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Science, Eugenics and Utopia

Comparing scientific humanism and liberal eugenics on human genetic enhancement

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Abstract

When we come across the word 'eugenics' it is impossible to avoid thinking of Hitler's eugenics and racial project. The latter, however, is hardly representative of eugenics. According to the definition provided by the Routledge Encyclopedia of Philosophy, eugenics is 'a scientific attempt to improve the human gene pool', which includes not only genetic engineering technologies but also the practice of husbandry, which some scientific utopias proposed to extend to human reproduction already in the seventeenth century. This is the historical background inspiring the most important theories of eugenics of the twentieth century. In the paper, I will first outline and compare Huxley's centrally planned eugenics to the liberal type of eugenics recently proposed by Nicholas Agar. In Huxley's view, eugenics was a social science with a genetic background, which required both public coordination of genetic enhancement and social planning. In contrast, Agar argues that, as long as it is entirely left to market regulation, not only eugenics is compatible with the liberal ideology but it actually constitutes the ultimate fulfilment of liberal society. In spite of remarkable differences, Huxley's and Agar's eugenics share the same utopian dream of physical and social perfection, which arguably finds its origins in the philosophical shift that led Puritan medicine to switch from *treating* human diseases but to *improving* the performances of the human body. This conception later found different expressions, depending on the dominant political ideology of the time. As a result, Huxley proposed eugenics in a context of social planning and collective internationalism whilst Agar has recently reformulated eugenics in a context of liberalism, individualism and market economy. Yet, whether through social planning or radical liberalisation, eugenics keeps being a crucial issue in the contemporary political agenda, never ceasing to be an inspiring dream as well as a tragic nightmare.

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‘Imperfections in the environment would vanish and there would be no limitation to human longevity, the peaceful existence would extend to human society, which would evolve towards a utopian state under the guidance of the saints. [...] The hard and unrewarding method of Scholasticism would be replaced by a revolutionary approach to knowledge in which the public good would take precedence over individual gain’.

J. Stoughton, *Felicitas ultimi saeculi*, 1640

Introduction

When the word ‘eugenics’ appears in any given text or speech, it is impossible to avoid thinking of Hitler’s racial eugenic project. This is not due to any intrinsic connection between eugenics and the Nazi regime: it is rather due to a historical contingency, in fact to the huge historical impact of the Nazi eugenic project. Its inglorious and atrocious reputation still causes the almost automatic connection between the eugenic practice and Hitler’s racist and cruel regime. However, Hitler’s program of eugenics is hardly representative of scientific eugenics. Hitler’s eugenics possessed a very low degree of scientific standard but eugenics was, and remains, a scientific practice, associated with genetic manipulation and genetic engineering.

Although the term ‘eugenics’ was coined by Galton in 1883, its origins do not date back to the discovery of the DNA nor to the discovery of Mendel’s laws of genetic reproduction nor even to Darwin’s theory of evolution. Galton defined eugenics as “the science which deals with all influences that improve the inborn qualities of a race” (Galton 1909, 35). According to the Routledge Encyclopedia of Philosophy, eugenics is the attempt to improve the human gene pool (Craig, 1998). If we adopt this broader definition and define eugenics as a scientific practice employed to obtain improved genetic profiles, eugenics include not only modern genetic engineering technologies but also selective and oriented reproductive matches. Generally applied to a wide varieties of animal or vegetal beings, this type of eugenics practice is known as husbandry. The

first modern proposals to apply husbandry for eugenic purposes to human beings date back to the seventeenth century. Not by chance, husbandry was a crucial feature of *all* the utopian plans of the seventeenth century, ranging from Tommaso Campanella's *City of the Sun*, Francis Bacon's *New Atlantis* and Samuel Hartlib's *Universal College*. Their political projects, in fact, advocated the application of scientific, i.e. experimental and repeatable, husbandry not only to animal farming and vegetal varieties but also to human beings.

Their utopias of human and social perfection included husbandry because the longevity of the body was one of the most important goals that a utopian society had to achieve in order to qualify as a perfect world. Actually, a powerful and often millenarian religious background underpinned their utopian vision. Working in London during Cromwell's regime and under the aegis of Hartlib's leadership, the Puritan scientists believed that science, including husbandry and medicine, was a tool provided by the Divine Grace to enable humanity to return to the state of perfection enjoyed by Adam and Eve in Heaven (C. Webster, 1975).

Their scientific ardour aimed at restoring the Paradise on Earth and consequently targeted all the dimensions of human life. They aimed at reforming the society through a new conception of politics, education and demography as well as achieving human mastery over nature through physics, chemistry and biology. Finally, they pursued human physical perfection and unlimited longevity through medicine and husbandry. Whilst medicine applied to the preservation and restoration of human health, husbandry aimed at producing more resistant human beings, with enhanced physical performance and capable of living longer without falling victim to any disease. According to Hartlib, medicine and husbandry might have granted humanity the possibility to achieve the longevity of the Patriarchs. Although not knowing about Mendel's laws or the structure of human DNA, these pioneer scientists knew the basic principles regulating reproduction matches and outcomes and tried to use them in a scientific way, combining a basic experimental approach with a systematic comparison of the outcomes.

In the broad definition hereby employed, eugenics was not just a key feature of the scientific utopias of the time but it also was inextricably linked to the emergence of science itself. Consequently, I felt it was necessary to recall briefly the origins and the salient features of the eugenics practice not only to show the mere contingency of the association between eugenics and Hitler's regime but also to reaffirm its intellectual background, utopian and scientific at the same time. I understand that coupling the word

science with the word *utopia* may induce surprise. Science is usually associated with rationality, objectivity, universality and neutrality. However, the objectivity and the universality of medicine do not stand in contrast with the utopian dreams of perfection sustaining the various medical practices. It is indeed possible to believe in the ultimate achievement of human unlimited longevity whilst practising medicine in a very rigorous and scientific way.

