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LIBERALISM AND BIOMEDICAL PROGRESS: A POSITIVE VIEW

This paper argues in favor of the thesis that liberalism should stand firmly on the side of biomedical progress. The reasons for this position do not lie in any specific and substantive bioethical view, but in an appreciation of the very liberal view about human freedom and a free social order. The author considers many issues –regarding economic, social and political, and moral aspects– posed by biomedical progress, and concludes that the issue of biomedical progress is the first great intellectual and political question to present itself following the demise of socialist ideology. This represents a great opportunity for liberalism: we might say that we have returned to its golden age.



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A NEW IDEOLOGICAL CLEAVAGE

Since the very origin of this learned Society, it has appeared clear that there were two issues which were never going to be resolved by any rational and friendly discussion: God and gold. As a matter of fact, there were religious as well as atheistic or agnostic members –the former considering liberalism as fundamentally linked to religion (especially Christianity), and the latter as purely secular; and there were members that considered the gold standard as the indispensable foundation of any sound market economy, while others considered it a relic of past ages. While the issue of the gold standard faded away quite quickly, the issue of God –or, more exactly, of religion and liberalism– was doomed to stay well alive in our Society.

I believe that there are good reasons for assuming that bioethical and biotechnological issues will increasingly play a similar role amongst our members and, more generally, amongst liberal intellectuals. As a matter of fact, bioethical and biotechnological issues seem to call for a deep re-consideration of some of the basic moral, political, and even economic concepts that are traditionally associated with the liberal view of man and society.

This should come as no surprise. Indeed, it could be seen as just one case in a more general process: namely, that the consequences of science and technology –be they actual or prospective– are so new and so pervasive for present and future generations as to call for a deep rethinking of the classical political categories. There is probably an element of exaggeration in the thesis that the choice between favoring and

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opposing an (almost) unlimited application of the new biomedical technologies –especially genetic and reproductive– will soon come to represent the fundamental political cleavage of our societies, overshadowing the classical left/right or progressive/conservative divide. However, the simple fact that biomedical issues have rapidly come to play an important role in any political program or agenda in democratic countries cannot be denied; nor can it be denied that they are crossing the traditional ideological spectrum.

This paper will argue in favor of the thesis that liberalism should stand firmly on the side of biomedical progress. The reasons for this position do not lie in any specific and substantive bioethical view, but in an appreciation of the very liberal view about human freedom and a free social order.

FREEDOM AND HUMAN NATURE

What are the issues posed by biomedical progress? There are many, of course. Some of them regard economic aspects, such as the increasing costs of high-tech medicine, or the financing of medical and nursing care for an ever older and long-living population. Some of them regard social and political aspects, because an increasing number of seniors will affect family relationships, and deeply influence the political decisions concerning the allocation of public resources. Some of them regard moral aspects, as they call for juridical and legislative decisions in matters like end-of-life medical decisions, euthanasia or artificial life support.

However, these aspects –albeit very important indeed– are not at the core of the issue that we are dealing with. As we are considering the stand liberalism should take in the face of biomedical progress, I think we should firstly confront the most fundamental challenge that it poses: namely, the possibility that advanced genetics knowledge and technology will render man capable of changing his own biological structure or, as is often said, of changing his own nature.

Should liberalism welcome biomedical progress? Or should it rather support a 'bio-conservative' view –as that put forward, from different perspectives, by such eminent scholars as Leon Kass, Francis Fukuyama, or Edmund Pellegrino– in the belief that the very idea of individual freedom and of a free social order would fade away were human nature to be modified?¹

Let us start from the general question of whether liberalism depends on a specific view of human nature. I think that the answer to this question is negative.

It is well-known that liberalism –as an approach to individual freedom as well as social, political, and economic freedom– does not represent a single body of knowledge. As a matter of fact, the concept of liberalism includes several opinions and traditions

¹ See, for example, Leon R. Kass, *Life, Liberty and the Defense of Dignity. The Challenge of Bioethics*, Encounter Books, San Francisco (CA) 2002; Francis Fukuyama, *Our Posthuman Future. Consequences of the Biotechnology Revolution*, Farrar, Straus and Giroux, New York 2002; Edmund D. Pellegrino, *The Philosophy of Medicine Reborn. A Pellegrino Reader*, edited by H. Tristram Engelhardt, Jr. and Fabrice Jotterand, University of Notre Dame Press, Notre Dame (IN) 2008. I wish to stress that by putting all these scholars under the single heading of 'bioconservatives' by no means am I overlooking the many differences between their points of view.

that are distinct from the historical as well as from the theoretical point of view. What we call liberalism is the intellectual and factual overlapping of these views and traditions. This is well-reflected in the differences between the various currents of liberal historiography.

Most liberal views and traditions have their own particular assumptions about the nature of man. This is true, for example, of the Lockean view, of the Humean view, of the Kantian view, and of the post-Hegelian view (such as H.T. Green's and Benedetto Croce's take on the matter). It is also true of the utilitarian views of Jeremy Bentham and of John Stuart Mill, or of the 'evolutionary' view of Herbert Spencer. The *prima facie* conclusion, therefore, should be that, if liberalism does not have one specific view of human nature, then there is no reason to assume that the very idea of individual freedom and a free social order should lose meaning or relevance when, and if, human nature should be modified.

This conclusion might appear to be too 'intellectualistic', and probably is so. Some further considerations *a parte obiecti* are therefore called for.

Does individual freedom and free social order rest on our *biological*, genetic nature? In my opinion, the best answer to this question can be given by referring to Friedrich Hayek's fundamental work on the relationships between biological evolution, cultural evolution, and freedom.

According to Hayek, the freedom-based rules of conduct which made the Great Society –the free social order extended to millions of individuals– possible are essentially fragile and unstable. The reason is that such rules conflict with older instinct –the heritage of older stages of human evolution– that civilization has contained and repressed, but not eliminated. While the existence of moral rules in the Great Society depends upon their being continuously enforced, the rules of tribal morality are deeply entrenched in our biological nature. Hayek suggested that it is "more than probable" that many of the moral feelings that man acquired over the hundreds of thousands of years before the first elements of civilization appeared –which ultimately produced the Great Society– "have not merely been culturally transmitted by teaching or imitation, but have become innate or genetically determined"². They include the idea of a common hierarchy of ends and the deliberate sharing of means according to a common view of individual merits. And since these genetically determined feelings concern the totality of the human population, there are few chances that in the long run the process of evolution for the Great Society's rules of conduct will not be reverted. Any 'default' in the mechanism of transmission (retention), or any failure in the production of new rules (mutation), adapted to changing circumstances, may result in a reversal to those rules that can be considered innate.

