

NATIONAL BIOETHICS ADVISORY COMMISSION

Friday, March 14, 1997  
8:12 a.m.

Watergate Hotel  
Continental Chesapeake Extender Room  
2650 Virginia Avenue, N.W.  
Washington, D.C.

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## P R O C E E D I N G S

WELCOME AND SUMMARY OF PREVIOUS DAY

DR. SHAPIRO: I would like to call our meeting this morning to order. I want to thank everyone for being here, a special word of welcome and gratitude to those speakers that will be addressing us this morning.

As with our panel that we had yesterday, everyone is appearing on very short notice but we are consoled by the fact that all of our speakers have a very long and deep involvement in the subjects that we are covering and we, of course, have chosen them because of the thoughtfulness of what they have had to say over many years.

So while it is short notice for this meeting these are subject matters which they have been addressing for many, many years, and I welcome them and thank them for giving their time to help us out in our, what I call, our 90 day task to deal with an issue which has many, as you all know, many, many ramifications.

Before we turn to our panel this morning I do want to remind the commissioners of the draft outline of our report that I handed out yesterday. I will not repeat all the provisos that I gave you yesterday but it really is important that we engage together not on that particular draft but that it induces you to make suggestions because by early in the week we will have a set of milestones set out, that is what we have to accomplish by what date, in order to meet the deadline of our 90 day request from the President.

In order to achieve that we are going to have to distribute tasks to the commission members. In order to do that in addition to all the work that is going on in the subcommittees and working committees we are going to have to have a map of where we intend to go even though we are not at the stage yet of formulating our final recommendations.

So it is sort of like writing a novel. Yesterday I used the metaphor of parallel processing which is a new technology we are not all used to and this is another one of those applications of that. But I thought that perhaps even a better idea was that we are sort of writing a novel.

It is a useful analogy even though I hope it will not be fiction that we come up with because most novels, those of you who have studied this matter, know really start -- they start somewhere in the beginning and they develop characters one way and then another one, add characters, subtract characters, change characters and finally come out with something which is of some redeeming interest which I hope we will as well.

So we will change our minds many ways and many times as we go through this but nothing can make up for our lack of engagement. We just really have to engage in this and so I really ask you all to get to me your response to the outline, your suggestions for changes. It is -- of course, one possibility is that we will have -- that our report which we must deliver within 90 days which we are tentatively using May 26th, that falls on a Sunday, the

actual 90th day. We may interpret that as the preceding Friday or the following Monday, I do not know. But that will be in front of us. We will certainly have that report done.

It may be followed by further studies and additional details backing up what we have to say but of course that report has to have its own coherence because of the many people that will be reacting to it and I think waiting for it.

So, please, it is only beginning but we will begin with the outline. The only thing I know is there is an infinite number of better outlines than the one I wrote and so all you have to do is find one of them, each of you find one of them, and we'll gradually hone in on that. We will begin assigning writing tasks to the various working groups and charges to them of course at the beginning of next week.

So thank you all very much for your willingness to help us out. I think everyone around this table knows the kind of tasks that we are facing.

We will come back later today and discuss our meeting dates in April by at least an initial scan of the calendars that you all submitted. It may be absolutely impossible to have a two day meeting but it may be possible to have two one-day meetings in April, which in fact may have some advantages over one two-day meeting because it gives us a chance to proceed and the dynamic may actually work better. But we will come back to that after lunch and see what is possible there.

So before we turn to our panel are there any questions from members of the commission?

(No response.)

DR. SHAPIRO: Okay. One final logistical element just for the benefit of our panel. When you speak you press this little button in front of you. This turns red and that means that everyone in our audience can hear you and we very much appreciate it.

Well, we will begin, of course, continuing what we did yesterday. Yesterday we did have our -- what we called our looking at religion based perspectives on this issue. We had, as you all recall, two representatives speaking from the point of view of Protestantism and two from the Roman Catholic perspectives.

I want to repeat again today what I said yesterday, that all of those who we have invited we invite not simply because they represent a particular faith tradition but because of their long time concerns in this area and our respect for what it is that they have to say. And we of course welcome other perspectives from anyone who would like to address the commission in writing. We are open and eager to hear from as many people as possible.

Now let me now turn -- I will just take it in the order that it is here if you do not mind, and that is Dr. Elliot Dorff from the University of Judaism, Los Angeles.

Dr. Dorff, welcome, it is a great pleasure to have you here.

JUDAISMDR. ELLIOT DORFF

DR. DORFF: Good morning. I was on the East Coast before so I am not on Los Angeles time so this is not 5:00 a.m.

What I thought I would do is talk about some of the moral issues involved in cloning but do that very quickly because my guess is that you have heard them from others and then move on to some of the theological issues from a Jewish perspective involved in cloning and then talk about one or two recommendations.

One of the moral issues, of course, is who will be cloned. Will it be the rich and the famous and not necessarily the good? And that would exacerbate some of the socioeconomic divisions within our society. The issue of who will be cloned is also open to economic exploitation. Do you clone ten Michael Jordans in order to be able to, you know, be their agent? And maybe perhaps even without his knowledge or against his will if you happen to brush against him and get a hair or something like that to get the DNA. I mean, all of those kinds of scenarios.

Even if we arrived at some social way of deciding who would be cloned that would be inevitably based upon a particular value system that we had as a society at that time and that particular value system may be very much time bound, something that in later generations we would regret.

Part of the thing that -- part of the blessing of biodiversity is that people of a variety of different sorts through

the ages are able to survive and that would be, I think, an important kind of thing both genetically and also socially.

The second set of moral issues have to do with the results of cloning. If you have good results from cloning that would presumably be based upon a very pragmatic criterion of quality control and predictability and, of course, if you do that then you are using the same kinds of criteria for good results that you use for products on an assembly line and that in many ways, I think, diminishes the sense of sacredness in a human being and it cheapens life.

On the other hand if you get bad results what do you do with them? Do you try to abort them? Do you destroy them? Do they become monsters in, you know, some of the sort of scenarios that you see in movies that will ultimately ruin the ecosystem and come out of our control? I mean, all of these kinds of fantasy -- you know, fantasies that nevertheless are things that I think we need to at least discuss in terms of what we can do with the results that do not turn out to be good, at least those results that we control. So that is a second set of issues having to do with results.

A third set of issues has to do with to what uses will the clones be put? The technology in the Jewish tradition is morally neutral. It gains moral valence depending upon what uses we put to it -- we put it to. So there could be very good uses. The Jewish tradition is very much into medicine. I would say they have virtually a love affair with medicine over the last 2,000 years. So

if it is, indeed -- cloning is put to uses of scientific research to cure diseases, to overcome infertility, those kinds of things I think are morally good.

If they are put to bad uses, though, then it becomes a bad use of a morally neutral technique. For example, in terms of harvesting organs for someone and then destroying the clone. In the case that we had with the couple where they conceived again in order to get bone marrow for their older child, that it was seemed to me morally permissible because they had agreed to begin with to have the child no matter what, whether the child was, indeed, a match or not.

And so, therefore, it seemed to me to be morally permissible to do what they did.

But if you are going to have a clone and destroy it if it does not give you the kinds of -- or once it has given you the organs that you want, that it seems to me would be morally bad. And you get all of the worries about eugenics and of course the Nazi experiments here are sort of in the background. And those are the kinds of fears, I think, that a lot of people have.

Now, of course, the truth of the matter is that the person is only genetically the same. The person is not the same.

Again from the world of literature, The Boys from Brazil is another thing in the background here. But at least there -- I mean it was clear that you could not get a number of new Hitlers simply on the basis of the genetic -- the biological issues. That you needed to actually put the same -- those people -- the clones

into the same kind of environment that Hitler had had in order to have any chance of getting anybody like Hitler.

