

Paper Title: Cloning and “Playing God”: New elements in the dialogue science-religion

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Abstract:

Cloning, as well as bioethical problems, is one of the most distinctive themes in the confluence between science and religion. In fact, as is often asserted, cloning science plays a role that in many aspects recalls the ways of creation by God: man “plays God”. Of course, cloning science becomes a transformative place of nature and man, “improving” on its way the bio- difference towards life whose parameters are not “given” by man with creation, but established by him through standards of “amelioration”. But “who” does establish these standards of amelioration in order to say what *kind* of man is better? “Who” does establish the right human stature? It isn’t to be neglected that the concept of amelioration is a matter of “subjective” opinion. Besides, the non therapeutic amelioration opens the way to the building of the perfect man. The building of better men than others shatters the principle of equality among human beings.

Who can control the risks for future generations? Worries about the biological and social effects of cloning have been raised, especially in the field of evolution of the species and genetic differences between human beings and ecosystem. Sexual reproduction, with its causal results guarantees a biological adaptability that little by little could be lost if many copies of a genome are cloned. It’s the fear for unforeseeable effects in the biological table of the genes, especially in the context of nuclear transplantations where million copies could exist, theoretically, produced by only one person. Is that possible at the moment? No, but with the duplication by separation of blastomere, it is, and of course by the nuclear transplantation, even if this kind of experiment on human beings hasn’t been made public yet. It isn’t to be neglected that mistakes in the laboratory are possible which could give rise to irreversible damage on human nature. Besides the damage on genetic human difference, damages on zoological ecosystem are possible, so it’s necessary to watch also over animal cloning.

Some scholars talk about lawful ways to cloning both for scientific reasons and for religious ones. In fact, in the Christian view man, who is created by God, has been placed as careful, creative and faithful administrator of the goods God has entrusted him with. His duty in the world should be carrying on God’s work, through an evolution which goes on according to directions given by man through science. Man shares the prerogative of the Lord Creator, as co-creator and procreator. Christian anthropology indicates to these scholars a “dynamic” image of man and his duty in history.

Biography:

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Paper:

Introduction

Cloning theme, as generally all the problems of the bioethics, is among the most distinctive themes of confluence between science and religion. In fact, as often asserted, science plays in cloning a role which, for many aspects, recalls the ways of creation by God: "man plays God". Of course, in cloning, science becomes transformative place of nature and man, "improving" in its own way the biodiversity towards a life quality whose parameters are not "given" to man with the creation, but are established by him through standards of "*amelioration*".

Some scholars talk about right ways to cloning as for scientific as for religious reasons. In fact, in Christian view man is who, created by God, was put as careful, creative and faithful administrator of goods God has entrusted to him. His task in the world would be carrying on the work of God, through an evolution that goes on according to the directions man follows through science. Man shares the prerogative of Lord creator, as co-creator and pro-creator. Christian anthropology would show to these scholars a "dynamic" image of man and his task in the history.

The news "cloning" between science and business

Cloning concept, as socially concerned and reported by mass media, recalls instead the fantastic vision of Aldous Huxley *The brave new world* (1932)¹, where mass-production of human individuals all alike, fecundated in laboratory, and working as automata in service of the State are described.

After the publication of this book, picturesque science fictional descriptions of human clones became subject of discussions. In his book Huxley describes future societies where, who continue to reproduce sexually and through the gestation in an uterus, are called "Savages" and forced to live in particular ghettos; "civilized" people are, instead those who come to life through insemination. Special laboratories provide the right conditions for the multiplication of embryos by cloning. Birth involves simple "pouring off" of test-tubes in a farm centre. But Huxley didn't use the word cloning.

Today the scientific news talk about cloning more and more, what is really happening? Something very important for man's future and his life style. In fact, from cloning of insulin, very useful for the treatment of diabetes we passed to the cloning of

¹A. HUXLEY, *Brave New World*, Chatto and Windus, London 1932.

interferon for the treatment of some dangerous hepatitis, to clones of cells, tissues, transgenic animals with some compatible organs with man and therefore useful for transplantation, not to mention the cloning for the mass-production of new artificial food and meats transformed always for a commercial purpose². About Dolly we already know much and since that day we have known that the same experiment could be applied also to man.