If Hayek's view is right, then individual freedom and free social orders do not causally depend upon our present biological nature. They are the result of a cultural evolution –as distinct from biological evolution– that was allowed, but not determined, by our

² Friedrich A. Hayek, *The Atavism of Social Justice* [1976], in *New Studies in Philosophy, Politics, Economics and the History of Ideas*, Routledge and Kegan Paul, London and Henley 1978, pp. 57-68 (p. 59). For an examination of Hayek's evolutionary theory that highlights its progressive content see Angelo M. Petroni, *What is Right with Hayek's Ethical Theory*, "Revue européenne des sciences sociales", 33, 1995, n. 100, pp. 89-126.

genetic structure. As a consequence, there is no reason to assume that individual freedom and free social orders would necessarily fade away if our genetic structure should change.

An interesting question arises here. The possibility of modifying the human genome is the highest achievement –or, rather, the promise– of biotechnologies. The genetic structure of man will not change by ‘blind variation and selective retention’ –as in natural evolution. Indeed, modifications will be the result of scientific knowledge as well as of conscious behavior. The result is that, even if changes could be transmitted genetically and not by teaching or imitation, we would still be facing a cultural rather than a natural evolution, as the whole process would be a teleological and not a random one.

The possibility that the humane genome could be modified according to the will of human beings is criticized by bioconservatives from several points of view.

It is said that this would produce a change in the very nature of man, forging a path to a ‘post-human’ future. This post-human future would be tantamount to the worst of all possible worlds. On the one hand, it would be conducive to the realization of Aldous Huxley’s “Brave New World” –namely, an egalitarian collectivistic utopia. On the other, it would be conducive to an extremely inegalitarian society, where some genetically enhanced individuals would dominate over the others.

The very fact that bioconservatives derive two diametrically opposite conclusions about the future of human society from the idea of changing the human genome is in itself proof that their arguments have little sound basis.

As far as the first scenario is concerned, it is obvious that liberals cannot but reject any idea of a Brave New World. But the reason is not that the Brave New World would be made possible by powerful drugs affecting the workings of the human brain, or by technological devices allowing impersonal human reproduction. The reason is that biomedical tools would not be decided and used by individuals according to their free decisions, but by a totalitarian ruler in an effort to control the life of individuals.

As far as the second scenario is concerned, several people have argued that genetic enhancement of the human being –be it somatic or germline– is not likely to lead to a strongly inegalitarian society. Genetic technologies are bound to become widely available and inexpensive, just like most other technologies. There is no more reason to assume that the state should get control of genetic technologies in order to ensure that all citizens receive equal treatment –as people like Ronald Dworkin advocate– than there is to assume that the state should get control of current medical technologies in order to ensure that all citizens get the same medical care³.

There is no agreement amongst scientists about the possibilities and scope of genetic modifications of the humane genome. While some believe that in the near future biomedical technologies will allow us to modify our genes in such a way as to design our offspring according to our will, others affirm that the complexity of the human genome will make such an objective impossible to reach. Genetic engineering may be able to remove certain ‘bad’ genes in order to have babies without some specific genetically-determined illnesses, but the idea of selecting a handful of genes in order

³ See Ronald Dworkin, *Sovereign Virtue. The Theory and Practice of Equality*, Harvard University Press, Cambridge (MA) 2000.

to have 'designer babies' –with exceptional intellectual or physical gifts– is scientifically wrong.

It is obviously not the aim of this paper to account for the ongoing scientific debate on these issues. Nor should liberals necessarily favor one scenario over another. It should be remembered that liberalism has always been particularly critical of any utopian thinking, be it positive or negative, precisely because it believes that the future should be shaped by the free will and the free action of each generation –not by any super-individual, irresistible, 'historical' force, or by a deterministic chain of events⁴.

From the point of view of liberalism, the point at stake here is the exercise of human freedom in the domain of an almost completely new reality.

FREEDOM AND ORDER

Liberalism poses the primacy of individual freedom over social, political, and economic order. Liberalism assumes that order should be generated by the (free) will and actions of individuals, and not the other way around.

Liberalism gives great relevance to moral and social rules and traditions, but it does so from a two-fold point of view. In the first place, it posits that rules and traditions should be the result of voluntary actions of individuals over long time periods. In the second place, it claims that rules and traditions should be instrumental to the protection of individual rights.

There is a sharp difference here between liberals and conservatives. Let me highlight some points.

1. For conservatives, maintaining a viable social order is the fundamental criterion for judging any moral rule as well as any human action. The same can be said about the role and value of freedom. Therefore, for conservatives, ethics should essentially include positive duties of individuals towards their community and society. Liberals, on the other hand, conceive ethics as mostly –if not completely– composed of negative rules: that is, rules that forbid conduct that might violate the rights of others, rather than rules that prescribe a specific behavior.
2. Conservatives feel that a legitimate trade-off can be made between freedom and other social values (such as order), while for liberals the so-called social values (including order) should be the consequence of individual freedom. There is therefore no reason to consider any kind of trade-off to be implemented by political coercive measures.

⁴ An interesting case is a positive utopia –one of the very few indeed today– connected with biomedical progress as well as with physical sciences and information technology advancements. This view was labeled 'transhumanism', and mostly consists in a loose array of ideas and concepts – some coming from science, some from science fiction– and adopted by very different kinds of people. The World Transhumanist Association calls for "the ethical use of technologies to extend human capabilities". No less than immortality is the objective of some supporters of this utopia, while others are eager to colonize other planets. 'Transhumanism' does not have a single ideological position, as some of its believers advocate a social and world-scale control over man's future physical and mental enhancements, while others favor a libertarian position.

3. Liberals carefully distinguish between the idea that individuals living in a single society should necessarily share basic ethical rules, and the idea that they should have common ends. While conservatives give the highest importance to the latter idea, liberals do not.
4. Liberals make a clear distinction between law and morality. This leads to the principle that moral ideas related to matters of conduct, and that do not directly interfere with the private sphere of others, should never be a justification for coercion. This distinction is not generally accepted by conservatives.
5. Liberals believe that individuals are the best judges of their own interest and of that of their offspring. This being the rule, exceptions must be proved by contrary and circumstantial evidence. Conservatives do not generally share this view, as they think that communities –be they civil or religious– have to influence and direct the individual's choices.
6. Liberals hold that the interaction of individuals –each freely pursuing their own interest– will lead to the well-being of all. Only if property rights are not clearly defined, or if they are not fully respected, will this not prove to be the case. Phenomena like negative-sum societal games are the consequence of an inadequate property rights framework or enforcement. Even when they appear, in the real world, as unavoidable, and without a centrally-enforced regulation (take air pollution, for example), because of high-transaction costs, they make the exception and not the rule of social phenomena in a context of freedom. Conservatives, instead, hold that reaching and maintaining the general well-being requires strong restrictions of the individual's freedom of action.