So then I mean it is -- the eugenics issues are, I think, in the public imagination much worse than they are in fact. But still you have to understand that those -- at least politically those things are in the background.

Going forth on these issues, there are psychological issues that at least raise some questions. If I have a clone and, you know, I got A's in school then I might expect my child to get A's in school and that would put, you know, real pressures on the child beyond those that we put on our children generally. And then psychologists say that you usually have the most trouble with the children -- relating to the children that are most like you. And if you now have a clone you would probably kill your kid literally rather than just metaphorically. So, I mean, there are those kinds of things that I think are at least in the public mind.

What I would like to do is move to the theological issues which I think are things that are -- that you may not have heard as much about. One issue has to do with the human place in the universe. In the Jewish tradition starting with the story of the Garden of Eden we are put into the garden to [Hebrew] to work it and also to preserve it, and those two obligations work in tandem. So we are, indeed, supposed to use the environment for things that will benefit human beings but at the same time we have to preserve the environment. It is that balance that it seems to me that we have to

strike.

We are the -- in the Jewish tradition -- the partner of God in the ongoing act of creation. We are God's agent in providing medical care. So the tradition has not been passive in terms of simply accepting whatever medical cards we have been dealt. It is quite the contrary and rather aggressive in trying to improve a person's medical situation.

The other side of the issue, though, and this is really -- it brings us back to the first principles in Genesis, the other side of the issue is at what point does our mandate to be God's agent cease and do we, indeed, play God? The opposite side of that in religious terms is idolatry. The Tower of Babel story is sort of in the background on the other side of it.

And, you know, in Deuteronomy, Chapter 8, where the essence of idolatry is basically saying that [Hebrew], it is my power and the strength of my hand that has done all of these great things, you know, not only these great things but without any sense of humility before God, without any sense of the limits of human beings.

So what cloning does in many cases is to push the envelope yet further. In other words, to what extent are we, in fact, carrying out our mandate to improve the world and in what sense have we gone over that mandate?

The other side of this, I must say in my own mind, there is a cartoon that was in my U.S. History book in high school

that appeared some time I think in the 1850's when the steam engine had first been invented and you had this picture of the steam engine with steam coming out of it and satan was in the steam and, you know, because it was understood to be basically being in league with the devil to go more than 20 miles an hour.

So, I mean, I think those kinds of senses as to where the envelope is and how we have really gone well beyond what we thought was the proper place is the other -- is part of the issue.

In other words, I think that although we are, indeed, pushing the envelope here as to what our mandated human agency is, it is something we have to be careful about but not ultimately impeded by.

The second sort of theological issue has to do with the fact that cloning really tests who we are. One of the things that makes us -- that gives us a sense of who we are in the sense of the sacredness of who we are is our own uniqueness. [Hebrew] puts it, I think, very starkly when it says that "God's creation is very different from human creation. Human beings create a mold..." And the model is metallurgy. "Human beings create a mold and everything that comes out of that mold is exactly the same."

On the other hand God creates a mold and every person who comes out of that mold because we are created in the image of God, each of us, so everything that comes out of that mold is unique.

And what you are talking about here is somebody who is genetically not unique, who is genetically the same. Now, of course,

what this does though it seems to me is ultimately theologically very healthy because it refocuses our attention to the fact, which is also very clear in the Jewish tradition, that our identity is not simply a function of our body nor simply a function of our minds, or our will, or our emotions, or our soul, that we are integrated human beings and that what makes us unique is the specific combination that makes up each and every one of us.

So ironically given the fact that cloning produces people who are genetically the same but who are different in their own personalities and in their own histories, ironically cloning there is theologically very healthy because it reminds us that we are not reduced to simply who we are as bodies.

The third theological issue has to do with the danger in cloning for self-idolization. In normal sexual reproduction each person involved has to get out of himself or herself in order to be able to make and to have a child and that child is a combination of the two people involved. So that is a certain kind of self limitation involved in normal sexual reproduction.

Part of the -- it seems to me -- theological problem in cloning is that the person is reproduced without having to go outside of himself or herself. And that it seems to me at least has -- poses at least some sort of danger of self-idolization even though it is very clear that the person who ultimately will be produced is not the same because of the environmental and nurture aspects. Nevertheless, the very thought, the very intention of trying to create another you

in a very, very specific way and by yourself, it seems to me, at least has that danger.

Another danger in regard to this is the fact that after it is all said and done Adam and Eve were not allowed to eat of the tree of life. We are not allowed to become immortal. The mythic way basically of saying the fact that we are not immortal.

It seems to me that mortality actually does some very important things for us. It reminds us of our own finitude. It curbs our arrogance and cloning on the other hand it seems to me encourages, at least in the minds of some, some self idolization. It panders to our human grandiosity and I think that pieces of that are important and the mortality that is built into us in that cloning for some people seems to overcome that the mortality is important.

Mortality also reinforces our focus on what is important in life. The Psalmist already had a sense of that [Hebrew] teach us to number our days so that we can attain a heart of wisdom.

The sense that there is a deadline, that there are -- that there is an end to all of this forces us to make good use of our lives and to get a sense of the fact that this is not there forever and that what we really ought to be doing is taking very good care of the time that we have been given and to use that wisely.

It seems to me in conclusion that human cloning should be allowed because it seems to me that once the genie is out of the bottle you cannot really put it back in again and that if you do not -- if we do not allow human cloning under some restrictions that it

will happen anyway without those restrictions. And that the way in which those restrictions can become meaningful are, in part, through government legislation but, in part, also through creating standards within the community of professionals themselves.

Part of the way in which moral restrictions really become meaningful is that people understand not only that it is required by law but that this is part of the ethics in my profession.

I serve on the ethics committees of several hospitals and I am on the institutional review boards of several others, and I must say that I have been overwhelmingly not only surprised but very much reinforced in my belief in medicine by seeing how people who are on these committees take their jobs very seriously.

One of the hospitals in which I serve on the IRB has done a lot of work on AIDS and I must say that in their work in terms of using human beings to the extent that they are used for human subjects as experiments because these people are in their last stages of life, they have to do this or nothing else is available, the care that they take in doing this is really remarkable. So that I think part of the ethics that can come into this entire field can come from legislation.

But another part of it, it seems to me, is there should be -- what should be left to things like -- I mean, to institutions like ethics committees and institutional review boards where it is not only medical people but people from the community who are involved in this.

And it seems to me that clearly we in the United States have to begin to do this in cooperation with people outside the United States because this is not a technology that is going to be restricted to us. It is one that is already alive and well elsewhere in the world and will be even more so in the future so that this is something that we ought to look to and to pursue in international forums.

DR. SHAPIRO: Thank you very much.

We will follow the same pattern that we did yesterday so we will now hear from Dr. Moshe Tendler and then after Dr. Tendler has given his remarks we will go to discussion and questions from members of the commission.

Dr. Tendler?

DR. MOSHE TENDLER

DR. TENDLER: Thank you.

I will present as a professor of Talmudic law rather than where I really earn a living as a teaching biologist who must confess his sins. I have taught such falsehoods over the years as science has decided what was true yesterday is no longer true and I have reached a point now where we have lost our faith in the old textbooks and we do not want to buy textbooks anymore at school. We only use the current journal as our source of information warning the students that it is only good for thirty days.

(Laughter.)

Our story begins, I am referring to the Judeo biblical

heritage, not the Judeo Christian heritage. We diverged early in our lives and we now have different heritages, entirely different views of man's relationship to man and man to God. It begins with a verse in the Bible, a verse in Genesis 1:28, and I did prepare outlines for members of the committee so that you can check up on our references.

"Be fruitful and multiple and fill the earth...", which is the code that everybody knows and they forget the last two words in the verse, "...and master it," [Hebrew].