Of course, most news on cloning are instrumentalized by *business* and by Stock Exchange quotations. Medicine itself is seen today as an excellent market, able not only to bring down economy of families, but also to make fall down the political agreements when it is a matter of budget or financial laws where the main word is health. Medicine and health's care today is a place where a real and strong "undertaking competition" is revealed, not only among firms, but also among political planning of sanitary projects and system of national governments. Every sanitary reform is however studied as a *business*, to such a point that ethic of business became a fundamental part and in some case able to sink the medical ethic.

The case of cloning of Scottish sheep Dolly underlines how the market matter is important. Maybe the question of the cloning today, is a kind of philosophical matter before being a matter of business ethic. It seems to be widely supported also for the great economic and undertaking interests being in the assisted reproduction; it is enough to see how much this reproductive method spread also in these sterility cases where it isn't medically indicated. Today primary ethic interest of medicine is the market and profit interest. So, for bioethics of new millennium it is necessary to ask bioethical questions not as medical-biological or philosophical questions, but as marketing questions.

The market is, in many ways, an utilitarian dream. Every valuable preference is measured in dollars. Every private question (often created by advertising) creates incentives to provide the required service according to the principle that for marginal costs there are marginal entries. Advertising which has promoted the assisted reproduction, for example, has catapulted the clinics that for this kind of reproduction, make business for thousands millions of dollars, and always in a progressive economic growing. In the private market, private interests are predominant; those who have money can buy services as fickle sellers. Sellers have the primary reason to get profits, from the moment that the ideology of market is that of the maximizing of profit.

Infertility of couple and reasons for cloning

Today the research on embryos is allowed in some countries and on some conditions, with abnormal or also normal embryos but in every case within the limit of 14-16 days from the fertilization. This limit, as we know, is referred to the time when the primitive stria is formed in the embryo, which is believed to mark irreversibly the individuality of an embryo. After this time the experimentation on embryos can't be pursued. Some of these countries, however, have already emanated normative against the experimentation that uses the cloning of embryos.

In front of this manifold request of embryos, also cloned, the main problem of the experimental clinical research raises: every experimentation (so also on embryos) has to be effected only for "therapeutic" purposes. In fact the primary principle of clinical experimentation is that the structuralization of experimental protocols is allowed only for therapeutic purposes. Consequently, universal attention, today refers to the question of fetal "no therapeutic" experimentation. In the case of cloning the question is: is ethically

²A detailed report in R. SATOLLI – F. TERRAGNI, *La clonazione e il suo doppio*, Garzanti, 1998.

correct the mass-production, through human cloning, with the only purpose of development of scientific research or amelioration of life quality of others (this is the case of the sacrifice of a twin cloned for genetic diagnosis for the benefit of former embryos)? Besides, in the experimentation field it's inevitable that the production of these clones – just at the end of protocol – will take to the elimination of those ones considered not suitable or numerically in excess (it's the case of the destruction of embryos in excess in the United Kingdom).

However, as the public opinion as the scientific community are more and more persuaded that cloning simply *isn't necessary*. Thirty years ago the biologist Joshua Lederberg speculated on the fanciful chances of cloning, able to change totally a business sector, bearing a group of identical twins of certain business personality³. We talked about the mass production of possible masses of slaves genetically inferior or of duplication of those considered monsters as Hitler. But today the question "why cloning?" is not the same as in the '70s or '80s a rhetorical question: it is concretely practical. It is especially in order to favor those couples that have lowest chances of production of embryos to be transferred in the fertilization in vitro.

Specialists in the field of human reproduction are interested in the technology of cloning of embryos, because actually techniques commonly used in the treatment of sterility are still widely without success. National statistics indicate that only 15% of women that submit themselves to the fertilization in vitro succeeded to have a baby. In the cases of couples that can't produce more than one embryo to be transferred in the uterus, the percentage go down to 7%. With so low percentages of success, every development of science seems to be welcome, especially when a new technology has already been applied with certainness in a wide number of animals. Therefore, Cohen e Tomkin affirmed, "according to us, morality of duplication of a human embryo through separation of blastomeres wouldn't be on doubt, as there are no doubt on the morality of natural twins and no discussion about twins' right to existence. The real matter is if technology really promotes the percentages of success of reproductive technologies. As the duplication of embryos already works well with the animals, it's also possible that it works for fertilization in vitro with human being"⁴.