The liberal view is not just a moral theory. It is also an epistemological theory; it is supported by the distinction –elaborated, among others, by Hayek and Michael Polanyi– between two kinds of orders⁵.

The first kind of orders are *constructed orders*. These are the result of a deliberate act by a single man or by a restricted number of people. Their existence is due to the fact that all the elements of the order obey commands that specify what each of them must do in all specific circumstances. Constructed orders are developed to attain a specific aim, which is common to all members of the order itself. The complexity of these orders will not exceed what can be mastered by a single person or by a limited number of persons. We may sometimes call this kind of order an 'organization'. Such an order's efficiency rests upon the fact that the organizing principles are clear, internally consistent, and properly executed. An army, or a commercial company, are examples of constructed orders. But the machinery of the state is also an example of a constructed order. Arguably, planned economies of communist countries represented the most powerful attempt to build all-embracing constructed orders.

The second kind of orders are *spontaneous orders*. They are not planned by any single mind or group of minds, but emerge from the meeting of intentions and actions of a plurality of individuals, each pursuing his or her own aim. Their existence rests upon the fact that their elements follow rules that avoid interference with other people's

⁵ See Friedrich A. Hayek, *Law, Legislation and Liberty. A New Statement of the Liberal Principles of Justice and Political Economy*, 3 vols., Routledge and Kegan Paul, London 1973, 1976, 1979; Michael Polanyi, *The Logic of Liberty*, Routledge and Kegan Paul, London 1951.

aims and behavior. These rules are therefore a prohibition of unjust conduct. In this sense, they can be called 'orders of freedom'. Individuals in spontaneous orders are 'free' in the sense of Isaiah Berlin's "negative freedom", or Raymond Aron's "liberté liberale". Spontaneous or self-generating orders can be very complex since they do not rest upon the knowledge possessed by a limited number of individuals –e.g., legislators, or the government. They are non-hierarchical. Since they do not serve any pre-determined aim, they can evolve in relation to changing internal and external conditions without dissolving entirely. The market and language are two major examples of spontaneous orders. Despite the fact that they are the result of innumerable purposive and rational actions, their general configuration at any moment in time is not decided by a single individual or set of individuals.

The concepts of constructed and spontaneous orders are obviously two *Idealtypus*. Nevertheless, they have a strong explicative power of social, political and economic phenomena and changes. When faced with any social, political or economic proposal, from a liberal point of view, one should always ask the question –which is at the same time descriptive and normative– *is the proposal making the global order of a society more constructed, or more spontaneous?*

Keeping these concepts in mind, I think that we can properly evaluate bioconservatism from a liberal point of view. Bioconservatism appears to be founded on the very same principles of classical conservatism. In fact, bioconservatism is opposed to biomedical progress in fields like genetic modifications of the human genome and human reproductive technologies, such as cloning, brain enhancement, and life-span extension, on the grounds that it would destroy the present social order. This would be true even if the application of new technological opportunities were the result of free individual decisions by people about themselves and their offspring.

For liberals, the bioconservative approach is wrong because it inverts the correct causal link between freedom and order; for them, the 'just order' is the state of affairs which follows from free actions of individuals, in respect for the rights of all other fellows. To say it in another way, for liberals any 'end-state' view of justice is basically flawed.

Bioconservative opposition to biomedical progress invariably calls for strong legal prohibitions of all sorts on decisions by individuals about themselves and their offspring. Very often, the case is made for international agreements about prohibition and enforcement, so as to keep those biomedical practices that are forbidden in one or another countries from being carried out in other –allegedly less morally conscious– countries, even for people coming from the 'moral' countries. There are few doubts that this approach is tantamount to a strong restraint of the individual's sphere of non-interference by public power.

Concerning this point, one cannot but wonder about some aspects of the politics of President Bush's administration in matters of biomedicine. In fact, the Bush administration made a concerted –albeit unsuccessful– effort to pass a UN resolution banishing human cloning and research on embryos. Putting the UN in charge of a such an important decision, which would extend to American jurisdiction, was obviously in contrast with the tradition of conservative American administrations on safeguarding national sovereignty. At the same time, the Bush administration tried to pass federal legislation in matters of biomedicine in order to replace the 'permissive' laws of several states with

stricter regulation. This too was in contrast with the tradition of Republican administrations of the last decades which had acted to reverse the process of centralization, with a return of power to the states. If we add this to the fact that the Bush administration tried to pass restrictive federal regulation even on the use of private funds in biomedical research, it becomes increasingly clear that biomedical progress is creating a new ideological and political cleavage.

It bears remembering that at the very origin of the modern concept of freedom and of a free political order there was the idea that every individual has a right to his own body. This idea progressively developed to include freedom of choice in medical treatment as well as freedom to refuse unwanted medical treatment –both being an expression of “negative freedom”. By claiming that individuals should be barred from receiving medical treatment that they want (and that they can afford!) in the field of reproduction, as well as in the field of body enhancement, or in life-span extension, bioconservatives are *de facto* reverting to a pre-modern view of the relationship between individuals and public powers. One wonders why bioconservatives are not so consequential as to call for a re-instatement of the crime of non-assisted (attempted) suicide, as existed in the codes of several countries in the past.

In the bioconservative thought, there is a deep distrust of human choices about life and death issues. Indeed, bioconservatives assume that, in the face of opportunities allowed by biomedical progress, man will choose on the basis of unrestrained desires and instinct, not on the basis of morals and reason. Hence, generalized external constraints on man’s behavior are called for –to benefit humans and their offspring, as well as to safeguard the societal order. One might wonder if this negative anthropological view –which considers freedom an illusion or a danger, or both– essentially derives from a particular interpretation of religious thought, or if it is the consequence of the bioconservatives’ adherence (be it conscious or not) to a Freudian idea of mind, family and society.

The conclusion to be drawn is that the bioconservative view calls for a decisive step in making our societal order more constructed and less spontaneous.

WHY IS BIOCONSERVATISM SO ATTRACTIVE?

Bioconservatism exerts a strong attraction over a large number of intellectuals, everywhere in the world. Some of them are also traditional political conservatives, while others –like Jürgen Habermas– are leading leftists⁶.

Why is bioconservatism so attractive? In my opinion, the strongest element of attraction is that bioconservatism seems to represent the only effective protection of the life of all human beings against the risks that, allegedly, derive from new biological discoveries and their technological applications. In the face of the probability, even very small, that new discoveries and technological applications could result in a deadly threat to human biological and social life, the rational attitude is to forbid empirical research as well as its applications.