We have a commandment to master the world. That is a positive commandment. It is one of our mitzos (?), one of our commandments, imperatives, just as it is not to transgress the Sabbath by doing constructive work on the Sabbath. God commanded, "Six days shall ye do your labor," and the six day commandment is tantamount to the commandment of not laboring on the Sabbath.

Hence we have a duty to be constructive in this world. That is, I believe, the real reason why almost all our Talmudists, those who gave us the Talmudic law, were either physicians or astronomers. It was their way of mastering the world that they understood to be constructive.

Man was warned by saying, "Of the trees of the garden ye may eat..." and that is interpreted in our tradition, "...of the trees of the God ye must eat but of the tree of knowledge of good and evil ye shall not eat thereof." Now this knowledge of good and evil has always confused theologians and certainly the laymen. If Adam and Eve did not know of good and evil how could they have sinned?

They knew good and evil. The tree of good and evil is the tree that allows you to think that you can reevaluate, you can set another yardstick for what is good and what is evil.

We are bound by good and evil as given to us by divine imperative. And we know pretty well in most areas what is good and what is evil until cloning came along and now we are not so sure what is good and what is evil.

The duty to behave in this world as if we are masters of it is limited also by the fact that God said he is the master of the world. We have a bit of a conflict there of who is going to be boss. I think it is best understood when you see the versus, God says in Exodus 15:26, "I am thy God, thy healer. All the illnesses that I visited on the Egyptians I shall not visit on you."

And that is followed up immediately by a commandment to man, "[Hebrew] He shall heal. If someone is injured you are responsible to heal him." And the verse that sums it up, "You cannot stand idly by," a verse in Leviticus. Make up your mind, God, are you the healer or am I the healer? You cannot have two doctors of record. Only one of us can get sued.

(Laughter.)

Essentially what we were told was that God is the healer but we have to function under natural law and that term "natural law" is very important for this is a major divergence between ourselves and the Catholic faith. The natural is not good and the unnatural bad. On the contrary, your natural means man's

involvement in the world. Artificiality means man's constructive contribution. That is part of our duty. That is a good if it does not interfere with any prior orders that God set.

The mastery of the biotic world insofar as genetic constancy, I believe is well expressed in the Bible by the emphasis in the story of creation, "And God created the trees to their species, the birds to their species, the fish to their species." It is the species constancy that comes in into the story of creation.

And then there is a very intriguing one and this is part of the value of studying the Talmud while teaching biology. In a verse, Genesis 36:24, they speak about changed personality of Anah.

Anah, who found the wild mules in the desert and the word "found" means invented. It means he was the first one as the Talmud explains to us who crossed a horse and a donkey to produce a mule.

And the Talmud expresses itself in a strange way. Anah was the product of incest. His father raped his mother, that is the grandmother of Anah was raped by the father and produced an Anah. So only someone so produced could do something so evil. You need someone who had some kind of blemish on his soul as it would be in order to do such a terrible thing.

Now what was so terrible with what he did? There is no prohibition in the seven laws which are universal laws for all religions for all people. Nothing says about crossing animals. It is only in the Jewish tradition later on after the Mt. Sinai experience after receiving the Tora of the Mt. Sinai that we were

ordered not to cross breed animals.

But I think it is a -- I will give you a simile or metaphor of a guest invited to your house and you ask them to be comfortable, help themselves, there is cake in the cake box and fruits in the refrigerator, and coffee in the coffee maker, and you wake up in the morning and he does so of course you are pleased. But if he should move your sofa to the other side of the wall because he thought that that is where it really belongs you will not invite him again.

There is a concept of being a guest in someone's house. That comes across clearly in the study of Biblical literature. Sure, God says, "Make yourself comfortable in my world but you are guests in my house, do not act as if you own the place. Don't you rearrange my furniture." And the genetics is a rearranging of the genes in a way that may violate our role as a guest.

But I do not know why we are so perturbed. Man has been given by our society power to do what he darn pleases. It begins with this evil of evils known as the constitutional right of privacy or autonomy. When I was growing up in the field of medical ethics the big "A" was abortion. Then came real autonomy. That pushed abortion off the scene and maybe [Hebrew] abortion is also discussed only in terms of the individual autonomy. Paternalism is a dirty word. Autonomy is in.

The claim to reproductive freedom, including abortion, has given us tremendous, tremendous role as meddlers in God's world,

assistive reproductive technology, IVF, which is matchmaking at its most extreme, two reluctant gametes trying to be pushed together whether they liked it or not, and PGD. We only speak in acronyms now because there is so much to talk about. PGD, that is prenatal genetic diagnosis, which by the way puts our community in a strange predicament ethically speaking. NIH refuses to support embryo biopsy which can determine whether a child will have cystic fibrosis or Tay Sachs. That can't be a singular research.

But it is okay to put the IVF zygote back into the mother, wait until its 16 weeks old, do amniocentesis and then kill it. That is perfectly moral and proper but to remove the cell from an eight cell stage or a four cell stage and check its genetic basis for putting it back in or not, whether it is healthy or not, that somehow violates our sensibility. It is one of those strange things that come out of Washington.

(Laughter.)

Gestational motherhood, ovum transfers, sperm banks, gene therapy, cell sorting, which is the horror of horrors, the perfect child syndrome, we can now take 5 cc or 5 ml of a woman's blood when she is seven to nine weeks pregnant, spin off a fetal cell in the blood, do 191 genetic probes on that cell and decide whether that baby is going to make it or not. I assume that someone will be doing it -- young enough and only wants one child or two and a dog and happiness being defined in America, then you marry off your children and the dog dies.

(Laughter.)

Why not cloning? I think it begins with the fear of man's mastery over man. Man, you have heard us before, and doctors especially are guilty of all the evils that have happened in our generation, Nazi eugenics in the Holocaust was fueled by the scientific fuel of eugenics provided by the medical profession. A study I just saw, a horrible study, they were under the order to go out and kill little babies, split their heads open with machetes when they were hiding in the churches, it was signed by three doctors, three people with M.D. degrees and all trained in America. The ethnic cleansing in Bosnia. That frightens us.

And just the idea that you are doing another -- taking one more step of mastery over man. I think that concerns the public and maybe because it was done on a sheep first and then someone introduced the question of would you do it to man. That really distracts the public because we now are comparing man to sheep. The basic impression it gave was you are going to do something wrong.

But from a religious Judeo background there are two problems that come in. We cannot live well with inversion of generations. What is a clone? A sibling or a child? And in Jewish law generational distinctiveness is quite critical. "Honor thy father and thy mother" does not mean honor thy younger brother. If this clone is a younger brother or sister, he is not a father -- I am not a father. If I am not a father -- in Biblical law if you strike

your father there is a death penalty. It is a capital crime. If you hit your brother maybe it will be a good deed.

(Laughter.)

And then we have, of course, inheritance laws which go with our generational constancy which is being inverted when you play around with cloning.

Then there came a new light which my good friend, Callahan, has pushing lately, the right to one's unique identity. I do not know where that right came from but it came most likely from the same place where the right of privacy came from and it should go back where it came from.

(Laughter.)

What are the real good reasons for doing cloning? You know, there is the Georgetown Mantra which everybody has to know, "Beneficence, maleficence, autonomy and justice." They left out one big one known as sanctity of life but that is because they came from Georgetown and were too conscious of their religious background and they would not put that one in but it belongs there lately as number one.

Now maleficence is a big problem, "To do no evil." I happen to have contact with Neal First (?), who did much of the work on animals, and he told me that many of his cloning due to really what amounts to blastular separations or twinning lead to a high incidence of abnormal births.