Here I should may be devote a short paragraph to the definition of utopia, not so much to develop and adopt a universal definition, given how controversial the term is, but rather to explain and define the working definition I chose to employ in the paper. A Utopia, (*u-topos*: nowhere), usually indicate a perfect world, located nowhere on this planet and still not only definitely conceivable but also, at least to some extent, realizable. There have been various forms of utopian thinking – from religious to philosophical ones, including ideological utopias such as *marxism* and scientific utopias such as Comte's *scientism* – depending on what kind of knowledge was deemed crucial to the formulation and implementation of a perfect society. However, the utopian thinkers are generally labelled as such by their opponents rather than by themselves. Actually, the so called utopian thinkers usually propose their vision of the future world not so much as a pure speculative exercise but as an *improved* version of the present society. In other words, utopian proposals are not the results of speculative imagination but of a careful observation of the present state of affairs and of an equally accurate programme of actions and requirements that are deemed necessary to remove present inequalities and inefficiencies so as to obtain a future society free from current limits and *therefore* perfect.

One might argue that, under current definition, any progressive thought may be defined as utopian. Yet, the utopian visions are *also* characterised by an escathological framework, which works as a motivational force and induce the utopian thinkers to believe in the unique value of their own proposal, not only vis-à-vis present alternatives but also vis-à-vis *future* alternatives. That is, the utopian thinkers present their utopian vision both as the *perfect* and the *final* stage of human history. This double belief, that is intrinsic perfection and the end of history, usually leads a utopian thinker to consider the establishment of the utopian society as the ultimate result of a series of political, social and technological actions wholly tuned to the achievement of the ultimate perfection. The utopian programmes rarely come to be implemented as they were originally

formulated but their visionary power as well as their motivational appeal do influence the actual developments of social behaviours, practices, structures and institutions.

Coming back to the previous example of Puritan's utopia, for instance, we can easily realise that even if the actual utopian programme of Hartlib's circle never came into existence, it constituted a major force behind the emergence of modern science and modern medicine. In fact, the new Puritan religious framework provided humankind with entirely new tasks and responsibilities vis-à-vis the Creation. Humanity was no longer a mere guardian of God's creation for it had to not only preserve God's creation but also *improve* it. Whilst classical and medieval medicine focused on the restoration of the physical equilibrium that sickness had disrupted, the medicine developed by the Puritan scientists pursued explicitly physical amelioration and unlimited prolongation of life. Only in this framework, science could manage to acquire the remarkable social status it possessed when Charles II created the Royal Society. Without this crucial shift in the religious and spiritual approach occurred in Germany, England and Bohemia during the first half of the seventeenth century, thus, the history and development of modern science and medicine would have been substantially different.

The utopian background of medicine and eugenics, however, did not disappear with the secularisation process. We find examples of eugenic ideals in Turgot as well as in Comte. As soon as science and its methods extended to the social sciences and to the spiritual domain, the pursuit of human perfection continued being the utopian horizon that sustained medical and eugenic practices. In this immanent version, the pursuit of human perfection actually extended to the religious domain through the proposal of an explicit plan of human divinisation (Comte, *The Catechism of Positive Religion*, 2004 [1891]).

This is the philosophical and historical background informing and inspiring one of the most important eugenic scientists of the twentieth century, Julian Huxley. In the following section, I will outline and discuss Huxley's theory of eugenics, which is currently upheld by the I.H.E.U. (International Humanist Ethical Union), an NGO founded by Huxley himself in 1952. In the subsequent section, I will turn my attention towards the most important contemporary theory of eugenics, namely Nicholas Agar's liberal eugenics. I will then try to compare the two approaches, outlining and discussing their relative similarities and differences not only in theoretical terms but also in relation to some of the current developments in genetic engineering and biotechnology.

A social science with a genetic background

Huxley's eugenic project, in a sense, is the natural development of his intramundane religion based on science. Huxley firmly believed Europe was facing an inexorable "racial degeneration" mainly caused by a "lowering of the rigorous standard of the laws of natural selection" (Huxley, 1931: 100). As a result, Huxley argued that eugenic policies were necessary to restore and accelerate the proper flow of evolution. In Huxley's view – and the recent scientific discoveries seem to confirm his ideas – the human personality was the result of the interaction between genetic outfits and social environment. Incorporating both genetic experiments and social changes, eugenics, therefore, was not a natural science but a social science supported by the scientific background of genetics (Huxley, 1950: 26).

At first, Huxley distinguished short and long-range eugenics. *Short-range* eugenics dealt with an alteration of the proportion of outstanding people in the whole of the "human stock". A slow improvement in this direction would make it easy to establish a *long-range eugenic strategy*. The latter could in turn achieve the highest religious goal: improve the quality of "human stock", bring a *new type of humankind* into existence and achieve *human perfection* (Huxley, 1931: 93).

Although it might sound visionary, such a programme had very concrete implications. First, it implied a strict control over reproduction procedures through the strict separation between the social and the individual side of sex and reproduction. Even though sex was essential to intimate relationships of love, from a eugenic perspective it was to be separated from reproduction. The latter was a social activity and must be devoted to the universal improvement of humankind (Huxley, 1964: 50). Second, Huxley suggested preventing mentally "defective people", as well as all people lacking valuable "intellectual qualities" such as the members of the working class, from 'breeding', if necessary through sterilisation (Huxley, 1931: 88-92). The policy of genetic improvement was meant to follow and complement these initial measures. The society, he argued, should encourage the 'breeding' of those with desirable qualities in order to ensure a balanced variety of talented people, such as poets, scientists and musicians, at all times. In this respect, eugenics was the avant-garde of all sciences and

could help humankind to fulfil its main purpose: the exercise of total control over its own evolutionary destiny (Huxley, 1931: 130).

Being aware that even very similar genetic outfits could develop differently depending on the social environment, Huxley suggested to combine eugenic measures with social and political reforms to ensure the most rapid and effective plan of eugenic improvement. In Huxley's vision, the reform of the environment not only ensured the perfect development of the individual personality but allowed the social and political authorities to discover the "defective" elements in the "human stock". More specifically, the failure of some individuals to live up to the evolutionary standards in a eugenic environment could only be due to their defective genetic outfit. Once recognised and isolated, these individuals would be prevented from 'breeding' and this would increase the speed of the human improvement process (Huxley, 1950: 44).