⁶ See Jürgen Habermas, *Die Zukunft der menschlichen Natur. Weg zu einer liberalen Eugenik?*, Suhrkamp, Frankfurt am Main 2001.

This approach is often labeled 'the precautionary principle', and has become one of the mantras of radical ecological thought, as well as of national and super-national political bodies, like the European Union. It deeply permeates the bioconservative thought as well.

The case of the European Union is particularly striking. In 1997 the Treaty of Amsterdam stated that "The Commission, in its proposals [...] concerning health, safety, environmental protection and consumer protection, will take as a base a high level of protection, taking account, in particular, of any new development based on scientific facts. Within their respective powers, the European Parliament and the Council will also seek to achieve this objective" (Article 95).

As in any relational concept, the expression "a high level of protection" means little if a 'low' level of protection is not first defined. However, the connotation of the concept is clear: *the European institution was committed to policies that privilege the reduction of risks*. This is confirmed by Article 174: "Community policy on the environment shall aim at a high level of protection, taking into account the diversity of situations in the various regions of the Community. It shall be based on the precautionary principle [...]". And here we are.

The precautionary principle, however, does not originate from the creativity of European bureaucrats. One of the first significant instances was in the Ministerial Declaration of the Second International Conference on the Protection of the North Sea (1987): "In order to protect the North Sea from possibly damaging effects of the most dangerous substances, a precautionary approach is necessary, which may require action to control inputs of such substances even before a causal link has been established by absolutely clear scientific evidence".

A new Ministerial Declaration was delivered at the Third International Conference on the Protection of the North Sea (1990). It fleshes out the earlier declaration, stating that "the participants [...] will continue to apply the precautionary principle; that is, to take action to avoid potentially damaging impacts of substances that are persistent, toxic and liable to bioaccumulate even where there is no scientific evidence to prove a causal link between emissions and effects".

The precautionary principle is also listed as Principle 15 of the 'Rio Declaration' of 1992 among the principles of general rights and obligations of national authorities: "In order to protect the environment, the precautionary approach should be widely applied by states according to their capabilities. Where there are threats of serious or irreversible damage, lack of full scientific certainty shall not be used as a reason for postponing cost-effective measures to prevent environmental degradation".

Clearly, there is a sharp difference between the two formulations. In the first case, the principle is tantamount to adopting a 'zero-risk strategy'. A given class of actions should be forbidden even when there is no scientific evidence that they lead to undesired results. In the second case, the principle advocates a 'low-risk strategy'. A given class of actions should be forbidden when scientific evidence suggests that they are harmful, even if no scientific certainty may be attained.

The second formulation is compatible with standard rational behavior theory. In the presence of prospective catastrophic losses, a relatively low degree of evidence suffices for refraining from taking a given course of action. But the first formulation is in-

compatible with standard rational behavior theory. If evidence for a causal link between a given action and a given consequence is zero, then no basis exists for refraining from taking that action. *There is no difference between this version of the precautionary principle and plain superstition.*

The issue of the precautionary principle has become so important in EU policies that the Commission, in February 2000, felt the need to summarize its guidelines. The conclusion is illuminating: "When the available data are inadequate or non-conclusive, a prudent and cautious approach to environmental protection, health or safety could be to opt for the worst-case hypothesis. When such hypotheses are accumulated, this will lead to an exaggeration of the real risk but give a certain assurance that it will not be underestimated"⁷.

The consequences of this conclusion are far-reaching. As standard rational decision-making theory teaches, in any course of action, to act on the basis of the *worst* possible consequence is completely irrational. On these grounds, one should never board a plane or cross a street. Even more relevant for the issue of health care, *one should never engage in clinical trials of new drugs or new medical treatment, or even undergo any surgery.*

Supporters of the precautionary principle systematically ignore the fact that any human action involves so-called 'opportunity costs': i.e., the costs that people must bear as a consequence of the fact that a new product or a new technology was not developed because the decision was made to not engage in an alternative course of action. The decision to do nothing, or little, incurs opportunity costs. The decision to delay the pace of scientific, technological and economic change (due to the desire to avoid any kind of risk) implies the costs of renouncing all benefits that might have ensued: better procedures, better products, better technologies. Included in these costs is the fact that humans will have fewer instruments with which to face future changes in their environment. They will have fewer chances to combat new threats, such as a new virus. *In the long run, the systematic application of the precautionary principle will lead to a less safe and more unpredictable world.*

The precautionary principle also has an anthropological aspect that should not be underestimated. In fact, it corresponds to a view of society that wants to deprive individuals of their freedom to choose. It is a part of this freedom that individuals should be allowed to make their own choices about the level of risk –and corresponding costs– they are ready to assume in decisions about food, healthcare, personal lifestyles. Policies based on the precautionary principles strongly reduce this freedom. Individuals are not seen as free and responsible beings, but as minors needing to be guided by bureaucrats and politicians.

As a consequence of previous arguments, any approach to human affairs that would be based on the precautionary principle is as wrong from the rational point of view as it

⁷ On this whole issue, see Angelo M. Petroni, *Perspectives for Freedom of Choice in Bioethics and Health Care in Europe*, in H. Tristram Engelhardt, Jr (ed.), *Global Bioethics. The Collapse of Consensus*, M&M Scrivener Press, Salem (MA) 2006, pp. 238-270. The European ideology in matters of biomedicine is summarized by the text approved by the Council of Europe's "Convention for the protection of human rights and dignity of human beings with regards to the application of biology and medicine: Convention on human rights and medicine" held in Oviedo in 1997.

is unacceptable from the liberal point of view. Bioconservatism makes no exception. Faced with the tremendous changes that biomedical progress could induce, adoption of the 'zero-risk' –or near-to-zero-risk– solution appeals to some of the deepest human sentiments. But it is not in agreement with the tenets of either human reason or human freedom. To borrow a splendid concept of Hayek's: "Since the value of freedom rests on the opportunities it provides for unforeseen and unpredictable actions, we will rarely know what we lose through a particular restriction of freedom"⁸.

It is perhaps worthwhile to remark that the bioconservative view rests upon an inexplicit assumption that cannot withstand rational scrutiny. This assumption is that if nothing were done by man himself, humanity would continue its history indefinitely. A gloomy post-human future could only be the result of an irrational human decision to put an end to an otherwise endless happy human future.