The first candidates that receive duplicated embryos could be those patients that use the fertilization in vitro, that can't produce more than one or two embryos to be transferred in uterus. Today these couples make up the 20% of those who submit to assisted reproduction. With the duplication of embryos, chances of success of pregnancy would improve for these patients of 10%, even if the chance that two or more identical twins be born improves. However they are low statistics, so that benefits for population of patients with fertility problems would be very limited. This scarcity of success percentage would be welcome for those couples that can't produce a sufficient number of embryos for fertilization in vitro. It has to be noticed also that duplication of embryos complication that generally are associated to natural twin homozygote couldn't occur.

We have known for a long that percentages of pregnancy in vitro fertilization increase as the number of embryos transferred increases. However, we have to remember that the increase of number of pregnancy is possible when the number of embryos transferred which have an heterogeneous genetic heritage increases, that is when an embryo is genetically unique. The increase of the survival of an embryo is concerned with the "good" genetic composition as opposite to a "bad" genetic composition. Now if the

³J. LEDERBERG, *Unpredictable variety still rules human reproduction*, in «Washington Post» 30th September 1967, p.23.

⁴J. COHEN - G. TOMKIN, *The Science, Fiction, and reality of embryo cloning*, in "Kennedy Institute of Ethics Journal" 4(1994)3, pp.193-203, p.198.

genetic heterogeneity is the key of amelioration of per cent results of pregnancies, it isn't likely that the genetic homogeneity (that is in the cloned identical embryos), will improve the situation. Therefore, where we knew that cloning by separation of blastomeres could be of great help, it wasn't at all: truth is just the opposite, that is the identical twins don't favor the success of fertilization in vitro. So the couples that have few chance to produce embryos are just disadvantaged. However it's rather clear that only few embryos, obtained by the separation of blastomeres, will be of good quality. So, two embryos of lower quality, rather than one, won't be of great help.

Malformation and the damage on biodiversity

Malformation

Reactions, anxieties and apprehensions on life are from more parts. It's necessary to specify that these anxieties are actually not justified, because this isn't likely for the methods of cloning have very limited statistic chances. In fact, after fertilization, embryonic cells keep their total potentiality through two or three divisions. According the actual comprehension, this allows to get a maximum number of four viable embryos. Although another separation of blastomeres can be effected, it, probably, wouldn't produce viable embryos because the total potentiality would be lost. In fact, at fertilization cells begins to separate without chance to go "back" as separated in different embryos; because in every separation of blastomeres such a form of cell account is kept.

Besides, the possibility to get viable results by resulted embryos by cloning in terms of births is very limited. The same technology previously applied to animals has showed that percentage of births from transferring of a single embryo is about 20 % in the best laboratories. So though 15 embryos weren't obtained in good health, duplicated in a single embryo (this isn't actually possible at all) and they weren't be transferred as single in 15 different uterus, the possible number of expectations of birth wouldn't be higher than three⁵.

There is also another worry that a bigger proportion of malformations for congenital disease would verify in children conceived with the use of embryonic cloning. Though this matter can't be known properly until these methods aren't widely experimented, experience of the same proceedings with animals suggests that worry isn't groundless. Not only, experience of twenty years of fertilization in vitro has showed how this apprehension is real. A published report of April 1966 in the review "Hastings Centre Report", that considers many other reports, stressed that in these two decades many children with serious diseases were born, deficit e malformations (for examples spina bifida, heart malformations, etc.)⁶.

Three kinds of damage that children can suffer with the technology of fertilization in vitro are, now, distinguished: a) "devastating damages ", they give so much sufferings that living is often considered worse than not living; b) "serious damages", that is physical and mental defects with considerable pain and suffering; c) "substantial damages", that is damages concerned different kind of problems⁷.

In each case, admitting that first experiments of cloning of embryos with patients with single embryos will succeed, this success would have likely to be transferred in the

⁵Cfr. *Ibidem*, pp.193-203.

⁶ Report is in "Hastings Center Report" 26(1996)2, 19-27, signed by Cynthia B. Cohen. With bibliography on other reports.