And we are very concerned less cloning also bump into

this obstacle. It is one thing to clone an individual, it is another thing to clone an abnormal individual. So many years will have to go by before we have enough data to know. It, therefore, puts a real obstacle right from the beginning. Are you sure you are doing no evil? Are you sure there is no maleficence in what you are doing?

But there are good reasons for doing it I believe. One, I fear from my own work, my own reading, that it will interfere with useful, beneficial genetic research. The rationale I mentioned before of the NIH position against embryo research does seriously interfere with the ability to finally master the cancer cell.

We cannot study the cancer cell without studying the normal development of cells as they reproduce and the only way to do so right now is through embryo research and the Clinton Manifesto was so broad not to refer to cloning alone but to all embryo research. That I believe is unacceptable if we are to maintain our position in this world, namely to master it and to make constructive contributions to the welfare of mankind.

If you want to refer to it in specifics you can remind yourself only a few weeks ago of Mark Hughes, the geneticist that was fired from the NIH for doing some of the nicest work that has been done, namely embryo diagnosis of cystic fibrosis, and he somehow is carrying that evil connotation that he did something wrong. Well, in my opinion he did only things that were very good.

And in Switzerland, that country on high moral ground, as explained by their role in stealing money from the Jews that they

helped kill, the Swiss just have a referendum that will be voted on in the beginning of next year against all genetic research, even animal research, and then according to the last report in Science it will pass according to the straw vote that was taken.

That is what concerns us when we sit here to try to make rules for cloning. When we make rules for cloning we have to be very restricted, specific, so that it does not interfere with embryo research. That it is critical because this is where we are up to, as I say, in our mastery of genetic disease and the mastery of the cancer cell.

In summation we have a really nice problem as voiced in the Talmud, rather in the [Hebrew]. The question was posed, "Is there not a time when you say to the bee neither your honey nor your sting?" Are we prepared to give up the honey of genetic research because we are worried about the sting and there can be a sting? Indeed, cloning requires some very strange decisions on the part of two people.

You do have to reach out to someone else doing cloning and maybe in the most dramatic way you have to ask your wife if you want to clone yourself, you have to ask your wife to give up her genetic contribution to the child. So you have to pull out her nucleus and use the egg envelope and the mitochondria in order to get the thing started if you are going to duplicate the "Hello Dolly" success.

There is that point and then of course there is the

biggest question of all which is I think maybe the nicest summation of our ethical dilemma, the [Hebrew] in Deuteronomy says, "God said to mankind I send you down on earth a sword and a book intertwined," [Hebrew], a very strange language. Not a sword and a book but a sword and a book with the book and the DNA HeLa helix from surrounding the sword. Why that association? Because you do not get a book without a sword. You have no choice. A book or sword. The choice is book and sword, sword unsheathed or sword sheathed. The sword is there. The danger of all our work is [Hebrew] but God gave us the ability through ethical instruction to sheath that sword by surrounding it with the book.

My own vote is that we take the sword and book combination and make sure that the sword does not get unsheathed. That can be done in only one way and I speak as a teacher of many, many decades now. You have to start teaching that stuff in kindergarten. You have to start teaching ethical responsibility and a medical school cannot have a guest lecturer in medical ethics.

A medical school has to have medical ethics as a required course for all the four years, for the two years of residency, and then a requirement in your continuing medical education, not your choice, just sure look up the latest in hematology, the latest in genetics, but every year a person must take a course in medical ethics to remind them of what are the ethical dangers that he faces while he is doing so much good in our society.

Thank you.

DR. SHAPIRO: Thank you very much.

Thank you both very much.

If I could just say one word of logistics, if you could just press the button again once you are through that helps so others will be able to be heard.

Thank you very much. That was very helpful.

Let me turn now to members of the commission who may have some questions.

Jim?

#### DISCUSSION

DR. CHILDRESS: I join Dr. Shapiro in thanking you both very much for your presentations today.

Our guidelines today, Mr. Chair?

DR. SHAPIRO: You can ask a few questions.

DR. CHILDRESS: Okay.

DR. SHAPIRO: You can ask a few questions if you would like.

DR. CHILDRESS: I would like to direct to both of you -

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DR. SHAPIRO: You may ask --

DR. CHILDRESS: Okay. All right.

DR. SHAPIRO: I am getting a lot of heat for that decision yesterday.

DR. CHILDRESS: Okay. Thank you.

There were certain restrictions imposed yesterday on

questioning that have been lifted today.

(Laughter.)

DR. SHAPIRO: Temporarily.

(Laughter.)

DR. SHAPIRO: I do not want this technology to be abused.

(Laughter.)

DR. CHILDRESS: Both of you expressed the view that a ban would be inappropriate but rather allowing the cloning to go forward, human cloning to go forward with certain kinds of restrictions. This first part will be directed to Dr. Dorff. Could you say a bit more about the kinds of restrictions that you think would be appropriate? And then the second part I would love to hear both of you comment on, do you think that the position you have taken, namely restriction rather than ban, is one that you find or would find pretty widely represented among other scholars in Judaism?

DR. DORFF: Well, let me talk to the second question first and then I will go to the first. Yes, because the tradition is not passive in regard to the -- you know, sort of the medical cards that each of us have been dealt. Quite the contrary.

The assumption is that while God is the one who ultimately imposes sin as a punishment, and you get that in the Torah, and that has a long history in the tradition in certain restrictions, and so God imposes sin as a punishment but God also is our healer. So illness and healing are ultimately in God's hands.

At the same time God gives us permission to heal based upon that verse that Dr. Tandler mentioned. God not only gives us permission to heal but according to the tradition God gives us the obligation to heal based upon a verse in Deuteronomy that says that when you find a lost object you need to return it and the Rabbi's reason that if you need to return a lost object then how much the more so do you need to return a person's lost health to that person.

And then later tradition says that that obligation applies not only to the individual physician but to the community as a whole so that the community as a whole has to provide health care.

And that -- my favorite derivation of that is that in the name of [Hebrew] in the 13th Century who bases it on Leviticus 19, "You shall love your neighbor as yourself." The point being that if you would want to get medical care when you needed it you need to be able to provide that for others when they need it.

So, I mean from the point of view of the Jewish tradition this obligation to provide health care is not only the physicians, although first and foremost the physicians by virtue of that person's special training, but also that of the society itself.

So given the fact that -- that is the theological basis for being -- for the Jewish tradition being fairly aggressive in medical care and in medical research, and for this kind of love affair that I was referring to before.

Therefore, it would be, I think, not in character of

the Jewish tradition for us to sort of have a technology that is available and that does have real promise. Not to use it, I think, would not be in contenance with general Jewish theological tradition.

At the same time we do have to preserve the God's world. We are supposed to work the world and also to preserve it. And so, hence, the need for some careful thinking about what kinds of restrictions would be appropriate.

That then brings me to your first question what kinds of restrictions would be appropriate? I think that by law only the most egregious uses of this that we can imagine at this moment ought to be banned by law and those would include things like using the -- using clones for purposes of artificial -- of organ transplant and then -- or of bone marrow transplant and then destroying the clone.

It seems to me that that -- that the clone would be a human being with full rights as a human being and that as a result just in the same sort of way that if you had a child who was conceived naturally you would not have the right to conceive that child and even in utero to use whatever you could from the child and then to abort it. That is just not -- that is not in contenance with Jewish understanding of what is going on in utero let alone let the child be born and then use the organs and then transplant -- you know, and then destroy the child. That would not be permissible. And I think that that needs to be built into law.

I do think also that the use of -- you know, of human cloning without any kind of supervision by -- in other words, by one

individual alone or even by a group of individuals without outside community representatives to oversee this process I think would be dangerous. You need to -- you need to be very careful about people who have vested interest in any given process, having the sole right to decide how the process is going to be used.