From any sound evolutionary point of view things appear quite different. In fact, there is no reason to assume that the environment will never produce, by itself, deadly dangers for the human species. The only way humans can avoid the development of new forms of life that might endanger the very survival of the species is to foster scientific knowledge and its technological applications. This might well include modifying the human genome so as to enhance our resistance when faced with changing environmental conditions –even climate change, if any. Bioconservatives, no less than fundamentalist ecologists, appear closer to Linnaeus than to Darwin in their representation of man and his biological environment.

SOME CONTROVERSIAL ISSUES

As I said before, the purpose of this paper is not to argue in favor of any substantive ethical or bioethical view. However, there are a few specific points that are perhaps worth examining in order to give support to the thesis that liberalism should firmly stand on the side of biomedical progress.

A first point concerns the issue of changes in the biological nature of man: be they functional or genetic, or due to the advancements of science and technology, do they necessarily lead to a complete subversion of the existing moral rules? Genetic enhancement, reproductive cloning, indefinite life-span extension: these would represent not only a subversion of the social order of our liberal-democratic societies, but also the end of moral rules as we know them. Basic values such as freedom and equality would lose their content, and would progressively vanish. Legal prohibition and enforcement would become necessary in order to preserve the very existence of moral rules and moral values –including the value of freedom. In this way, we would face a particularly dramatic and radical example of the old paradox of freedom: namely, that in order to preserve freedom, that very freedom would need to be restrained by the coercion of public powers.

The basic flaw of this view is that it does not fully take into account the fact that the moral rules and values prevailing at any given time are the result of a process of biological and –above all– cultural evolution. Moral rules and values will evolve anyway,

⁸ Friedrich A. Hayek, *Law, Legislation and Liberty*, cit., vol. 1, p. 56.

mostly as a result of man's adapting to new conditions created by man himself. For people who cherish freedom, the real alternative is not to stop evolution in order to preserve freedom, but to make sure that evolution is guided by individuals' choices and not by coercion.

Bioconservatives assume that individual rights, as they have developed in the Western political tradition, are inextricably linked to the idea of the genetic equality of all people or, rather, to the fact that every person participates in a "genetic lottery", as Fukuyama puts it. Hence, it is argued that rights are inseparable from the statistical randomness of nature and from the ignorance of humans regarding their own nature, both as a species and as individuals.

This argument is logically false. It is almost a textbook example of a 'naturalistic fallacy', of flawed reasoning pursuant to which it is maintained that certain prescriptive moral tenets can spring from descriptions of states of affairs. The argument is also historically false. In reality, the notion of individual rights is historically linked to the idea that humans are capable of understanding their own nature and that of the natural environment around them. Nor does this argument find support in the history of Western constitutional traditions. That "All men are created equal", or that "Les hommes naissent et demeurent libres et égaux en droit", has nothing to do with any "genetic lottery" or biological view; on the contrary, it has everything to do with the Christian idea of an individual –and immortal, of course!– soul.

Finally, this argument is an extraordinary example of materialistic reductionism: it effectively holds that individual rights will disappear once the genetic structure of the species and of every individual becomes known to science. In short, it purports that the existence of rights depends precisely on this genetic make-up. From a materialistic reductionist perspective, any notion of individual rights and of liberty simply falls away. Furthermore, the idea is wrong even from a scientific point of view: the complexity of the human genome, the reciprocal relationships between genes, and the epigenetic phenomena, are such as to make any serious attempt to understand man's genetic structure so well as to be able to describe an individual phenotype untenable.

Bioconservatives also assume that human values and human dignity are inseparably linked to the existential finitude of human beings or, to put it more prosaically, to man's biological limitations. The limits of human mental faculties, together with the finite nature of the human life span, are thus seen as values to be preserved through legislative prohibitions on biomedical advances and on the very will of the individual.

That the certainty of death is the fundamental pillar of man's moral life is an argument that is undoubtedly sustainable from a religious point of view or from that of any one of the many existentialist philosophies to have come out of the twentieth century. But the idea that human values, including individual liberty, stem from the certainty of death (or even from the fact that a life span should not exceed more than a few decades) and from man's biological constraints, is an argument that has no rational foundation and no empirical evidence to back it up.

One might wonder why physically enhanced individuals –with stronger mental powers, living longer and in better health– should cherish freedom less than we do. Indeed, historical evidence would suggest differently. Longer life spans, fewer illnesses, and more effective control of reproductive choice have historically gone hand in hand with

a stronger preference for the value of freedom. This should come as no surprise. The biological limits of human beings make mere survival –not freedom or other typically cultural values– the driving force behind their actions. Only when these limits are weakened does freedom play a larger role in individuals' preferences.

A second point concerns the issue of the so-called manipulation of human life that is involved in biomedical progress. Research on human embryos is probably the most important and controversial case, as it is considered the key technique available today for the advancement of biological knowledge and technology. Many thinkers believe that research on human embryos is morally unjustified as it represents a violation of the dignity of human life. Prospective advances in medicine deriving from this kind of research would not justify such behavior, as every human life has an infinite value, and should not be sacrificed for the utility of other human life. As one might expect, Christian churches, and especially the Catholic Church, are the foremost supporters of this view, while many Asian religions, as well as some variants of the Jewish and of the Muslim religions, have completely different approaches.

The liberal doctrine is underdetermined with regards to this kind of issue. In fact, from the central ideas of liberalism –according to which every individual has inviolable rights, including the right to life– no description follows about whether embryos should be considered individuals or not. What is clear from a liberal point of view is that, if they are considered individuals, then research on embryos should be conducted with the same limitations as medical or pharmaceutical research on men. Indeed, such limitations should be even stronger, given that embryos obviously cannot express their will. By the same token, in vitro fertilization should be severely restricted, or even forbidden. Accepting the validity of utilitarian arguments here could possibly lead to a loosening of these limitations, but definitely not to their removal. The freedom of researchers and of prospective parents should be legitimately limited out of respect for other individuals' rights.

I suspect that the issue of the ontological and moral status to be awarded human embryos is one of those issues on which liberals will never agree.