⁷Tripartition of this kind of damage refers to J.A. ROBERTSON, *Children of choice: Freedom and the new reproductive technologies*, Princeton University Press 1994, pp.75-76.

other methods of fertilization in vitro. Though half of these methods, using duplicated embryos, was positive, the standard number of ovule needed for the production of embryos will be highly reduced. It would become easier the use of ordinary menstrual cycle, rather than medicines for the induction of ovulation, to produce a sufficient number of embryos for fertilization. With the within reach perspective of a considerable simplification of the steps of assisted reproduction, and with the increase of percentage of success and the progressive reduction of risks for the patients, "it seems at least almost immoral for some scientists of the field of these technologies not to proceed with experiments of duplication of embryos for clinical human use in the laboratories for the artificial reproduction"⁸.

Gynecologists and biologists are very worried for the use of nuclear transplantation for the production of multiple embryos. Their apprehensions are, mostly, concerned with reports not verified about many little calves produced with nuclear transplantation have a birth weight increased, this is a sign of some problems concerned with these method. However, as little calves grow up these problems are seemed to disappear, letting the animals apparently normal. What these scientists can have neglected is that it's not common to have a large quantity in the farming of animals in birth weight, instead the statistics on human beings show that birth weight has already changed enough. So a growing in the birth weight couldn't be necessary a problem. A second matter is that the animal farmers have no much success when they apply the technology of nuclear transplantation. It's the same with who work in the field of fertilization in vitro⁹.

The damage of biodiversity

Worries on biological and social effects of cloning were raised, especially in the field of evolution of species and genetic diversity among human beings and in the ecosystem¹⁰. The sexual reproduction, with its casual results guarantees a biological adaptability that little by little could be lost if many copies of a genome are cloned¹¹. It's the fear of unforeseeable effects in the biological picture of the genes, especially in the context of nuclear transplantations where millions of copies could be, theoretically, produced by a single person. Is it possible today? No, of course, with the duplication by separation of blastomeres, of course yes, with the nuclear transplantation, also if this kind of experiment on human being isn't public yet. Then we haven't to neglect that mistakes in the laboratory are always possible that would take to the raise of some irreversible damages on human nature¹².

In each case, beyond the damage on the genetic human diversity, damages could be created on the zoological ecosystem. For this it would be necessary to watch over the animal cloning¹³, which is effected for various reasons: a) mass production of common

⁸J. COHEN - G. TOMKIN, *The Science, Fiction, and reality of embryo cloning*, 200.

⁹*Ibidem*, pp.200-201.

¹⁰COMMITTEE ON ASSESSING GENETIC RISKS - INSTITUTE OF MEDICINE, *Assessing genetic risks: Implications for health and social policy*, National Academy Press, Washington, DC 1994.

¹¹L. EISENBERG, *The outcome as cause: Predestination and human cloning*, in "Journal of Medicine and Philosophy" 1(1976)322-331, 322; T. TANNISJO, *Should We Change the Human Genome?*, in "Theoretical Medicine" 14(1993)3, pp.231-247.

¹²Cfr. NATIONAL ADVISORY BOARD ON ETHICS IN REPRODUCTION [UNITED STATES], *Report on human cloning through embryo splitting: An amber light*, in "Kennedy Institute of Ethics Journal" 4(1994)3, pp.251-282. Already in '70s P. Ramsey had showed the possibility of these risks of laboratory (*Shall we clone a man?*, in K. Vaux (Ed.), *Who shall live? Medicine, technology, ethics*, Fortress Press, Philadelphia 1970, pp.78-113, 110).

¹³On technical aspects: R.N. HUGHES, *A functional biology of clonal animals*, Chapman and Hall, London-New York 1989.

animals for experimentation; b) mass production of transgenic animals, to be used for production of organs that have to be transplanted into man or for clinical experimentation of medicines with animals that are already produced with particular pathologies; c) production of animals for the bioculture, that is the food production; d) for the production of pets; e) for the industrial production of furs.