As a result, Huxley fiercely criticised the capitalist society of his time, arguing that it was a highly dysgenic environment for two main reasons. First, it neglected potentially outstanding people of the lower classes by refusing them the opportunity to fully develop their intellectual and physical potentiality. Second, its health care system did not help to eliminate harmful genetic profiles (Huxley, 1950: 46). It would have made little sense to apply a eugenic policy to this social environment because increasing the percentage of genetically outstanding people to the point where the society would be unable to incorporate them would only increase their frustration. In contrast, enforcing a new type of social and political environment in the absence of eugenic measures would not reduce the number of people genetically inadequate (Huxley, 1950: 42). The ideal environment, thus, was one in which a eugenic policy would improve both the genetic outfit of the population *and* the overall social conditions. In fact, eugenic policies and the reform of the social context were not sufficient unless followed by the rejection of nationalism and the establishment of a *supranational authority*. Huxley went as far as to suggest that international organisations such as the UN and UNESCO should enforce eugenics programmes in order to reverse a trend of racial degeneration (Huxley, 1964: 252, 267). During his UNESCO Directorate, Huxley addressed the problem of eugenics in this way:

"Thus even though it is quite true that any radical eugenic policy will be for many years politically and psychologically impossible, it will be important for UNESCO to see that the eugenic problem is examined with the greatest care, and that the public mind is informed of the issues at stake so that much that now is unthinkable may at least become thinkable."
(Huxley 1947)

It might be argued that eugenics was very much a common idea among scientists during the Thirties and the Forties and that Julian Huxley simply joined an already large and dynamic group of people in those years. However, he firmly adhered to his beliefs and published essays on eugenics right up to the very end of his life. Writing in 1964, Huxley intended to re-evaluate his previous account of scientific humanism and to develop it within the new context of the Cold War. Using the words of Teilhard De Chardin¹, Huxley affirmed that humankind's evolution had left the biosphere and entered the *noosphere*, the realm of the human mind. Looking up into the *noosphere* it would be possible to "see the Promised Land beyond" (Huxley, 1964: 81).

In this publication, Huxley renamed his philosophy 'evolutionary humanism'. The latter rested on three progressive and intertwined pillars evolving through history: *art*, *science* and *religion*. Art dealt with *significance*, science with *knowledge* and religion with *spiritual perfection*. Art could provide a qualitative enrichment of life in a process of discovery and extension of the self, opening the doors to a world where mind and quality would transcend matter and quantity. This world was the *upper* world, in contrast to the world of everyday life as well as to what he called the *lower* world, i.e. the visionary state of mind provoked by the consumption of drugs. *Science* was the second pillar: its task was to increase human control over the outer world. Huxley affirmed that science was as creative as art: the scientific laws did not exist independently of the human mind but were the result of human creativity applied to the explanation of natural phenomena. Science was a self-enlarging and self-correcting system, which had experienced an "irresistible trend towards the creation of one comprehensive scientific picture of the world of man's experience"(Huxley, 1964:110). Such a trend had extended the relevance of science first to the realm of ethics and then to religion itself to the point that science was ready to become a new theology for a new universal religious framework for the human sense of *reverence*. Science was, indeed, a "*new revelation*" (Huxley, 1964: 223-224).

Religion was the third pillar. Huxley redefined religion as a type of '*spiritual ecology*' dealing with the relationship between man and his internal nature. The new humanist religion preserved the sense of sacredness and the importance of religious experience, although rephrased in an immanent, psychological frame. Religion still

¹ T. De Chardin, a contemporary Jesuit and a scientist who made an attempt to reconcile Christianity and the theory of evolution, see "*The Phenomenon of Man*", Collins 1959

needed a divinity but a divinity without god. What should this *divinity* be? Huxley had no doubt: the highest purpose of religion was the “*divinization of human existence*” (Huxley, 1964:113). Being responsible for the fulfilment of its destiny of “*divinisation*”, humankind had the opportunity to bring the “transcendent world”, which he understood as a *perfect* version of the imperfect present, into concrete existence (Huxley, 1964:115).

The word *ecology* entered the writings of Huxley relatively late, but it turned out to have a great influence on his thoughts. Apart from the traditional ecology, focused on the relation between humankind and the environment, Huxley also mentioned *spiritual ecology* and *educational ecology*. The latter was concerned with human beings and their inner selves; educational ecology dealt with the relationships between the individual and his/her fellow human beings, bridging the divide between intellectual instruction and moral formation. In this way, education could both develop well-integrated personalities (psychological task) and build an evolutionary social environment (social task). At the completion of these three ecological revolutions, evolutionary humanism would unite all humankind into a global community with a common philosophy, culture and religion. Although he was confident that the end of the Cold War would give his evolutionary humanism another chance, Julian Huxley did not live long enough to see the Berlin Wall fall to pieces. He died on the 14th of February 1975, one year after publishing the two volumes of his recollections.

In sum, Julian Huxley’s concept of eugenics is a key component of his overall intellectual framework, in which humanity pursues the achievement of human perfection. Eugenics is one of the various scientific activities devoted to this task, namely the science dealing with the enhancement of human physical and intellectual performances. Other scientific activities, like medicine or physics, had to contribute to their own field, say health care and energy. Eugenics was part of a scientific political utopia in which science was expected to solve all the problems, shortcomings and inefficiencies of the human society, from spiritual dissatisfaction to the prolongation of human life. It is important to point out that in Huxley’s eugenics there is no trace of racism. His eugenic suggestions, however politically controversial, were always perfectly compatible with the sound and rigorous scientific standards of his time. In Huxley’s view, it was time to approach human evolution from its real perspective: that of the species *homo sapiens sapiens*. Consequently, Huxley rejected any reference to human races; he was actually a member of the group of scientists to whom UNESCO asked in 1955 to elaborate a scientific declaration against racism. Very much along this

line, Huxley also rejected relativism, nationalism and cultural ethnicity, because they simply constituted obstacles to the realisation of the perfect world society his universal evolutionary humanism promised to deliver. Finally, in Huxley's theory of eugenics, both private individuals and public authorities (not necessarily the state) were expected to actively cooperate to the ultimate task of enhancing both the human species and the society in which this species had to live.