Whether that vested interest is economic or whether that vested interest is in gaining fame as the person who found a given cure for X. I mean, I think that those kinds of vested interests need to be -- you know, need to be restricted on the basis of the kinds of works that I was talking about, either ethics committees or institutional review boards that have broad representation.

And, you know, from a community at large so that -- so that those kinds of moral concerns that people -- other people outside that process who do not have a vested interest in a given thing might be brought to bear. Those are the kinds of things, I think, that come to mind.

DR. SHAPIRO: Yes, Dr. Tandler?

DR. TENDLER: First, as far as our pluralism within even the orthodox Jewish tradition you should note that two days Rabbi Lau (?), the Chief Rabbi of Israel, came out with a blanket prohibition against any research in cloning. I assume since he is coming to America soon that he will then change his mind because he will most likely get a chance to read what cloning means.

(Laughter.)

DR. TENDLER: The -- I think the question of restrictions is important. We have a model already in genetic research. Gene therapy which is clean and good the way anyone would interpret man's beneficence, a consensus grew up in the field. No germ plasm genetic intervention. It would seem stupid to treat a cystic fibrosis child without rather treating the parents and making a genetic change in their germ plasm so all their children will now no longer be subject to that disease. Yet the consensus was we will not start up with the germ plasm because there you are modifying man. I think that model has to hold here too.

There must be a restriction which says I focus in on the therapy of an individual. As I was quoted in the press, "Show me a young man who is sterile whose family was wiped out in the Holocaust and he is the last of a genetic line I would certainly clone him."

Show me someone who is the egoistic model of those who would get themselves frozen and sent to San Francisco or some place to await their thawing because the world could not possibly exist without them, if there was cloning for any other reason but resolving a personal problem called sickness -- sterility in Biblical terminology is an illness. Rachel said to Jacob, "Get me child or else I die." And we interpret infertility as an illness. Our duty to respond to that. Cloning may be a methodology to do so.

There would be the most limited reasons for doing an actual cloning but I am not so concerned with the cloning. I am more

concerned with President Clinton's interpretation of the danger of cloning with his broad -- the use of a shotgun approach at prohibiting all embryo research. There is where the problem comes in. Cloning must have a way out for the individual. It cannot be a blanket prohibition.

But most importantly the work that leads to cloning must go on with cloning itself prohibited except in the most restrictive circumstances. The same as we decided in genetic intervention for therapy where we do not touch the germ plasm and work only with the soma so you are dealing with a single individual and not with society.

DR. SHAPIRO: Thank you.

Alta?

PROF. CHARO: One of the discussions that goes on among both theologians and secular philosophers is how one evaluates --

DR. SHAPIRO: Excuse me. Do you want to just turn your microphone off? Thank you.

PROF. CHARO: -- is how one evaluates the rightness or wrongness of a particular act. In the context of cloning there are two kinds of arguments that have been posed against it in the context of "Dolly" type cloning in humans. One is the effect it has on the resulting children, that there is a harm to having begun your life as part of a cloning experiment in terms of your psychological health or your genetic genealogical bewilderment and such phrases.

A second line of argumentation goes to the motivations

of the people who engage in the cloning experiment. Usually complaints about the narcissism of it or the degree to which they were conceived -- they were having a child for the purpose of aiding another such as another child.

I am curious how it is in the Jewish tradition that one evaluates the rightness and wrongness of acts. Is it primarily based on the effects that they have on people once the act has been concluded in a more kind of utilitarian fashion or is it based on the underlying motivation so that even an act that has only benign effects on other parties could nonetheless be condemned because its motivations were unacceptable.

DR. DORFF: My doctorate is an ethical theory from Columbia so I mean I understand what you are talking about but you have to understand that the Jewish tradition comes long before the classical utilitarians or Kant or, you know, the people who would take both ends of that spectrum.

So that if you are thinking about the relationship between action and motivation in terms of the moral evaluation of an act what you need to understand is that the Jewish tradition really comes from a very different place. I mean, I will apply your categories in just a moment but it starts out by the assumption that the way that you define the goodness or badness of an act depends upon how it either fits or does not fit God's commandments to us. Okay.

So it comes from -- and then the question is, well, if

you intend to fulfill God's command but you fail to do that, the Talmud actually says that if that happens then God is sufficiently good to ascribe to you the merit as if you had fulfilled the commandment even though you did not succeed in doing it. On the other hand if you intend to do something wrong but you fail to do it you do not get the punishment for doing the wrong thing.

So that there is no direct one to one relationship between motivation and moral evaluation because if it is -- you know, God being gracious and loving will give you the merit of doing something good but even if you fail to do it right if you intend to it but on the other hand will not punish you if you fail to the right -- do the wrong thing.

And the -- and if you ask what about, you know, the effects of action, well to some extent that also is involved, I think, in an Jewish evaluation of it because clearly when you -- in all of the discussion, the Jewish discussion about various kinds of issues in medical ethics the risk/benefit calculus is very much in -- very much in evidence. And so clearly the way in which -- I mean, especially in issues at the end of life where if you look at contemporary Jewish treatments of this from all of the various movements in Judaism that issue is very much at stake.

So consequently when I think that the answer -- the simple answer to your question is that the goodness and badness of an act is evaluated on the basis of the way to which -- you know, the way in which -- the extent to which it fits the commandments of God

as interpreted through Jewish law. And the -- but the -- in the categories of Western Philosophy that involves a combination of motivation end result and the exact way in which that is evaluated in each case depends upon how the combination of motivation and result fits into this structure of commandments.

And by the way the other thing that I need to mention is that I specifically talked about moral pieces of this question and then theological pieces because you have to understand that Jewish law is not simply a legal system that works as a legal system. It is a religious legal system. In other words, it is a system that works within a religious context. And that context has an ongoing effect on a lot of the decisions that are made in the legal system.

So that Dr. Tendler was talking about the issues of autonomy. The reason why autonomy is not really a part of Jewish law or at least has very limited use within Jewish law is because the theology of Judaism starts with us as being God's creatures and under God's commandments. So basically it is not a matter of what I choose to do as an individual. It is a matter of what I am commanded to do. We start out with duties rather than rights in the Jewish tradition.

DR. SHAPIRO: Yes, Dr. Tendler?

DR. TENDLER: The point that was made specifically by the questioner, what will be the impact on the children of someone who was cloned? If you remember that question concerned the ethicists in the Lucy Brown case in the first test-tube baby so-

called. There would have been no issue if they kept newspapers away.

I think the issue there was confidentiality, not IVF.

There is no reason for this to become an issue except in parental expectation. Well, that has been a problem in society all along. We do terrible things to our children. We clone them to the best of our ability. We want them to be exactly like we are because we are the most perfect of individuals and we want the best for our children. Consequently the idea that a cloned individual may have the same genetic background, the genetic basis upon which behavior they will impact, I do not think that is a real concern as been mentioned in the writings on the cloning issue. That is not a concern.

Especially in a family tradition, I come from a family where rabbinic scholarship goes back on both sides for many, many generations. I assumed that all my sons -- I assumed all my sons would be ordained, not one is a rabbi but all were ordained because they were cloned. We had no choice. We beat the hell out of them otherwise.

(Laughter.)

DR. SHAPIRO: Well, thank you. Your reference to the fact that this has been a problem all along reminds me of a phrase in a novel I just read last week where one woman is speaking to another about their children and one of them says, "Well, finally you know my children have been a disappointment to me," to which the other responded, "That is what they are for."

(Laughter.)

DR. SHAPIRO: Dr. Lo?

DR. LO: I want to thank both Dr. Dorff and Dr. Tandler and encourage them and the other speakers today if they could to provide us with a written copy of their remarks so we could study them more intensively. There is a lot there for us to learn from.