As there is general convergence among bioethicists in the recognizing of an ethic statute for animals, so they are right sources for oneself, not for man, and there are moral duties towards animals, and cloning of animals can be accepted only at some terms: a) production of animals for experimentation (production of organs, medicines, etc.); b) "limited" production, also not to compromise the *evolution* of zoological ecosystem; c) production of proteins and other substances from animals, that can be useful for therapeutic purposes on man; d) unbecomingness of the duplication of animals for set feed with business purposes, because degrading economic elements inevitably are put in and on long time consequences on human health are not known rightly

Anthropological reflections

The horror for cloning, due to the image of it given by novels and science fiction movies refers, particularly, not only to the duplication of horrible and absurd personalities, but especially to the loss of its own individual uniqueness and unrepeatableness. The main question we have to answer to is: is the uniqueness of a person (that is his own value and dignity) assigned by the uniqueness of his experience of his genes or by the uniqueness of his personal experience/history? The question can be intended also in another way: what is an *individual personality*? Our position is that a biological individuality isn't the personal individuality, because the person is more than his biological reality¹⁴. Man is his biological body, but isn't only his body. In this sense, biological duplication isn't a problem, but possible interferences on personality of conscience of a human being, that is one self conscience of his own dignity and on social conscience assigned by others¹⁵.

Three well-known ethicists have raised worries on the challenge to the *individual uniqueness*¹⁶. Artur Caplan: "One of things that we consider more precious about ourselves is our individuality [...]. You start to be sorry of it when deliberately start to make copies of something; you reduce its value "¹⁷. Daniel Callahan: "I think everyone has the right to his own genetic, individual identity [...]. I think this [experiment] could just violate this right "¹⁸. Albert Jonsen: "What do we mean when we talk about human identity? [...] How much of my identity does consist in having a genome from my parents, that nobody else just have? [...] We aren't just our genes, but we are the whole collection of our experiences"¹⁹.

The worry of Caplan is that cloning make our genetic uniqueness lose, and this means a loss of dignity because the fact "isn't natural" (as in the case, instead of identical twins), but it is a fruit of a deliberated production of identical copies of something.

¹⁴ Cfr. G. RUSSO, *La clonazione di soggetti umani. Uno studio bioetico per sperimentatori e animatori della società*, Coop. S. Tom., Messina 1997.

¹⁵ On this argument see document of Pontifical Academy for Life, *Reflections in cloning*, June 25, 1997.

¹⁶R. MACKLIN, *Splitting embryos on the slippery slope: Ethics and public policy*, in "Kennedy Institute of Ethics Journal" 4(1994)3, pp.209-225.

¹⁷Quoted from G. KOLATA, *Cloning human embryos: Debate erupts over ethics*, in "New York Times", oct. 26, 1993, pp. A1, C3, p. C3. By the same author: *Cloni. Da Dolly all'uomo?*, Raffaello Cortina, Milano 1998.

¹⁸Quoted from P. ELMER-DEWITT, *Cloning: Where do we draw the line?*, in "Time" 142(1993)19, pp.64-70, 68.

¹⁹Quoted by D. GELMAN - K. SPRINGEN, *How will the clone feel?*, in "Newsweek", nov. 8, 1993, n.19, pp.65-66, p.66.

Therefore, if the duplication occurred in nature, there wouldn't be reduction of individual value of person, but if it was deliberately it would require a reduction of this value²⁰.

What does it mean "reduction of value" and whose is this individual reduction of value? Macklin wondered if an individual is supposed to feel reduced in his value if he is produced by separation of blastomeres rather than another way? Or others will consider them less worthy? Therefore the hypothesis that who is cloned loses his own uniqueness and individual value would be without meaning. Is uniqueness of a person assigned by the uniqueness of his genes or by the uniqueness of his experience? It's necessary as well to distinguish between *individual* uniqueness and *genetic* uniqueness. Therefore although a person is produced by embryonic duplication, if he hasn't his genetic uniqueness, he will have, however, his individual uniqueness, as in the case of identical twins. Always according to Macklin, a "right" to genetic uniqueness can't exist; this right would be violated by the same nature in the identical twins²¹. We have to notice, however, there isn't the genetic uniqueness that in the natural identical twins for effect of natural casualty, instead in the cloning the duplication is intentionally deliberated.