It would be impossible here to account properly for the sophistication of the debate that has been carried out on these issues⁹. Suffice it to say that while bioconservatives

⁹ A most interesting volume is *Human Cloning and Human Dignity: An Ethical Enquiry*, The President's Council on Bioethics, Washington (DC) 2002. The Council at that time was chaired by Leon R. Kass. A comprehensive bioconservative view is contained in Michael J. Sandel, *The Case Against Perfection. Ethics in the Age of Genetic Engineering*, The Belknap Press of Harvard University Press, Cambridge (MA) and London 2007. Sandel also served on the Council. See also the proposals for regulation on stem cell research contained in Francis Fukuyama's and Franco Furger's report *Beyond Bioethics. A Proposal for Modernizing the Regulation of Human Biotechnologies*, The Paul H. Nitze School of Advanced International Studies, Johns Hopkins University, Washington (DC) 2006. There is little coherence between most of the proposals in this report and the theses Fukuyama defends in his above-quoted book. For example, the report strongly criticizes Italy's legislation on in vitro fertilization because it would be exceedingly restrictive. On the progressive side, a scientist's very thoughtful and (mildly) pro-market insight is given by Gregory Stock's *Redesign Humans. Our Inevitable Genetic Future*, Houghton Mifflin, New York 2002. Ronald Bailey enthusiastically makes the case for freedom of research on stem cells in *Liberation Biology. The Scientific and Moral Case for the Biotech Revolution*, Prometheus Books, Amherst (NY) 2005. See chapter 3. More gen-

consider the prohibitions and limitations to research on embryos and to fertilization techniques crucial to the defense of the dignity of human life, they do not seem to give the same relevance to the fact that in our countries abortion is legally or *de facto* freely allowed as a simple individual choice. From their point of view, one might wonder why destroying embryos at an early stage of development in order to research new drugs against the most serious illnesses, or destroying (some) embryos in order to have children by means of in vitro fertilization, should be considered more negative than allowing and carrying out abortions. Fear of biomedical progress appears to be the explanation, but not a justification.

A third point concerns the so-called end-of-life issues. Strictly speaking, these issues are not necessarily connected to the question of biomedical progress, as they can be traced back to the early stages of medicine, when obviously no such thing as organ transplants, embryo manipulation or technological modification of the human genome was possible. However, biomedical progress has given them an unprecedented relevance, as new drugs and medical technologies make the prolongation of human life possible even in extremely poor conditions.

The liberal theory allows here for a variety of positions: there is no direct answer to be derived from the liberal principles to such a question as if, and when, to stop giving medical care to unconscious patients. However, this fact should not be taken as a statement that liberal principles have no relevance in these issues. In truth, the complexity of situations deriving from the advancement of medical science should never conceal the fact that liberal principles demand –in the circumstances of a medically managed termination of life no less than in any other– the primacy of an individual's will (and consequent right to make all decisions concerning his or her own body) over any other principle prevailing in a society, be it religious or secular. There are doubts and disagreements about how this should be expressed and how it should be enforced, but not that it should prevail.

Many people feel that assisted suicide should not be allowed because it would represent a violation of the patient's inalienable right to life. This argument may be valid from some ethical points of view, but is unsound from a liberal point of view. For liberals, the very idea of 'inalienable' rights has no other meaning than the statement that any individual should be able to express his will without coercion. If there is no coercion, then any reason for forbidding assisted suicide is tantamount to affirming that the group, or the society, must morally prevail over the individual.

Moral and legal traditions matter here, of course. Most of them put strong limits on doctors' behavior, as they prevent practices that would be tantamount to 'assisted suicide'. In many countries these limits have been extremely weakened, as assisted suicide, under some circumstances, is legally admitted. It is not hard to understand the worries of those who are afraid that legalizing assisted suicide –or euthanasia, if you prefer– will pave the way to medical practices that, in the end, have very little to do with the fulfillment of a patient's will, and a great deal to do with economic issues. Considering the highly socialized level of medicine almost everywhere in the world, there are

erally, his book is an excellent exposition of the arguments in favor of biomedical progress. Bailey's view is considered an example of 'libertarian transhumanism'.

reasons to fear that decisions about ending life will be taken on the basis of bureaucratic regulation, and that the real issue will be the effective respect of the will of people who want to get the most out of medical care, not the respect of the will of people who want assisted suicide.

THE LEGAL ORDER OF FREEDOM

In matters of life or death, the definition of property rights is particularly difficult and complex. Furthermore, advances in biomedicine constantly call into question the old legal frameworks, as they allow for new interventions on the human body.

From the liberal point of view, the only purpose of any legal framework, as well as of any regulation, is to ensure that the property rights legitimately owned by an individual are recognized and protected against any violation. It goes beyond the scope of law and regulation to enforce any blueprint over society, or to favor any distributive or redistributive ideal.

There is a clear-cut difference here between liberals and conservatives –and between liberals and socialists. The difference does not only concern the ends, but also the means: i.e., how a legal framework should be conceived. This does not mean, of course, that liberal thinkers all share the same view of the law. Indeed, liberal ideas have been elaborated according to very different legal theories, from natural law to legal positivism.

In recent decades, considerable attention has been paid to the question of which legal framework is better suited to the liberal view of man, society, and the economy. One of the most relevant positions points to the meaning of and the differences between *law* and *legislation*, claiming that the liberal view is better served by the first concept. Since I think that this position is highly relevant for the purpose of this paper, let me list some of its main tenets here.

A body of law is made up of rules that are the result of a long series of decisions made by judges, and of the opinions of lawyers. As a consequence, law is the product of no single will. It is not the product of invention, but of the discovery of that which is considered just or unjust, at any given time and in any given society, by the *maior et sanior pars* of people. The juridical rules are the result of a process of converging evolution, 'from precedent to precedent', which shapes the *rationes decidendi* of the judges.

As a rule, juridical norms do not *prescribe* any specific behavior to individuals. They *forbid*, rather, such behavior as might harm others, i.e. that might violate other people's legitimate rights. "*Thou shalt not steal*" prescribes no specific behavior, in daily life or in economic life. It only forbids an action that represents a violation of the property legitimately owned by others. For this reason, as was stressed by Hayek, juridical rules are *abstract* rules; they do not indicate any specific aim to be attained. Their function is to maximize the chance, for any single individual, to attain his own aims without preventing others from attaining theirs.

Since law is essentially a process of discovery, juridical rule will normally incorporate the rules of behavior which are actually followed by individuals in their interaction. As was explained well by David Hume –and, a couple of centuries later, by game theory,

of course— these rules emerge as the result of repeated interaction under different circumstances. Out of many alternatives tried, these rules are adopted because they best serve each individual's ends.

The juridical norms resulting from legislation, on the other hand, are the product of a specific will. This will may be of an absolute sovereign or of a parliament. The aim of legislation is not to find what is generally considered to be just and unjust by the *maior et sanior pars*, but to make a *specific will* prevail: for example, the will of a parliamentary majority. As a consequence, legislation is a command which is given to individuals, a prescription of behavior. It does not maximize the chances of all, but its function is to allow some individuals to attain their aims even at the expense of others' chances.

As one might expect, in the course of history law and legislation have always existed simultaneously; people in power have always attempted to veer the law-making process in their favor. To a smaller degree, law and legislation have been complementary to each other. In fact, law has always needed —albeit in different ways and to different degrees— a sufficiently reliable political order as a framework for its proper functioning. Furthermore, sometimes, the process of generating juridical rules has been unsuccessful in producing convergent results, thereby calling for a 'centralized' intervention.