The ultimate fulfilment of individual liberty

Julian Huxley was at the same time a biologist and a science popularizer, a spiritual leader and a social reformer. He served as General Director of UNESCO for some years, contributed to the drafting of its constitution, founded the IHEU and actively participated to the World Eugenic Society. Nicholas Agar is a philosopher, teaches at the Victoria University of Wellington and has recently written one of the most intriguing and challenging defence of eugenic practices. His moral arguments and suggestions, however, differ remarkably from Julian Huxley's eugenics propositions. Agar is, first and foremost, an advocate of liberalism. His main task, therefore, is to show not only that eugenic practices are compatible with the liberal ideology but also that they actually constitute the ultimate fulfilment of the basic moral imperative of liberalism: the achievement of the highest possible degree of human liberty and autonomy. Although belonging to different philosophical traditions, both Huxley and Agar pursue essentially the realisation of a perfect society, in which eugenics is expected to play a crucial role. In Huxley's perfect society, centrally planned eugenic measures subjected every single individual to the achievement of the common good. In contrast, in Agar's liberal eugenics society, the common good flows from the independent efforts of every single individual pursuing his/her self-realisation through unrestricted access to genetic enhancement techniques. Yet, it is intriguing that both philosophers looked at eugenics as one of the most effective practice to facilitate their ultimate goals of perfection.

In *Liberal Eugenics* (2004), Agar argues that liberal eugenics, in contrast to state eugenics, will not reduce but actually increase freedom of choice and individual liberty. Agar formulates a clear distinction between a *liberal eugenics*, which is scientifically sound and enhances individual freedom, and a *racist eugenics*, which is scientifically flawed and encourages discrimination. Agar tries to defend the liberalisation of eugenic

practices in two steps. First he tries to show that liberal eugenics is not associated with authoritarian, racist regimes imposing eugenic reproductive models. Second, he argues that liberal eugenics is worth of defence because it enlarges reproductive choices and give human beings new instruments and possibilities currently unavailable. In Agar's view, the exclusion of public authorities from the reproductive mechanisms ensures that the unrestrained fulfilment of the reproductive choices of private individuals may even enlarge the variety and diversity of phenotypes and genotypes of the human population. In one of his examples, Agar mentions the famous deaf lesbian couple that used the sperm donated by a deaf man to make sure that the child born would also be deaf.

The main methodology employed by Agar is the use of *moral images*. Agar proposes to evaluate the moral implications of innovative technologies or situations by applying to them the same moral images we currently apply to traditional and familiar technologies or situations. If, according to the extension of a moral image, the traditional and the innovative situations look similar there is no reason why the permission – or the prohibition – associated with the traditional situation should not be extended to the innovative one.

Agar is fully aware of the new technologies and of their potential applications and limits. Just to mention some of them: pre-natal and pre-implantation screening, pre-implantation manipulation and enhancement, and human cloning. Some of these technologies are already available and operative, like the pre-natal and pre-implantation screening. The latter belong to *negative eugenics*, i.e. to the section of eugenics aiming at reducing the amount of 'defective' human stock, as Huxley would say. *Positive eugenics*, such as pre-implantation manipulation and enhancement, are available and operative only in relation to some vegetal and animal species. The current genetic engineering technologies have so far accomplished minor achievements in the animal world, such as the engineering of hyper-intelligent mice and the cloning of a variety of animals, the first of which was the sheep Dolly. The situation is altogether different in relation to the vegetal world, where a great number of genetically modified varieties have been created, planted and, in some cases, successfully commercialised. In any event, the prospect of a more or less immediate commercialisation does not affect the method of moral images, by which it is possible to evaluate any innovative technology – even when far from being actually implemented – as long as there is a moral image that can be extended onto it.

Before entering Agar's moral arguments, however, it is necessary to outline his concept of human evolution as well as his concept of human society and human personality. His defence of eugenics, in fact, starts from a clear description of human evolution. In his historical reconstruction, the human species began its evolution through the natural selection mechanism, in which the environment was more or less stable and the human species gradually adapted to it. The outcome of this phase of human evolution was the emergence of the *Homo sapiens sapiens*. The latter in turn began to evolve through a progressive adaptation of the environment to his/her needs. The outcome of this phase was the development of human civilisation, of which liberal democracy and scientific development constitute the latest outcomes. With the advancement of genetic engineering and biotechnologies, however, the human species has entered the third phase of its evolutionary trajectory, in which it may be possible to engineer simultaneously genetic and social variations. In this respect, sharing with Huxley the same interpretation of human evolution, Agar reaches the same conclusions. In Huxley's theory of eugenics, the final phase, in which humanity could deal simultaneously with social variations and genetic engineering, was actually named 'psychosocial' evolution. In any event, the 'three phases' argument is far from being innovative and simply reaffirms the general interpretation of human progress originally formulated by Turgot, Condorcet and Comte.

As to human personality, Agar is also aware of the scientific flaws of genetic reductionism and affirms that human personality is always the result of the interaction between nature and nurture. Actually, his argument is that, provided that the aims are similar, it is legitimate to operate at the level of nurture *as well as at the level of nature*. In his view, the importance of nurture should be sufficient to dissipate any fear related to human cloning: two cloned individuals are less similar than two twins are. Here, the main difference between Huxley and Agar is that the latter would not consider legitimate any intervention by public authorities, whilst Huxley argued that such intervention was not only legitimate but also *necessary*. The reason why Huxley reached this conclusion was that the simultaneous intervention on nature and nurture required a rational and centralised planning to avoid discrepancies and lack of effectiveness. I will come back to this point at the end, because it seems to me that Huxley's argument constitutes the most powerful critique of Agar's liberal eugenics.