It's true that it's necessary to distinguish between "individual" uniqueness and "genetic" uniqueness, but not only the social relationships and our experience structure a personality. A first and fundamental contribution comes from one's own genetic uniqueness. Indeed, the history of the violation of human right shows just that this genetic uniqueness can safeguard the structuration of one's own social relationships and also one's own personal dignity. The unlikeness of cloned ones as regards to not cloned ones could create considerable problems of social acknowledgment of people. Man usually feels in a heavy way about environmental and cultural influences. Therefore we have to wonder: in what social position are genetically identical deliberately cloned people going to be? Besides, person, psychologically, wouldn't be able to recognize himself, as lack of social acknowledgement would be added to the lack of individual genetic uniqueness.

This why also on the base of precise anthropological reasons, also the National Committee for Bioethics has condemned human cloning²²: a) for the aims it can come to existence, that is: a) because it is an attempt to the biological uniqueness of the human subject, produced by cloning. In fact, this uniqueness, even if doesn't exhaust the personal individuality (individuality is as genetic as environmental expression), is the ground of that dignity and those rights of singles, whose defense was acknowledged also by European Parliament as absolute priority in front of every social or others' interest; a") because it injures the right of every human being to his own dignity, as much as the right of self-determination can be put on crisis. This crisis can come from the fear of man, produced by cloning, to be biologically or culturally influenced by genetic constitution of grown-up individual from one of his cells the cloning has been effected; b) for the ways it can shows, when these ways involve manipulation and/or commercialization of human body or of its parts, or mixture of genes of different kinds in order to produce chimeras, particularly when this occurs for the sake of gain.

²⁰In this sense, in 1987 also Congregation for the Doctrine of the Faith affirmed: " *Also, attempts or hypotheses for obtaining a human being without any connection with sexuality through "twin fission", cloning or parthenogenesis are to be considered contrary to the moral law, since they are in opposition to the dignity both of human procreation and of the conjugal union.* " (*Donum vitae*, I part, n. 6).

²¹Cfr. R. MACKLIN, *Splitting embryos*, 216; J.A. ROBERTSON, *The question of human cloning*, in "Hastings Center Report" 24(1994)2, 6-14; R.J. TRENT, *Cloning*, in "Bailliere's Clinical Obstetrics and Gynecology" 5(1991)3, pp.659-673.

²²*La clonazione come problema etico*, 21 marzo 1997, in "Anime e Corpi"35(1997)191, pp.415-420.

It's necessary to wonder, as report Naber²³ does, what effect can the cloning concretely have on the meaning of personal identity of the cloned oneself? Can the baby or, subsequently, a cloned human being be in the social consideration? What kind of respect or racial damage can be assigned to him about his individual uniqueness or his humanity? Will the clone be respected as a person with a value and that is a aim (never a means) for himself? Could the reproduction become more and more commercialized, technologized, politicized, inhumanized?²⁴.

The indications of psychology, sociology and anthropology ask some philosophical questions about personal humanity and identity. A definition, personally very accepted in the western society comes from Boezio, philosopher of the fifth century: a person is an individual substance of rational nature. Consequently philosophers and theologians have considered the meaning of individuality and rationality, and most part of arguments have stressed the fact that an individual is unique and unrepeatable component of our specie²⁵. The chance of cloning is, therefore a challenge to this metaphysical notion.

Lawrence Tribe, a strong champion of personal identity, has identified cloning as a technology "would spoil the real and deep meaning of human kind"²⁶. He has considered that the impact on human individual and network of human and social relationships could be of real damage. Moreover, Tribe has expressed his worries about a cloned person whom can be "denied his meaning of uniqueness, which can make a person feel adulterated, who can be subjected to many pressures by society and Government to conform themselves to the pre-existent mould"²⁷.

Worry that cloning could lead to the alienation of our human kind was enounced by the well-known theologian Richard McCormick. In 1978 he had observed that at a certain extent we have to consider the techniques of assisted reproduction, as the cloning, in terms of our fundamental conviction about what be human person means²⁸. In 1994, after the experiment of Hall and Stillman, it was asked "what will be the effect of manipulation of the pre-embryo on personal and social attitudes towards human life in general? There will be another erosion of our respect [...]. If these pre-embryos can be manipulated, will we spread these practices to the embryos and fetus?"²⁹. Just for this reason, the physician and thinker Leon Kass adds, what will be violated little by little is "nature of man self"³⁰.