The twentieth century has undergone a substantial innovation: the balance between law and legislation has shifted in favor of the latter, especially in civil law countries. As has been shown by such scholars as Hayek and Bruno Leoni, the result of this process has been very detrimental to individual liberty, to the working of liberal democracy, and to economic efficiency¹⁰.

As Karl Popper taught us, the very essence of democracy is the possibility of controlling power —even the power of the majorities. Law has always represented a formidable guard against the possibility of any single power imposing its will. 'Government under the law' has been synonymous to limited or restrained government. Now that law is made by government itself, the paradoxical result is that individual liberty is put at risk not because individuals are *not* submitted to the law, but because they *are*. The principle of the rule of law lost most of its content from the moment that it was accepted that no legal rule was to be exempt from change by political power. Finally, constitutional constraints proved to be a very poor substitute of law as a way of limiting sovereign power.

It is easy to understand that law is also a kind of spontaneous order, while legislation is a kind of constructed order. Spontaneous orders can emerge only if the prevailing rules are largely the result of law, and not of legislation. Conversely, no spontaneous order can survive if the 'abstract' rules are replaced by 'commands', which represent the backbone of constructed orders.

The distinction between law and legislation appears to be particularly relevant to the issues of biomedical progress. Law allows for a definition of property rights that better corresponds to the liberal ideal of individual freedom; in accordance with law, decisions are made on the request of one party claiming the recognition and the respect of some specific property right by another party, be it private or public. This means that law does not necessarily give rise to a generalized prohibition, nor does it necessarily create

¹⁰ See Bruno Leoni, *Freedom and the Law*, Van Nostrand, Princeton (NJ) 1961.

generalized rights beyond the will of individuals. Legal rules are limited to the prevention of concrete damage which could be inflicted upon individuals. They do not correspond to the will of any legislator.

Let me illustrate this point with the case of human enhancement, be it obtained by genetic technologies or by other medical means.

According to bioconservatives, this biomedical practice should be forbidden –even before it actually becomes available– because the very fact that some individuals would become physically or mentally improved would make all other people worse-off. One might argue that from a liberal point of view this makes little sense.

Indeed, we believe that everybody profits from the fact that in a society there are individuals who are more gifted than others. Liberalism refuses any idea that material equality among men, be it natural or imposed, is conducive to a more free and prosperous society. What is needed is that more gifted people –for example, physically stronger people– not be allowed to use their power to violate rights legitimately owned by other individuals.

In the case of human enhancement, therefore, any legal prohibition should only come from a claim made by specific individuals with regards to other specific individuals. The burden of proof would lie with the claimants.

The same logic holds for almost all other issues relating to biomedical progress, like fertilization techniques or end-of-life decisions. This is not to say that the logic of law makes legislation and government intervention unnecessary: it is within the scope of public power to guarantee the respect of the rights of those people that do not have the capacity to do so themselves. In the case of in vitro fertilization, for example, a generalized prohibition of practices that would deliberately design babies with a handicap (as in the notorious –and much-liked by bioconservatives– case of a deaf couple who asked for a deaf baby) should be considered legitimate. Contrary to what is said by bioconservatives, the issue here has nothing to do with the 'inhumanity' of in vitro fertilization. It has to do with the principle of doing others no harm. Purposely making a baby be born deaf is just the same as rendering a newborn deaf by perforating his eardrum.

Liberals assume that the future is open, and that it crucially depends upon the free actions of humans. For this reason, they refuse the very idea that a single entity, be it a 'benevolent dictator' or a political majority, be given the authority or the power to plan the biological future of our society according to their specific views. Fears about the problems that biomedical progress might –and certainly will– bring about are no justification for this post-modern form of centralized social planning. *Central planning to not change the present state of affairs is still central planning.*

Bioconservatives make a fundamental error in thinking, today, that they have sufficient knowledge for predicting what will happen in a remote future, or for predicting that the problems they foresee and fear will remain unsolvable. They are wrong, finally, to argue for rationally limiting freedom. There is much hubris in the bioconservative position, as nobody can claim to own today the moral and scientific knowledge that will be available to future generations.

No less important, bioconservatives seem to ignore the time dimension of biomedical progress. Changes in reproductive practices, human enhancement, gene therapies

and reproductive cloning will necessarily generate large-scale effects only progressively and over a long span of time. This means that a free society will have the possibility to evaluate their actual consequences on people's lives as well as their actual consequences for a viable social order. Should some biomedical practices and technologies prove to be detrimental to human rights and well-being in the future, then they can be restricted or even prohibited on a rational, trial-and-error basis at that time.

To offer an example: one can legitimately stand against human reproductive cloning for principled, non-consequentialist moral reasons. But it is completely irrational to justify the banning of reproductive cloning with hypothetical reasoning about how awful a society made up of cloned people would be. Should reproductive cloning produce those negative consequences (for individuals and the societal order) imagined by bio-conservatives, then, in a free society, cloning would stop. Individuals (who care about themselves and their offspring) would freely choose not to clone people, or a legal prohibition would be introduced, grounded on the opinion of the *maior et sanior pars* of the people –well before the population ended up being composed entirely of clones. The historical dimension of society and of human life matters here. As Hume reminds us, generations of human beings are not the same as generations of flies, which come into existence and then vanish altogether.

LIBERALISM AND SCIENCE

The history of liberalism, from the end of 'medieval particularism' to today, is often seen as the history of political institutions, moral theory, law and economics. This view is fundamentally correct, given that liberalism is a theory of individual liberty and of the rules and institutions that make it possible. However, it overlooks one aspect of liberalism that was fundamental to its origins; this aspect underwent a long period of decline during the twentieth century, but has once again become crucial due to an extraordinary acceleration in the pace of biomedical scientific progress today.

This overlooked aspect is the close link between liberalism and the natural sciences. "Man can know, then he can be free": this statement is one of the basic foundations on which liberalism was built. The birth of modern science did not just mean a change in knowledge of the natural world, but also a change in knowledge of the moral world, and even a change in the way humans perceived themselves. Indeed, scientific inquiry – and particularly experimental research– assigned a key role to individual liberty in the inquiry into nature and the pursuit of truth. The notions of individual liberty and of political institutions based on the principle of the limitation of sovereign power (constitutionalism) found their counterparts in the idea of freedom to research: such freedom regards every man and every scientific community, free to express theoretical and experimental results, without censorship by any external authority, whether political or moral in nature. It is true to say that "la liberté des modernes," to quote Benjamin Constant's famous expression, flowed from the scientific revolution and modern science no less than from constitutionalism and market economics.