I have a question for Dr. Tandler about what happens -- what comes before "A" in the alphabet. You mentioned the sanctity of life as being sort of a primary moral principle. Could you say a little more about in what sense cloning would or would not violate the sanctity of life?

DR. TENDLER: I would not think cloning would impact significantly on the sanctity of life. I think the sanctity of life issue comes more in the problems of care of the critically ill where our government, as defined in the Supreme Court in the Kruzan (?) case, in the Quinlan case, have neglected the concept of sanctity of life, that a patient who is in persistent vegetative state is no longer entitled to the protection of our society because they cannot pay their taxes. The idea that life per se is a value is where sanctity of life comes in.

I think in the cloning issue the sanctity of life issue may very well be supportive of allowing for cloning. As an example I gave you the sanctity of life includes the needs for immortality, the need for someone to have an heir or descendent. And that sad situation in which -- and you hark back to that terrible time in

humanity during the Holocaust where not people were killed but genetic lines were wiped out, the sanctity of life would encourage us to use cloning if only for one individual, to use only the great skills of the geneticists and biologists to prevent the loss of a genetic line.

One little fish, a darter fish, held back a dam and now clover bird laid an egg on a beach and that is preventing the use of that beach for construction purposes. We respect genetic lines of birds and the fish, we have to respect genetic lines of man also.

DR. SHAPIRO: Thank you.

Eric?

DR. CASSELL: Dr. Tandler, I listen always with the ear of somebody who is supposed to decide with my fellow commissioners on what goes into that document at the end, what should we say. I hear your recommendation is that you feel that cloning should be -- should go ahead but you imbed it in it should go ahead by educated people. And that is an interesting idea, not that we should educate people, that is a pretty good idea, but that in fact the two go hand in hand, the recommendations go hand in hand.

It is true we are a culture where to drive a car you really need two people, one person who knows the machinery, the biologist and so forth, and then somebody else who knows where we are going and that is the IRB and, you know, like that, and that has distinct limitations.

So am I hearing you correctly when you say that the

thing goes hand in hand with education? The recommendation goes hand in hand so that whatever is done is done with wisdom?

DR. TENDLER: That point is accurate as you expressed it but I think it does not -- you do not finish your sentence. What I also said was that cloning goes hand in hand with education up until the cloning of a human being. What I particularly emphasized was that all the work that leads to cloning must go on with education. The cloning itself must have additional restrictions. Right now abortion in America for frivolous reasons has the approval of our Supreme Court.

A woman does not have to tell you why she wants to abort. She can decide to abort because she found out that the baby was of the wrong sex, that she already has one of those and does not want another one of them, and even though most gynecologists and obstetricians would be horror stricken to do that but they are not required to ask questions and do not tell and do not ask has been part of our governmental policy for some time.

Consequently we do not have to tell anybody why I want to clone. I say not true. When you want to clone a human being you have to tell. You have to tell me why you want to clone.

In IVF a good clinic sends the patient first to a psychologist to make sure that the mental state is fine. We do that for ovum transfer. There are times when we ask you what are your motives? Why do you want to do it? Cloning should have very strict restrictions as to motivation as well. But we are not separating the

two. We are talking about cloning the final product, "Hello Dolly," that is not what our concern is. Our concern is all the many, many, many steps that yield -- no one thinks anyone can clone a human being right now. There is no way to do it. How many tries did they have in Scotland? 131, 129 trials and one -- 277. One viable organism came out of that. We know we are not ready to do that to a human being.

But what is happening is that, number one, we are indeed concerned about haphazard cloning of individuals for wrong motives. But I must say that I am more concerned with what has become kind of an antiintellectual and antiscientific bias that has crept into society and it is growing not diminishing, and it is due to many things. The basic right -- to put reference to it, it is the loss of faith in man, especially a loss of faith in scientists as led by the medical profession, and the HMOs have not helped.

Consequently we have to worry about the backlash and what is going to be now put into cement by laws. It is hard to change laws once they get in. And President Clinton is asking now for hard and fast rules. I think he has already committed the sin of sins of interfering with God's instructions to mankind. God wants us to go ahead and master the natural world for the benefit of mankind.

And the law as now interpreted is severely interfering with it so that private money -- I learned to my dismay that in West Virginia where they did all the nice work on Tay Sachs in biopsy,

embryo biopsy work had to be done on private money. They could not get any NIH funds for that because it was interfering with a moratorium, a general expression of negativism that crept into the NIH funding programs.

I think we are responsible to see that is corrected and at the same time to make sure that cloning does not become a routine procedure once it is indeed mastered and we know maybe we will know the breaks too. We cannot count on anything. Look at how fast this thing happened.

If you recall the George Washington team that first did splitting, not cloning even, they called it cloning but it was blastular splitting and it made the papers as cloning. The horror stories that came out of that. The truth is that this -- we can really have a real problem that we can do right now, is it right and proper to clone at the embryo stage?

The good breakthrough, the scientific breakthrough to take a mature cell and turn on its DNA and make it behave as if it were a gamete, but the gametes we know are totipotential. We know we can take a four cell stage and make four of them, four identical twins. We can make eight maybe and make eight identical twins. Now that we can do right now. That needs regulation. Should we do that now?

So give me a couple in their late 40s, the woman is in her late 40s and she has been infertile and now finally they have got one fertile egg, I am sorry, they have got one egg to be fertilized,

should we allow twinning, which is really embryo cloning? Should we allow her to do it? I would consider it surely. She has a last chance. She has a chance to have two children. Should it be allowed for a young woman? No. But in America you would get the 14th Amendment clobbering you on the head. You have got to treat everybody equal whether you are 20 years old or 50 years old it is all the same. Here is where a commission comes in and says, "No, it is not the same. We have ethical societal concerns and we want that understood by society."

DR. SHAPIRO: Thank you very much.

Yes, David?

DR. COX: A quick question. Actually it is following up on Dr. Charo's question to Dr. Dorff but with an answer from Dr. Tandler.

DR. DORFF: I prefer the other way.

DR. COX: Yes, I know. No, no, no.

(Laughter.)

DR. COX: You should be so lucky.

(Laughter.)

DR. COX: So here is the way -- here it goes: Okay. So -- and it has to do with this focus on medicine and treating people. So that it goes like this: If we have people who are infertile and it is a mitzvah to help them and your intention is to help, okay, but what in fact happens is that because of private or individual economic or personal motivation, is that in helping -- in

an attempt to help those few people many people end up being hurt. Okay. They are being hurt because they do not get the child that they want or that they become economically disadvantaged through the process. So that you have a few people that are, in fact, helped. But the end result is through your good intentions, is more people are harmed than hurt.

Now what Dr. Dorff said was that so God says you did your best, all right. From a practical point of view, though, a lot of people are hurt. So theologically you did okay but from a practical point of view it is not so good.

So, Dr. Tandler, what do we do in that kind of a situation? How do we adjudicate that?

DR. TENDLER: We have that concern in Jewish law. It is known in the rabbinic profession as it is okay but do not tell them [Hebrew], meaning the law says it is perfectly permissible but don't you dare rule that way because I am afraid of the societal consequences. Sure, that is why you people are sitting here. That is the commission. You have to take that into account. No doubt about it. We are prepared to give up the honey because we fear the sting. You just have to figure out how much honey you are giving up and how imminent is the sting.

DR. COX: But I guess the question in this then is that does one have regulations and laws against that, okay, or how do you, okay, I do not understand how you implement.

DR. TENDLER: In Jewish law decisions are very often

one on one. One individual goes to one guide or rabbi who is trained in that field, in that area, and he would receive instruction on what he should do. The rabbi takes into account what he should or should not tell them based upon his discussion with his colleagues, prior literature in the field and so on and so forth.