Therefore, referring to the philosophical criticisms of fertilization in vitro, cloning adds those ones referring to the loss of respect of person in general, as the respect for his

²³ NABER is a group of professionals in the field of medicine, reproductive science, bioethics, theology and law who attend to ethical and social aspects of new reproductive technologies. Structuration occurred by American College of Obstetricians and Gynaecologist and American Fertility Society, though now it is a separated and independent entity of these groups. However, it is a private and sponsored organization with private funds (this is affirmed in their same report, "Naber Report", published in "Kennedy Institute of Ethics Journal" 4(1994)3, 251-282, in particular, 266).

²⁴ In quoted report, above all at pp. 255-259.

²⁵ Cfr. D. PARFIT, *Reasons and persons*, Oxford University Press, Oxford 1984; C. KAHN, *Can we achieve immortality?: The ethics of cloning and other life-extension technologies*, in "Free Inquiry" 9(1989)2, pp.14-18.

²⁶ Cit. in *The MacNeil/Lehrer Report*, Transcript. Library No. 660, Show No. 3200: 7th April 1978, New York, WNET/13.

²⁷ Quoted by Naber report, 256. On artificial man: O. O'DONOVAN, *Begotten or Made?* Clarendon Press, Oxford 1984.

²⁸ R.A. McCORMICK, *Reproductive technologies: Ethical issues*, in *Encyclopedia of Bioethics*, ed. Reich W.T., vol. 4, Free Press, New York 1978, p. 1462.

²⁹ R.A. McCORMICK, *Blastomere separation: Some concerns*, in "Hastings Center Report" 24(1994)2, pp.14-16.

³⁰ L.R. KASS, *Toward a more natural science: Biology and human affairs*, Free Press, New York 1985, p.77.

own specific individuality, on the basis of the concept that they can be simply replaced³¹. Separation of blastomeres, therefore, would damage the individuality and uniqueness of every human person. So the philosopher Daniel Callahan has declared that creation of identical copies of twins would deprive children of "a precious gift of nature", their identity³². also the psychologist Sidney Callahan has affirmed that a child is a new and unique creation; what is meaningful about casual fusion of genetic heritage of the couple is that "it offers sufficient distance to let to child the chance to be seen as another". Cloning himself, she continues, would be wrong for the deliberate intention and for the inhumanizing effects of denigration of the uniqueness of identity³³.

There would be also the risk of instrumental relationships and of weakening of familiar values. We can't exclude that some parents can give to others one of their own embryos cloned and frozen, which they don't think to use. In this case it would occur that, clones could not only be born in different time, but have different parents. As donation of clones can occur in anonymous way, neither the original cloned one or his parents can know the identity or the place where the cloned twin is. This scenery causes problems like those occurred for the donation of gametes, for example the child's right to know his biological and familiar origins, so this right shatters donor's wish to be anonymous and last parents' wish for privacy. This raises also the problem of the possibility of psychological damages as on original as on clones, who, casually, could know about each other or unexpectedly meet. Above all, in this case the main question on the meaning of family and paternity would be raised. Who are parents of a clone given to another couple, who have offered the clone or the final parents?³⁴.

Cloning open the way to the *amelioration* (eugenic) of man³⁵. However "who" does establish standards to say what "kind" of man is better? "Who" does establish the right stature of human nature? Therefore, according to the American Report *Splicing life* this intention can't be ethically accepted for, at least, four reasons: a) the concept of amelioration is a matter of subjective judgment; b) not therapeutic amelioration opens the way to the building of the perfect man; c) the building of better man shatters the principle of equality among human beings; d) risks for future generations can be controlled³⁶.

Finally, cloning is such a form of violence towards the continue "discovery" of one self. So it's violence which, considerably, compromises one's own freedom and personal history, whose future wouldn't have the characteristic of event anymore, mortifying that sense of "amazement" that is life wisdom as finding of a continue and surprising wonder.

³¹R.F. CHADWICK, *Cloning*, in "Philosophy" 57(1982), pp.201-209.

³²D. CALLAHAN, *Perspective on cloning; A threat to individual uniqueness; An attempt to aid childless couples by engineered conceptions could transform the idea of human identity*, in "Los Angeles Times", 12th November 1993, p.B7.