Well into the nineteenth century, particularly in the Anglo-Saxon countries, it was clear that 'freedom to know' was an essential part of individual liberty; that liberal politi-

cal institutions were closely connected with free scientific institutions, and that scientific progress was a key component of progress in a free market economy.

The situation began to change midway through that century, notably in continental Europe, for two fundamental reasons. The first was that socialist and positivistic thought –especially French; its greatest exponent was Henri de Saint-Simon –considered modern science and the technology that it enabled as a tool for social and economic planning. Proponents adhered to principles that eliminated individual freedom and made the building of a so-called 'rational' order their key goal. The second reason was that a wave of political and economic nationalism swept through much of continental Europe. The state thus began intervening in scientific research and its associated institutions –including universities and academies– with the aim of turning them into instruments of political and military dominance, and putting them to the service of a protectionist and Colbertian view of economics.

This situation was bolstered during the twentieth century with the birth of communist regimes on the one hand, and fascist totalitarian regimes on the other; here, scientific research was subjected to state control and tied to state objectives. In particular, the pairing of science with economic planning was one of the key elements in communist ideology. In the Western world too, science increasingly came to be seen as a large-scale organization (the so-called 'Big Science') within which the freedom of the individual scientist was secondary –and even counterproductive– to the ultimate goals. Science was transformed from a 'spontaneous order' to a 'constructed order'. This shift found a psychological complement in the political approach of a great deal of scientists, including that most famous of twentieth-century scientists, Albert Einstein. Society could no longer be run according to the political principles of 'old' liberalism and market economics, but rather had to be organized according to the so-called 'rational' principles derived by the sciences. In other words, society had to be reorganized along socialist lines.

This state of affairs ensured that contemporary liberal theory saw something essentially foreign and even dangerous in the natural sciences and their ideology; the latter invariably seemed to provide arguments for restricting individual liberty in favor of a planned order. This approach had its justifications, even on a sociological level. Indeed, if we look at the history of the most important liberal society, the Mont Pelerin Society, it is easy to see that few –albeit eminent– scientists have been members¹¹.

I believe that the problems posed by biomedical progress provide an extraordinary opportunity for liberalism to reaffirm its historically progressive (and not conservative) stance. This is our chance to affirm its perfect complementarity (and not its separateness or neutrality) as regards the principles which guide scientific research and the ideal of scientific and technological progress¹².

¹¹ The eminent biochemist and biologist Bruce Ames is one of them.

¹² A strong argument in favor of the complementarity between science and liberalism is the fact that the closer a country's political institutions are to the liberal ideal, the higher the level of the science it produces and the more spontaneous the control its citizens enjoy over its direction and results. Totalitarian regimes –as in communist countries– suffer from lower-level science and a misuse of that science against its people's rights.

Indeed, while the scientific and technological revolution of the modern era has enabled humans to radically alter their natural environment, the biological and medical revolution has opened up the possibility of changing—at least partially—human nature itself. It should come as no surprise that this 'second scientific revolution' brings with it expectations and fears as great as those which accompanied the birth of science and of the modern world. And such expectations and fears are only bound to grow as the general public gradually comes to understand the extent to which new scientific knowledge might influence the lives of individuals and their society as a whole.

From a liberal point of view, it is essential that the new scientific revolution not be accompanied by the same ideological approach that obstructed the development of a scientific vision in the modern era, and that obstructed the rise of liberalism. Liberalism considers the advancement of knowledge to be, in itself, a fundamental ethical value. The pursuit of truth is one of the most profoundly human characteristics and does not sit well with the existence of higher authorities that establish what one is permitted and not permitted to know. The desire to know about one's biological make-up, down to the last building-blocks, is not hubris but rather a manifestation of that thirst for knowledge which drives human beings to learn about nature.

Liberalism sees the advancement of knowledge as a fundamental source of human progress, since it is especially through knowledge—coupled with free political and economic institutions—that human suffering is reduced. In reality, every unnecessary limitation imposed on scientific research for fear of what it might mean for humanity only perpetuates the suffering that could be alleviated thereby.

Nor can an appeal be made to the fact that biomedical progress would be 'unnatural'. The boundary between what must be considered 'natural' and what must not largely depends on man's values and decisions. And nothing is more bound by culture than ideas about what constitutes nature. The moment biomedical technologies broaden the horizon of what is feasibly possible, the criteria for determining what is permitted and what is not can in no way depend on a purported distinction between what is natural and what is not. The criteria can only stem from clear principles that are rationally grounded on the basis of how they succeed in directing human action to the benefit of all humanity.

While it is true that humans have moral sentiments that have taken root over time, and that these should be respected because they play a fundamental role in social relations, it is no less true that moral intuitions and rules are constantly evolving. As Popper has taught us, we have to follow a *rational theory of tradition*, while conservatives invariably make traditions prevail over rationality. Intellectual as well as moral traditions should be praised insofar as they embody some objective and true knowledge about man and society.

Liberalism considers the 'pretence of knowledge' as one of the fundamental mistakes in the constructivist view of society. The pretence to know more than we know, and then to substitute consciously deliberated planning to the spontaneous order, totally replacing the rules inherited from cultural evolution, has led to the 'fatal conceit' of twentieth century totalitarianisms. However, it should be made clear that our awareness of the limits of our knowledge about nature and society has nothing to do with a belief that we should deliberately pose limits to the advancement of that knowledge.

This latter would be a form of superstition no less than that represented by the 'pre-tence of knowledge'.

CONCLUSION

The issue of biomedical progress is the first great intellectual and political question to present itself following the demise of socialist ideology. I believe that this represents a great opportunity for liberalism. Indeed, liberalism –both on a theoretical and a political level– is no longer in the state it was in for more than a century and a half; that is, liberalism no longer has to align itself with a conservative worldview in order to oppose rising socialism –seen, justifiably, as the greatest danger to freedom. To use an historical analogy, we might say that we have returned to a time when debate was between the Whig and the Tory –the golden age of liberalism.

Let me conclude with two wonderful quotations from Hayek: “That progress may be faster than we like, and that we might be better able to digest it if it were slower, I will not deny. But, unfortunately, progress cannot be dosed [...] To pretend to know the desirable direction of progress seems to me to be the extreme of hubris. Guided progress would be no progress”¹³. And: “*Man is not and never will be the master of his own fate: his very reason always progresses by leading him into the unknown and unforeseen where he learns new things*”¹⁴. In this view lies liberalism’s endorsement of biomedical progress.

¹³ Friedrich A. Hayek, *Law, Legislation and Liberty*, cit., vol. 3, p. 169.

¹⁴ *Ibidem*, p. 176.