a world without crime and violence might be better than complete freedom and a lot of crime. In the absence of perfectly effective moral enhancement, the loss of freedom in one domain of our lives – the freedom to commit evil deeds - would be worth the benefits, as we would remain free otherwise. Even in those cases in which moral bioenhancement could undermine autonomy, the value of human wellbeing and respect for the most basic rights outweigh the value of autonomy. This is not controversial. What could be a more moral way to prevent harm to others than to cause a person to change her mind? We are not free to commit serious crimes even now – the laws prohibit it on pain of punishment. If this is a loss, it would be outweighed by the fact that there would be no victims suffering from serious crimes [54].

I would argue that the objection about the reduction of freedom stands, because by using enhancements our freedom is being reduced, but in some cases this is justified. For example, the freedom of prisoners (although another kind of freedom) is also reduced, but this reduction is very reasonable and justified. In addition to this, we can make an analogy with political freedom, the freedom to act independently of the will of other citizens. Laws restrict us in a certain sense too, but this does not mean they are unreasonable. It can only be a problem of equality or asymmetry of power. None of us should be morally superior to others. But this asymmetry already exists without moral enhancement. In addition, a morally enhanced person will not harm other, morally unenhanced individuals. This inequality can actually be reduced by making morally deficient persons more moral, so that they are closer to morally average persons.

Not all restrictions on our freedom are bad. For example, it is not bad for

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[53] J. SAVULESCU, I. PERSSON, *Moral Enhancement, Freedom and the God Machine*, cit., p. 403.

[54] *Ibid.*, p. 411.

us to have a reaction of disgust, instilled in childhood, which makes us incapable of putting faeces in our mouth. This is a reaction that protects us from many infections. Other restrictions to our freedom are not imposed naturally, but socially. For example, our (moral) education is designed to deter us from carrying out certain acts, such as injuring or killing. The state also punishes such actions. Therefore, there are various social restrictions on our freedom. In general, these limitations are not voluntary, that is, we do not choose freely that they apply to us. But, surely, some of these restrictions are good and justified because the consequences of their imbalance would be detrimental to us. Accordingly, some non-voluntary restrictions on our freedom are beneficial. Also, freedom is one value, but not the only one; security is another.

One more response to the objection that bioenhancers reduce the agent's freedom, and that this reduction is unjustified, can be found in the claims of Vojin Rakić. He argues that we can have an entirely free will that does not limit the effectiveness of moral bioenhancement. We are free to decide whether we wish to be morally bioenhanced. If we decide to be enhanced, we have not given up our freedom. We have only used our freedom to decide to be morally bioenhanced. When people use bioenhancers that make them more altruistic, this does not lead to the conclusion that people with a higher level of altruism are less free than people with a lower level of altruism. Moral enhancement that increases empathy, and consequently altruism, in people does not restrict their freedom: people who are morally good (no matter whether they are morally bioenhanced or not) and always try to do the right thing are not less free than the ones who are inclined to fail to do so. Still, by making moral enhancement compulsory, the state would indeed encroach upon the freedom of its citizens [55].

So, what if an agent freely chooses to undergo moral enhancement? In that case we might argue that he has also freely chosen all his resulting good behavior. Consider the following story of Ulysses and the Sirens:

«The story provides an example of what can be called an obstructive or irrational desire which goes against his best judgement. Ulysses was to pass "the Island of the Sirens, whose beautiful voices enchanted all who sailed near. [They] … had girls' faces but birds' feet and feathers … [and] sat and sang in a meadows among the heaped bones of sailors they had drawn to their death", so irresistible was their song. Ulysses desired to hear this unusual song, but at the same time wanted to avoid the usual fate of sailors who succumbed to this desire. So he plugged his men's ears with bees' wax and instructed them to bind him to the mast of his ship. He told them: "if I beg you to release me, you must tighten and add to my bonds." As he passed the island, "the Si-

[55] V. RAKIĆ, *Voluntary moral enhancement and the survival-at-any-cost bias*, cit., p. 248.

rens sang so sweetly, promising him foreknowledge of all future happenings on earth." Ulysses shouted to his men to release him. However, his men obeyed his previous orders and only lashed him tighter. They passed safely[56]. Before sailing to the Island of the Sirens, Ulysses made a considered evaluation of what was best for him. Thinking clearly, with all the facts before him, he formed a plan which would enable him to both hear the song of the Sirens and live. His order that he should remain shackled was an expression of his autonomy. In the grip of the Sirens' song, Ulysses' strongest desire was that his men release him. But it was an irrational desire. At the time, this may have been his only desire. The song of the Sirens was irresistible. We see in this case how it is necessary to frustrate some of a person's desires, even his strongest desires, if we are to respect his autonomy»[57].