³³S. CALLAHAN, *Challenge of the new reproductive technologies*, in J.F. Monagle - D.C. Thomasma (Eds.), *Medical ethics: A guide for health professionals*, Aspen Publication, Rockville 1988, pp.26-37, pp.32-33.

³⁴Cfr. report Naber, pp.259-262.

³⁵On the argument J. HABERMAS, *Il futuro della natura umana. I rischi di una genetica liberale*, Einaudi, Torino 2002. Inoltre: J. HARRIS, *Is Gene Therapy a Form of Eugenics?*, in "Bioethics" 7(1993)2-3, pp.178-187; M.O. HYDE - L.E. HYDE, *Cloning and the new genetics*, Enslow Publishers, Hillside 1984.

³⁶PRESIDENT'S COMMISSION FOR THE STUDY OF ETHICAL PROBLEMS IN MEDICINE AND BIOMEDICAL AND BEHAVIORAL RESEARCH, *Splicing life: The social and ethical issues of genetic engineering with human beings*, U.S. Government Printing Office, Washington, DC 1982.

Stem cells and therapeutic cloning

It has to be explained what a “stem cell” of an embryo is. It’s a cell with two main characteristics: the ability to self-renew (that is a reproduction for long time) and to produce highly differentiated cells (nervous, muscular, blood, etc.)³⁷. Research on stem cells can lead to meaningful path in the treatment of neurological and other serious pathologies, also if we don’t know what the consequences on man in a short or long time are (for example the research on mouse has showed a strong incidence of cancer). So the work on cloning level was thought.

Today three ways of therapeutic cloning have been proposed: a) transferring of a nucleus of a cell of a person in a human enucleated ovule; the result is a human embryo to be developed to the stage of blastocyst and from this point to recover cells of internal mass to obtain stem cells; b) transferring of nucleus of a human cell in an animal enucleated ovule (that is using animal’s egg white) to be used as in previous case; c) reprogramming nucleus of a cell into a person fusing it with cytoplasm of stem cells (obtaining “hybrids”), possibility still under study. Today the research is working on the first point.

Why so many problems and discussions on this argument? Because it’s about intervening and cloning embryos that later will be destroyed. Science men and sanitary industry foresee excellent economic and careerist paths³⁸. Why, instead, don’t we invest on stem cells of an adult, as the experimentation is set up and is giving first meaningful results? Nolta’s, Kohn’s, Clarke’s and Frisé’s agree and confirm: stem cells in different adult tissues can be more alike human embryonic cells than thought up to now, and in some cases they have a very similar inventory and show that nervous adult cells have a large ability to develop, and various cellular kinds are potentially fit to be used for transplantation in different diseases (Clarke e Frisé).

Why, then, are researches on therapeutic cloning going on, even if with some check (see Bush’s choice)? Because such a scientific research starts from assumption that embryo engaged in cloning are on blastocyst level of (within 14th-16th day) so they aren’t considered human lives, but simple biological material. As you can see, it involves the matter of identity of human embryo in early phases, matter that has enlivened all the discussion on assisted reproduction and starts from not scientific, but philosophical and ideological assumption (this isn’t correct from men of science, called to stop only on experimental fact). Indeed, human embryo is said “human” only after 14th-16th day, when there are the typical elements, the formation of “primitive stria”, that is the first sketch of cells of brain, and man is man for his brain. This position seems’ to be not correct to us as on a philosophical as scientific point of view. From the first point, it isn’t true man is “man” for his “grey matter”, otherwise there are “men and men”. Besides on a scientific view, it can’t be establish a “phase” to say when an embryo is human life, because the first sketch of neural cells isn’t formed from nothing, it is codified in human genome of embryo since the moment of conception. So it isn’t correct on a scientific view to establish a “phase” from where to start to respect the embryo. For these reasons, as the life of an embryo is a human life from the conception, it can’t be used for the drawing of stem cells (the ablation of internal cellular mass)then eliminated.

³⁷ Pontifical document referring to the argument is: PONTIFICAL ACADEMY FOR LIFE, *Declaration on the production and the scientific and therapeutic use of the human embryonic stem cells*, 25th August 2000.

³⁸ Cfr MARSHALL, *The business of Stem Cells*, in “Science” 2000, 287, pp.1419-1421.