Once established that nature and nurture keep sharing the responsibility in constituting human personalities, Agar moves on applying the methodology of moral

images to both our current images of nature and of nurture. The first point is crucial: it is actually true there is nothing intrinsically moral in the current view of nature, which is based on the random distribution of genetic characteristics provided by both human reproduction and unpredictable natural genetic mutations. There is nothing intrinsically moral in the genetic profile of the *Homo sapiens sapiens* as it has evolved so far. It is the result of a random process of natural selection and adaptation, which has developed certain physical characteristics rather than others. Along this line, there is no moral difference in selective breeding and genetically modified food. In this respect, actually Agar seems to be right: having no intention nature cannot be moral. If anything, we have derived some of our moral values from this specific model of human being. Agar point is that in order to claim successfully that changing our genetic profile is morally wrong we should be able to demonstrate that preserving it is morally right. Moreover, Agar insists that the same species that has been morally able to separate sex from reproduction may as well separate reproduction from sex. Consequently, from a moral point of view separating reproduction from sex is as legitimate as engineering new versions of the *Homo sapiens sapiens*.

The process of human genetic engineering, therefore, may also extend to enhancement. Agar distinguishes not only between medical and enhancing genetic engineering techniques but also between the techniques improving the physical conditions of given individuals and the techniques giving birth to altogether different individuals. In the first case, all the medical techniques improving the future quality of life of the prospect children feature as legitimate. As long as they improve certain characteristics without impairing others, medical genetic engineering may include enhancing techniques. In the second, case, the techniques give birth to altogether different individuals therefore the Kantian moral argument that forbids treating individuals as means and not as ends simply does not apply. In this case, eugenics is not discriminating between two prospect individuals but giving birth to a specific one.

The same Kantian argument applies to nurture. The risk associated with using enhancing techniques usually relates to the expectations that parents inevitably come to place over their genetically engineered children. Using the moral image of education, Agar insists that if we accept parents influencing the future career, education, life-style of their children there is no logical reason to prevent them from boosting some their genetic characteristics. In his view, the genetic enhancement of intelligence, for instance,

does not put more pressure on a child than sending him/her to Oxford: they can always choose a different career.

Although I will outline and develop my criticism later in the paper, here I would like to raise one specific point. It is true, as Agar points out, that if we are allowed to influence the future career of our children through the modification of environmental conditions we may as well do it through genetic enhancement. However, parents' control over the environmental conditions is limited and subjected to social and political control, that is to say is always the result of a negotiation between their will, the will of their children and the social context. Unless we accept a similar control in the reproductive practices, genetic enhancement would remain totally under the control of parents. Moreover, their choices are irreversible. My point is that genetic enhancement, like educational choices, presupposes intentions, which in turn imply responsibility and accountability. Whilst our society has developed ways to measure and enforce parents' accountability for the educational choices of their children, at present we have not developed any similar mechanisms for genetic choices.

In fact, in the post-liberal future of a eugenic society, Agar accepts some regulating principles. He is aware that the liberalisation of eugenic measures may produce some perverse social consequences, which might put at risk the survival of current social structures. More specifically, he is worried that eugenics practices may produce *polarisation* and *homogenisation*. In the first case, eugenics may cause both intrinsic polarisation and a polarisation caused by differential access. The first type of polarisation should be limited by the principle that parents may intervene genetically only to *increase* the future choices of career and personality of their offspring. As to the second type of polarisation, eugenic treatments may produce classes of individuals so different that they will no longer consider each other fellow citizens. In other words, Agar suggests that differential access to eugenics treatments may cause a collapse of human solidarity, leading the genetically enriched to look at the genetically natural as we look today at apes. Obviously, the public authority regulating access to eugenic treatments should operate as to avoid such developments. Yet, as long as human beings will be able to recognise each other as member of the same species, Agar defends the polarisation due to differential access. The current liberal acceptance of the social stratification due to differential access to education, job opportunities and medical treatments implies the analogous acceptance of differential access to eugenic treatments. Actually, Agar is optimistic about the future prospects of eugenic treatments. First, the

gradual diffusion of eugenic treatments will make them cheaper and accessible, the genetically worse-off will be progressively reduced and, in the end, the polarisation will be reduced rather than increased.

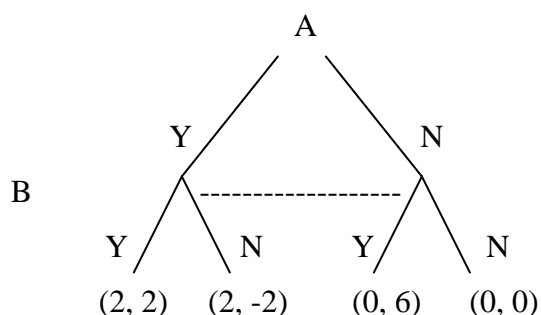
Agar's arguments against homogenisation, however, are a little weaker. He is confident that the principle restricting eugenics treatments to those increasing the future choices of children is sufficient to prevent the homogenisation of the population. Unfortunately, enhancing parents operate in order to realise their procreative visions, which are always the result of a projection of their wishes onto the society in which they live. They will use eugenic enhancement to make sure that their children will be successful in a specific social context: this may not restrict choices to one single model but it will not result either in a wider range of models than nature currently offers. Agar admits that a society in which black people will not be discriminated is the ideal goal, but he concedes that, as the latter is difficult to realise, we could as well let parents choose the skin colours of their children. He insists that they will not necessarily choose white skin, which might actually be true. Yet, I do not really see how the freedom of choice here may even increase the variety of human phenotypes. In fact, evidences from the industry of genetically modified organisms (GMOs) suggests that the commercialisation of enhanced varieties of vegetal products has drastically reduced biodiversity. It is obviously controversial to extend this conclusion to human beings, but it is equally controversial to assume that choices will increase instead of shrink.