In America law expresses the will of the people. It has nothing to do with ethics and morals. Abortion was illegal, immoral, you could not get elected as a dog catcher if you were pro-abortion and now you cannot get elected as dog catcher if you are pro-choice -- if you are not pro-choice. Society flip flops.

We can use society as a test for morality but is it a test for legality, and consequently I fear the absence of law even though I know very well that law does not necessarily reflect the moral conscience of society. But anarchy may even be worse. That is where -- these are the evaluations now. We live by law in America. A law should not be confused with ethics and morals. But most likely legislation per se does have an educative function in our society.

DR. DORFF: Could I -- two things if I may. One is that -- I do not want you to misconstrue what I said before. In order to -- the principle that I invoked, that I quoted to you, assumes that your motivation was good to begin with. But in order to have your motivation be good in the first place it has to take into account those consequences that you can at least foresee. So if you can foresee that there are going to be a lot of negative consequences to what you are doing even if you intend something good in this

particular case that does not work.

DR. COX: No, I simplified that.

DR. DORFF: Right. Okay. The other thing is that I have to say that I have a different view as to the nature of law and morality in America than Dr. Tandler does. I mean, although I -- I mean, I think one of the really exciting things about America is that we are a pluralistic society that has very different views of morality and that consequently while the law may not be my particular view of morality I think it does reflect the fact that on issues, for example, like abortion Americans really have very different moral senses of that.

Now that then means that from my perspective where you have serious moral dispute about what the status of abortion, for example, is that the government really should stay out of it and then it is my duty as a rabbi to tell my community what the Jewish tradition says about it. The fact that it is permitted does not mean that it is required in American law. And what that then means from my perspective is that I then have the duty to instruct my own people as to what our particular view is. This is Jefferson all over again.

DR. SHAPIRO: Thank you.

One final question. Tom?

DR. MURRAY: Thanks, Harold.

Thank you very much to both of you for coming today. Once again it is a very rich and interesting discussion.

I was taken by many things both of you have said but I

am going to focus on something that Dr. Dorff said and at one point I recall you really made the distinction between working God's world and preserving God's world. How is it that one knows the difference when you are facing a situation where you are working God's world and when you know you are facing a situation when you should be preserving it? You have given us some examples but I am wondering how does -- in the [Hebrew] tradition how does one discover or analyze which of those interactions with the world you are having?

DR. DORFF: Very delicately. Seriously the way that that happens is -- well, first of all I should say that until very recently a lot of the ecological concerns that we have were simply not -- were not in the cards. I mean we did not -- human beings were not able to do nearly the kinds of things that we can now do to the environment and that we do, do to the environment than we did before.

Even so there are precedence in Jewish law about air pollution and water pollution and the like that go, you know, back to the Talmud at least and where there is a real sense of the fact that -- you know, the fact -- you know, that you need to be aware of the effects that you are having on other people's property including God's ultimately.

Now what that means is that when you are trying to balance those two obligations of working the world and yet preserving it, it seems to me that you have the duty on the one hand not to simply sit passively by, in which case, you know, you are preserving

the world -- at least by hypothesis preserving the world but not working it because then you are not -- you are not fulfilling one piece of that.

But on the other hand when you are working the world you have the obligation to take care that you preserve it to the extent that, you know, you can. That is not just a pragmatic desirable -- something pragmatically desirable as it is in American secular thought. That is a divine mandate.

So what that means is that in a case like cloning that you are talking about, what you have to do very carefully is to try to assess what dangers you can foresee at the moment, how you can make the structure in which cloning would take place flexible enough to recognize -- to recognize dangers that you could not recognize at this stage. So that is what I mean -- that is why I am suggesting some kind of ongoing, you know, institutional review boards or ethics committees to continue to look at this because no person at this stage in life can foresee everything in the future.

So that, I mean, I think what you need is some kind of a structure where ongoing assessment of risks and dangers can be made and can then be responded to. I think that that is basically the best you can do. After it is all said and done we are not omniscient and not expect it to be omniscient in the Jewish tradition.

We are not God in that way but we do have the responsibility to assess things to the best of our abilities and then to provide people who come after us the structure, the legal

structure to do the same sort of thing so that we can do our best to preserve the world while we work it.

DR. SHAPIRO: Thank you.

One last response.

DR. TENDLER: The verse that Dr. Dorff referred to, [Hebrew], to work on [Hebrew], the word [Hebrew] always means study and hence it means preserve. To work the world and to study it to understand what you are accomplishing, what you are doing right and what you are doing wrong. Whenever the word to observe occurs it always means to study.

Therefore, the verse properly understood is, "I put you in my world to work the world but not blindly like an animal pulling a plow but to study your actions before and after." That is the only way you can work the world.

DR. SHAPIRO: Thank you very much.

I know there are other commissioners who have questions but we do want to get on to our next panelists.

And let me once again thank both of you. I hope you will stay for as long as your schedules allow. You are certainly welcome to be with us as much as possible. Thank you very much for your very thoughtful remarks.

Let's turn now to Dr. Aziz Sachedina if I have pronounced that correctly. If not, I apologize.

Welcome. It is marvelous to have you with us today, thank you, from the university.

ISLAMDR. AZIZ SACHEDINA

DR. SACHEDINA: Let me begin by thanking Dr. Harold Shapiro, the chair of the National Bioethics Advisory Commission, for the invitation to speak with you today. Although I am not officially representing the Suni or the Shiite communities I believe I can fairly convey the commission the gratitude of the entire Islam community of North America for your interest in Islamic perspectives on the ethical issues raised by the prospect of cloning human beings.

It is perhaps the first time that Islam appears at this forum alongside its other Hebronic sister faiths, Judaism and Christianity, to participate in the ethical deliberations and voice its concerns connected with human life and reproduction.

I very much hope that this new beginning in recognizing Judeo-Christian-Islamic partnership in searching for meaningful ways to prevent abuse of modern biomedical technology to produce a consensus over the legal and ethical ways to further the main goal of Hebronic Covenant for Humanity, namely justice and equity in interpersonal human relations.

I want to present Islamic views about cloning with a necessary caution. In the absence of a central institution resembling the Vatican, theoretical ethical opinions in the matters of the [Arabic], the religious law of Muslims, tend to suggest plurality based on independent research and interpretation of legal

scholars in the community. Although ethical issues associated with assisted reproductive technologies such as in vitro fertilization has been dealt with in some detail by Muslim jurists belonging to the major five legal rights, four Suni and one Shiite school, to my knowledge the subject of possible human cloning has not yet been discussed.

The facts about cloning are just now emerging. In light of our better understanding of the facts regarding cloning both to embryo splitting as well as nuclear transplantation and the impact it could have upon the way Muslims conceive of human life and its purposes, it is reasonable to expect revisions in the ethical and legal assessment of these experiments among the scholars of the [Arabic].

What I will try to do today is to summarize theological, ethical and legal dimensions of the issues associated with cloning in Islam with dual attention to the possible differences in the interpretation between the Suni and the Shiite religions. The Suni are 80 percent of the Muslim population and the Shiite form about 20 percent. In the North American situation they are almost 50/50 but around the world that is the ratio.

Let us begin with theological dimension presented in the teachings of the Koran, the scripture of the Muslims. And if there is any room -- and see if there is any room for human intervention in workings of nature associated with reproduction.

In Chapter 23, verse 12-13, we read, "Recreated

[Arabic] made of an extraction of clay, then beset him a drop in a safe lodging, then we created of the drop a clot, then we created of the clot a tissue, then we created of the tissue bones, then we covered the bones in flesh. Thereafter we produced it as another creature. So blessed be God the best of creators," plural form, creators.