Another response to the objection from loss of freedom might be the following. Rakić proposes voluntary moral bioenhancement as a solution to this problem. He claims that if moral enhancement were to become compulsory, as proposed by Persson and Savulescu, our freedom would be restricted. Voluntary moral enhancement maintains that only voluntary enhancement will leave our autonomy intact. If we wish to diminish the danger of ultimate harm by restricting our freedom, we encroach upon a crucial element of our morality[58]. If freedom is essential for our morality, and morality is a key element of us being 'human', the implication is that making moral enhancement obligatory would deprive us, to some extent, of an important part of our human existence. It is critical that we keep our freedom intact. If we fail to do that, we will dispossess ourselves of something that is vital for our human status and will have already embarked upon the path of inflicting serious (if not ultimate) harm upon ourselves. Hence, Rakić argues in favour of voluntary instead of compulsory moral enhancement[59].

Thus, based on everything we have considered so far, we can conclude that the objection that moral bioenhancement is wrong because it would compromise the freedom to act immorally and undermine personal autonomy, and the 'precious' 'freedom to fall', is not so convincing. As Persson and Savulescu have noted, the enhancement of moral dispositions like altruism and a sense of justice would not undermine freedom of choice – it would not make people less free than those who are most moral today. Even if our freedom of choice

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[56] R. GRAVES, *The Greek Myths*, vol. 2, London, 1960, according to: J. SAVULESCU, I. PERSSON, *Moral Enhancement, Freedom and the God Machine*, cit., pp. 414-415.

[57] *Ibid.*, p. 410.

[58] V. RAKIĆ, *Voluntary moral enhancement and the survival-at-any-cost bias*, cit.,p. 248.

[59] *Ibid.*, p. 249.

consists in our choices not being fully causally determined, it can't be undercut by moral enhancement – rather, this freedom means that there are limits to the efficiency of moral enhancement, by whatever means, traditional or biomedical. Even if moral bioenhancement interventions undermine autonomy, this might be justified if they prevent grave suffering [60].

Moreover, moral enhancements which increase altruism, including empathetic imagination of the suffering and interests of others, coupled with a sympathetic response to this, together with greater preparedness to sacrifice one's own interests, greater willingness to co-operate, and better impulse control, would not undermine freedom or autonomy. Indeed, improved impulse control would enhance autonomy [61].

There are clearly some kinds of moral bioenhancement that do not compromise freedom. Indeed, some ways of enhancing the dispositions necessary for morality would increase freedom and autonomy. In the most extreme cases, where technology is able to remove the freedom to act in gravely immoral ways, the loss of such freedom could be outweighed by the suffering such behavioral modification would prevent [62].

Freedom is a precious value of human beings, but some restrictions on freedom are justified: for example, when a person wants to kill another human, or when someone wants to have sex with a child. These are cases where we can surely say it is more than justified to reduce freedom. In addition, there are other values besides freedom. A balance of values is needed. Freedom is not the only and absolute value. For example, dignity is another one. A person who kills another surely loses her dignity. So, we can give the following answers to the objection about restricted freedom: 1) not all restrictions on freedom are bad; 2) there are other important values, such as safety and dignity; 3) a person can choose to restrict her own freedom.

8. *Conclusion*

This paper offers a discussion of moral bioenhancement. After consideration of arguments in favor of and against moral bioenhancement interventions, we can conclude that there are reasonable worries about new technolo-

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[60] J. SAVULESCU, I. PERSSON, *Moral Enhancement, Freedom and the God Machine*,cit., p. 411.

[61] *Ibid.*

[62] *Ibid.*

gies, but none of these worries and objections are conclusive. Moreover, they do not provide reasons for a prohibition of moral bioenhancement. I have especially dealt with the objection about the restriction of freedom, since it can arguably be considered one of the most precious and essential characteristics of human beings. Although there might be justifiable claims about the restricted freedom of the agents who would use these interventions, only limited restrictions are justifiable. If we want to live in a safe world, we have to accept some restrictions on our immoral inclinations and behaviour. Interventions of moral enhancement might restrict our freedom to a very small extent, but that would be reasonable. Freedom is a precious value of human beings, but some restrictions on freedom are justified. In addition, there are other values besides freedom, such as dignity and honor. The issue of moral enhancement is very important, since moral behavior is, along with rationality, a precious value that constitutes us as human beings. Because of the prevalence of violence and other crimes, and with traditional means of moral education showing to be insufficient, there is indeed a need for moral bioenhancement.