In addition, Agar is aware that parents making genetic choices for their offspring may actually endanger them in a future context. His argument, however, is disappointing: if we let parents bring their children to dangerous motorways why should we prohibit the experimental risks associated with genetic engineering? Here I do not want to touch upon the various moral counter-arguments. I just wish to focus on a social one: we can accept parents carrying their children along risky motorways because we have a social and legal system that hold parents accountable for what happens to their children. Unless Agar accepts the idea of developing analogous systems related to eugenics treatments, I do not see how he could possibly extend the moral image of the motorways to the risky enhancing practices.

Huxley Vs Agar: how liberal can eugenics be ?

In the liberal eugenics society, not only the genetically based diseases will progressively disappear but also the overall human population will be genetically 'better'. Now, Agar claims that 'better' does not imply the success of any standards or conformist model but actually a remarkable increase of varieties and models, which would outnumber the actual variety produced by the natural reshuffling of genetic profiles. This is, I believe, one of the weakest points of Agar's utopian vision. The point is that prospective parents choose the genetic enhancement of certain physical traits always in relation to a specific social and cultural environment, in which their children are expected to live. A light skin colour only makes sense in a society that discriminates black people. The removal of the alleged genes of homosexuality only makes sense in a society that discriminates homosexual people in the very same way in which an anti-nicotine gene only makes sense in a society where tobacco consumption is a problem. It may be true that parents' choice will not be reduced to one single model, like the Arian race, but it is highly unlikely that, if the state keeps out, the variety will improve. Trends, fashion, social conditioning, conformism and class stratification already reduce drastically the potential development of an individual and it is difficult, *rebus sic stantibus*, to see how genetic enhancement may invert these trends.

I will now try to formalize my last assertion by using a very simple model of game theory, where we have two players A and B. A is player One, and represents the collectivity which, for simplicity, we assume to behave consistently as a single actor. B is player Two and has to decide whether to adopt eugenic measures to improve the genetic profile of his/her offsprings. Now, A has two options: yes or no, which have to be matched with similar options of B. Here it is the extensive form of the game:



Let us examine briefly the various options, and their relative payoffs. If we assume that eugenics becomes legal and perfectly available, player A may choose or refuse to adopt eugenic measures. If A chooses to adopt eugenic measures, our player B may conform and obtain the same payoffs of all the others (2, 2), or may refuse to conform and being discriminate (2, -2). Given the disparities in numbers, to player A the choice of B is indifferent. If player A chooses not to employ eugenic measures, player B may conform and the situation remains unaltered (0,0) or may take advantage and adopt eugenic measures (0,6), which is an option very rewarding given that player B will be the only one enjoying genetic enhancement. Therefore we have:

		Player B	
		Y	N
Player A (people)	Y	2, 2	2, -2
	N	0, 6	0, 0

Now given the previous assumptions, it is clear that the Nash equilibrium is reached at Y;Y (2, 2), which is a dominant strategy because no matter what A chooses, for player B is always better to choose Y (Yes).

Yet, the unlikely increase of individual choice is far from being the only problem with Agar's argument. Agar is right when he argues that in the concept of nature we have developed so far there is nothing intrinsically moral. Yet, the social context in which we live derives from this specific version of human nature. Any changes we engineer in the nature of human beings will most probably also affect the relative social conception. Now, as Agar seems to be fond of moral images, let me use the moral image of doping to illustrate this better. In our society, the achievements in sport practices are highly valued only when they are the result of hard training and commitment. If there is an intervention of doping drugs, the same results not only do not impress but also they are blamed. In this context, genetic enhancement looks very similar to doping drugs. It is true that different individuals do not start from the same level: some people naturally produce more EPO than others. Yet, this does not affect our social definition of sport activities because the genetic benefits are randomly distributed and without intentional plans. There is nothing intrinsically moral in this

specific definition of sport practices but it is clear that the genetic engineering of physical traits favourable to sport activities *will indeed change* our conception of sport.

This argument leads us to the core problem raised by Agar's liberal eugenics utopia and brings us back to Huxley's theory of eugenics. Agar's main argument is that, as long as the state keeps out, the liberalisation of eugenics practices will not alter the overall social structure. In fact, he adds, it will allow the liberal society to achieve its ultimate realisation because it will increase individual choice. In other words, Agar denies the spillover effect by which private practices will affect and modify social structures. Now, Julian Huxley's theory of eugenics makes clear why this is untenable. Even Agar agrees that the large majority of human characteristics of great value today, such as intelligence, beauty, physical strength or success, are the result of the interaction between various genes and the social and cultural environment in which we live. Therefore, to obtain significant results the mere genetic enhancement is not sufficient: it is also necessary to shape the social and cultural environment in such a way that the genetic enhanced individuals could maximise their success. The action of coordination between genetic engineering and social reforms is necessary to ensure a consistent development of a eugenic society.

Huxley knew that similar genetic outfits could develop differently depending on the social environment. The perfect eugenic society, thus, was one in which favourable social conditions were combined with a programme of eugenic control over the reproduction of the population. Huxley was not especially fond of governmental intervention and he knew the enormous risks associated with national eugenics programmes, as he was aware of Nazi eugenics programmes. However, he knew that social and political reforms were necessary to make sure that eugenics enhancement would yield relevant results. Without social and political intervention, the eugenic enhancement advantages would increase social discrimination without being effective.

Consequently, the same people that have invested so much in enhancing the genetic profile of their children will probably lobby to make sure that such investments will be eventually successful. For instance, they may actively encourage the introduction of policies of genetic discrimination. They may support health policies that actively foster eugenic selection to reduce the public health costs by selecting individuals less vulnerable to diseases like diabetes, cancer or ischemia. The liberal eugenic approach is probably right when it forecasts that the liberalisation of the new biotechnologies will not trigger social and political change along the traditional upside-down system, in which the

political authority imposes reproductive modalities and genetic standards to passive citizens. However, social and political change will indeed be promoted along the bottom-up system, in which political lobbies, economic and financial actors, pharmaceutical corporations and patient groups will exercise pressure on the political authority in order to have their interests acknowledged and fostered.

Some examples may clarify this point. Social discrimination already exists: it will not be introduced by the liberalisation of eugenic practices. The state cannot force white people to marry black people but can try to avoid white entrepreneurs to adopt discriminating policies in their hiring procedures. The liberalisation of eugenic practices may suggest alternative ways to solve social discrimination, i.e. by removing physical traits considered negative by the social dominant paradigms. What is true of skin colour may equally apply to other features, like height, gender, intelligence and so forth and so on.

In case the liberalisation of eugenic techniques does not involve public authorities, eugenics will increase social discrimination and cause a substantial shift in western social models of health care, hiring procedures and social participation. The emphasis will no longer be on social responsibility and public services but will be placed on individual responsibility. The health care focus may switch from public access to medical treatment to the genetic improvement of the population. The concerns raised by environmental degradation may switch the public policy focus from reducing pollution to increase human resistance. The social focus on alcoholism, depression, drug-addiction, mental illnesses may neglect the collective factors and turn its emphasis on individual will and genetic factors. In a word, the extension of human intervention to the genetic identity of an individual may well be morally acceptable but may as well radically change the social and political structures in which we live.

It may come as a surprise to the reader, but these social changes are already taking place as I write. Let me just mention some concrete examples, which support the likelihood of the transformations above mentioned well before the large majority of Agar's eugenic treatments may reach commercialisation. The increased concern on the genetic roots of many of our common diseases coupled with the promises of a 'personalised medicine' is shifting research and clinical priorities towards entirely new health care models, based on the narrative of 'individual choice' (Petersen 2006; Newman & Vidler 2006). Research priorities, and therefore research funds, are increasingly concerned with biotechnology and genetic diagnostic and engineering (Kaufert 2000). The interest upon the environmental and social factors related to the emergence and

diffusion of diseases like cancer, diabetes, alzheimer is fading away, leaving this field of research with scarcity of funds and resources. The biotechnology sector, within which the genetic research is dominant, has recently become the most funded among all the research sectors funded by the European Commission. The OECD Report on the most recent R&D trends in biotechnology confirms that it is becoming one of most important economic sector for research and development as well as for sales and patent applications, growth and commercial potential. Within the biotech industry, the health sector is clearly the most important: it enjoys the large majority of funds, of employment, of sales and of R&D investments.

Some recent studies have focused on how the new biomedical technologies produce remarkable consequences even before their large-scale implementation. According to Clarke at al. (2003), the Western world is facing an increasingly pervasive social, cultural and political phenomenon named *biomedicalisation*. In their study, they show how the emergence of the new biotechnologies made a remarkable contribution to the transition from medicalisation to biomedicalisation, which is transforming the concept of 'health' into "*an individual responsibility to be fulfilled through improved access to knowledge, self surveillance, prevention, risk assessment and the consumption of self help biomedical goods and services*". Consequently, biomedicalisation is encouraging an *extension of medical jurisdiction*, in the sense that various aspects of human life previously outside medical jurisdictions come to be constructed as medical problems. Second, it is engineering a process of commodification of health, whereby the Health Care sector has not only increased its GNP share from 4% to 13% but also encouraged a switch of the responsibility of disease treatment from the social system to the individual consumer.

The large investments made by the public sector are socialising the costs of research and technology advancement without socialising its profits, usually enjoyed by the pharmaceutical corporations patenting new drugs that are often the result of years of research conducted on public funds. The parallel reduction of public investments in 'ordinary' academic research and didactic activities is forcing the academic system to rely more and more on the funds provided by the private foundations and corporations, re-orienting their research agenda to the issues and needs of the funding agencies.

Moreover, the increased centralisation of medical care centres, often merged under the control of large pharmaceutical corporations, is producing higher efficiency but also higher costs for both the medical insurance companies, which are increasing their tariffs, and the public health care system, which pays higher bills. In turn, biomedicalization is

reinforcing the social stratification related to the access to health care provisions. Whilst the upper middle class is being co-opted into new biomedical practices, the classes with lower income are being excluded from basic health provisions or co-opted into various forms of limitations, with regards, for example, to reproduction and birth control. As a result, pharmaceutical corporations and insurance companies are having an increasing impact on the boundaries between the normal and the pathological (P. Conrad, 2005).

Petersen (2006) has argued that the new genetic technologies, apart from potentially affecting future policy making choices, are also transforming our common concepts of health, illness, nature and culture. The traditional balance between the natural and biological, on the one hand, and the social and the cultural, on the other hand, is shifting towards a new understanding of human identity, in which the biological, and more specifically the genetical, is acquiring a growing importance (Glasner 2004; Glasner and Rothman 2004). The possibility of intervening into the genetic makeup of living organisms is transforming the traditional concept of a fixed and immutable nature into a new definition in which the biological and the social mutually constitute each other, through reciprocal intervention. Whilst social and cultural priorities shapes genetic research and intervention, the latter, in turn, come to influence and reinforce given social and cultural priorities. In fact, science and technology can be interpreted as the result of a process of co-production in which social, political and scientific actors interact and finally determine the directions, the priorities and the advances of the scientific activity. In a sense, technology innovation and cultural transformation permanently constitute each other, always reflecting the priority choices of the specific society in which these changes take place (Jasanoff 2004).

Within this framework, health is increasingly being framed as an ideal state of freedom from disease, the predominant causes of which are seen to be due to 'faults' in the human genome (Pavone 2006). In turn, the environmental – including the social, the political and the cultural – factors which predispose to disease, such as working conditions, pollution, adequate healthcare, diet and living habits, tend to be ignored or assigned secondary importance. The transformation of the current concept of health and illness inevitably affects the corresponding conception and structure of the healthcare system. The latter has been often reframed in terms of *choice healthcare*, a definition that emphasises individual responsibilities, choices and actions and tends to downplay the importance and the role of the public welfare provisions. In addition, the new genetic screening technologies promise the close delivery of a 'personalised' medicine,

that is medical treatments specifically tailored to the unique genetic profile of the patient (Royal Society 2005). The emphasis on individual choice and personalised medicine, in turn, reinforces the neoliberal approach to the governance of genetic technologies in the sense that it proposes the liberalisation of genetic medical products as the necessary condition for a ‘successful illness management’ of the individuals (Frank 1995). Ultimately, the emphasis on self-management encourages direct-to-consumer marketing of genetic screening tests, even when their clinical utility is not entirely clear. In the UK, the Genewatch has raised concerns about unregulated genetic testing (GeneWatch 2002) and the OECD is about to issue specific guidelines for safe and reliable use and delivery of genetic testing (forthcoming 2007).

Although not necessarily leading to a resurgence of racism, there is evidence suggesting that the new genetic technologies and findings may also affect our traditional understanding of race, ethnicity and identity. Although he acknowledges the increasing connection between science and race discourse, Skinner suggests that this connection may not necessarily imply a resurgence of scientific racism. In his opinion, the genetic findings have provoked the emergence of a more complex phenomenon, namely *biologism*, in which the concept of race increasingly incorporates cultural and ethnical elements whilst the concept of ethnic identity gradually encompasses genetic and biological information. This complex interaction may actually give rise to a new *biopolitics of identity*, as the boom of genetic tests to establish biological ancestry or to support ethnic claims demonstrates (D. Skinner, 2006)

Finally, on the 29th of April 2006, the US Case Law School received 773.000 dollars to “develop guidelines for the use of human subjects in what could be the next frontier in medical technologies: genetic enhancement” (Mitchel & Hook, 2006). Consequently, Huxley was probably right when he argued that it was not really feasible to liberalise eugenics practices without involving public authorities in the promotion of their development as well as in their regulation. The transformations triggered by these technologies may be so remarkable that they certainly require a consistent and centralised effort to steer them into the right direction. Therefore, there is evidence to believe that eventually the state and its redistributive system will be involved in regulating provision of and access to the biotechnologies. If this proved true, the entire philosophical construction of Agar would collapse. It would demonstrate that the

utopian dream associated with eugenics necessarily imply the transformation of our society into a new one, substantially different from the one in which we live today.

In sum, Agar's liberal eugenic utopia suffers from internal inconsistency because it assumes a compatibility between liberal democracy and eugenics that not only is theoretically untenable but also empirically flawed. If we truly liberalise eugenics, polarisation and discrimination will drive the society to a point in which current social bonds and collective solidarity will collapse. They might well encourage the emergence of a new society, but it will be a *radically different society*. I admit that it is difficult to imagine how our conceptions of health care, political participation, family and reproduction, social structures and even sport activity will change, but it is not difficult to realise that they will indeed change.

On the other hand, if we accept the introduction of social and political intervention the very basic notion of liberal eugenics collapse to the ground, leaving the door open to a state-regulated eugenics. The state may not need to impose eugenic criteria, as Huxley advocated, but it will be certainly involved in choosing what to allow and what to prohibit, what to subsidise and what to keep accessible to private out-of-pocket expenses. If we allow humanity to begin operating at both the environmental and the genetic level, it does not make sense to keep social and political structures dealing with the environmental transformations whilst leaving genetic transformations entirely in private hands. The risk is that, at some point, the two trends may find each other entirely at odds, thereby provoking either a social collapse or the re-adaptation of the social structure to the new genetic context (or vice-versa).

Conclusion

Science, eugenics and utopia

Having dealt with the differences between the two utopias, I can now move on to the conclusion. Although Huxley and Agar write in a very different period and arrive at different conclusions, there are interesting similarities between the two accounts of eugenics. My argument was that these similarities derive neither from a common philosophical background, nor from a direct influence of the former on the latter. Both the secular humanist Huxley and the liberal Agar come to consider eugenics, and the social and physical changes associated with it, as the privileged way to achieve the realisation of a perfect society. The political ideologies underpinning the two eugenic

societies differ substantially because of the divergence in the priority list of values the two philosophers hold.

Therefore, the common objective of pursuing the perfection of the human condition, not only in its physical traits but also in its social and environmental features, requires a different explanation. The common utopian horizon may derive not so much from direct similarities between the two authors but from the utopian dimension that has been sustaining so far science in general and medical and reproductive technology in particular. This dimension comes to the fore, for instance, when we compare the two accounts of human evolution, which look very similar and derive directly from the theory of evolution elaborated by the French philosophers in the nineteenth century. Obviously, this common utopian horizon has been embodied and expressed in different ways throughout the last four centuries, depending on the dominant political ideology of the time. Consequently, it does not look strange that Huxley proposed eugenics in a context of social planning and collective internationalism whilst Agar has recently reformulated eugenics in a context of liberalism, individualism and market economy.

Whether through the social action of an international system of governance, as Huxley suggested, or through a radical liberalisation in the individualistic market economy, as Agar advocates, eugenics keeps being one of the most important topics of the contemporary political agenda. Although incarnated in various and often opposite ideological frameworks, the eugenic utopian dream of perfection keeps sustaining the scientific advances and its technological developments. Ever since the philosophers of the scientific revolution came to accept that science and medicine existed to *change* and *improve* the world, eugenics has not ceased to be an inspiring dream as well as a tragic nightmare. And today, we find again ourselves proclaiming the importance of eugenics to achieve the ‘good life’. I quote:

‘Liberal eugenics proposes that these (reproductive) technologies be used to dramatically enlarge reproductive choices. Prospective parents may ask genetic engineers to introduce into their embryos combinations of genes that correspond with their particular conception of good life. Yet, they will acknowledge the right of their fellow citizens to make completely difference eugenics choices.’ (N. Agar, 2004: 6)

The problem, really, is not so much that people may be allowed to make different eugenic choices. Rather, the problem is the idea that in order to achieve ‘a good life’ they might need to make eugenics choices.

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