Muslim commentators have drawn some important conclusions from this and other passages that describe the development of embryo to a full human person. First, human creation is part of the divine will that determines the embryonic journey to a human creature.

Second, it suggests that the life is possible at the latest stage in biological development of the embryo when God says, "Thereafter we produced him as another creature."

Third, it raises questions whether the fetus should be accorded status of a legal person once it lodges in the uterus in the earliest stages.

Fourth, it allows for the possible distinction between a biological and moral person because of the silence of the Koran over when ensoulment occurs in the process. A majority of the Suni and some Shiite scholars make a distinction between two stages of pregnancy divided by the end of the fourth month, that is 120 days, when according to some traditions ascribed to the Prophet Muhammad ensoulment takes place. On the other hand a majority of the Shiite and some Suni scholars have exercised caution in making such a

distinction because they regard the embryo in the pre-ensoulment stages as alive and its eradication a sin.

The classical formulations based on the Koran and the tradition provide no universally accepted definition of the term "embryo" with which we are concerned in our deliberations today. Nor do these two foundation sources of the [Arabic], that is the Koran and the tradition, lend themselves to recognize the modern biological data about the beginning of life from the moment of impregnation.

A tenable conclusion derived bi-directionally in interpreters of the above cited verse of the Koran suggests that as participants in the act of creating with God, God being the best of the creators, human beings can actively engage in furthering the overall state of humanity by intervening in the works of nature, including the early stages of embryonic development to include human health. Nevertheless, the Koran takes into account the problem of human organs. It takes the form of rejection of God's frequent reminders to humanity that God's inevitable laws are dominant in nature and human beings cannot willfully create unless God, the Lord of all beings, wills.

The will of God in the Koran has often been interpreted as the processes of nature uninterfered by human action. Hence in Islam human manipulation of genes made possible by technical intervention in the early stages of life in order to improve the health of the fetus or cloning in the meaning of embryo splitting for the purpose of improving the chances of fertility for a married

couple is regarded as an act of faith and the ultimate will of God as the giver of all life.

Let's go to the ethical dimension. As we move on to understand the ethical issues as regards cloning, at the center of debate in Islam is going to be the question of the ways in which cloning might affect interhuman relationships. In large measures Muslim concerns in this connection resonate the concerns raised by Paul Ramsey about the social role of parenting and nurturing interpersonal relations. Islam regards interpersonal relationships as fundamental to human religious life. In fact, the Prophet Muhammad is reported to have said that 9/10th of religion constitutes interhuman relationship whereas only 1/10th is God-human relationship.

Since the George Washington University Medical Center success in duplicating genetically defective human embryos by blastomere separation in 1993 Muslims have raised questions about manipulation of human embryos beyond IVF implantation in terms of their impact upon the fundamental relationship between men and women and the life giving aspects of spousal relations that culminate in parental love and concern for their offspring.

The Koran declares sex pairing to be a universal law in all things. I am citing Chapter 51:49 in the Koran. Muslim focus at the debate on genetic replication is concerned with moral issues related to the possibility of technologically created incidental relationships without requiring spiritual and moral connection

between a man and a woman in such embryonic manipulation.

Can human advancement in biotechnically created relationships jeopardize the very foundation of human community, namely a religiously and morally regulated spousal and parent-child relationship under the laws of God. Hence the more intricate issues associated with embryo preservation and experimentation have received less emphasis in these ethical deliberations by Muslims. To be sure since the therapeutic uses of cloning and IVF appears as an aid to fertility strictly within the bounds of marriage, both monogamous and polygamous according to Islamic law, Muslims have little problem in endorsing that technology.

The opinions from the Suni and the Shiite scholars studied for this presentation today indicate that there would be almost unanimity in Islamic rulings on therapeutic uses of cloning as long as the lineage of the child remains religiously unblemished. Besides the relationship issue in the world dominated by multinational corporations Muslims like other people around the globe do not treat technology as amoral. No human action is possible without intention and will.

In light of the manipulation engineering for eugenics in the recent history it is reasonable for the Muslims like the Christians and the Jews to feel political abuse with the reproduction technology to cloning. With its emphasis on spiritual equality Islam has refused to accord to validity to any claims of superiority of one people over the other. The only claim to nobility in the Koran stems

from being God-fearing.

It is obvious that ethically, cloning ethically, cloning for purposes other than therapeutic lays enormously grave responsibility on humans in terms of genetic improvement of quality of human life, the authority that can be make these decisions with necessary foresight and wisdom, and the criteria that can be used in evaluating the risks and the benefits of such interventions.

Let me turn now to the legal dimension. In Islam all the religious, ethical and legal dimensions are interrelated. It is important to understand the legal aspects of cloning the Muslim [Arabic] would evaluate carefully in their legal reasoning to deduce the judicial decisions on this subject. This is [Arabic]. The [Arabic] are expected to evoke two fundamental principles of [Arabic] and public interest [Arabic] to furnish a religious basis for independent legal decisions about the subject.

These two principles function as supplemental procedures to derive roots that can be applied to formulate new decisions and override the strict ledger of law. In addition, three religious [Arabic] principles or rules applied to resolve ethical dilemma and derive judgments related to bioethical issues are (1) protection against distrust and constriction [Arabic]; (2) refraining from causing harm and loss to one's self and the others [Arabic], this resembles our non-maleficence and beneficence; and (3) averting causes of corruption has precedence over bringing about benefit. So before one thinks about bringing about benefit one should consider

the causes of corruption, [Arabic].

It is obvious that in light of the limited knowledge that we have about who would be harmed by cloning or whose rights would be violated Muslim legal rulings are bound to reflect a cautious and prohibitive attitude to the cloning beyond treatment of infertility or assessment of genetic or other abnormalities in the embryo prior to implantation.

Whereas recent breakthroughs in cloning provides unique opportunity to the scientists to furthering the secrets of God's creation it also carries with it grave and unprecedented risks. Nevertheless, since we do not will unless God wills, according to Koran, can this breakthrough in cloning be regarded as part of the Divine willing to afford humankind yet another opportunity for moral training and maturity.

The Koran seems to be suggesting that embryo splitting is just that opportunity for our overall maturity as members of the global community under God.

Thank you.

DR. SHAPIRO: Thank you very much for your remarks.

I will turn now to members of the commission who may have some questions.

Do any members of the commission have questions about this?

Jim?

DISCUSSION

DR. CHILDRESS: Thank you very much, Aziz. I really appreciate those remarks.

Let me -- I raised a question that Bernie has raised with others, if you have a copy of your paper that you could share with us that would be very helpful too. A lot was packed into it and it would be helpful to read it.

Using Western secular language which you invoked at one point of beneficence and non-maleficence, if I understood then your third consideration that basically we would give priority to averting harm over trying to produce benefits. I guess I would wonder given your comments sort of how serious and how probable do the harms have to be before you would say maybe we ought to ban, that is actually in effect for some reflections now in a pluralistic society for purposes of a recommendation that this sort of panel might make.

DR. SACHEDINA: I think central to the harms that Islam would be considering as very fundamental would be how it is going to have an impact on human relationships regarding the relationship of the child to the parents and the genealogical problems as much as problems of inheritance which is a very central issue in Islamic legal tort.

In other words, how would it impact? How would the harms relate to the injustices created in the society as far as interpersonal human relationships are concerned? Because Islam would avoid subjective evaluation of the harm and would really look at the objective evaluation which would be objectified (?) in terms of

interpersonal human relationships and interpersonal injustices.

DR. SHAPIRO: Thank you.

Tom?

DR. MURRAY: Thank you very much, Dr. Sachedina.

Among the many very interesting things you said this morning one phrase in particular struck me and I wondered if I could ask you to say a bit more about it and I will give you a context. If I noted correctly you spoke about that cloning for therapeutic purposes as you understood Islam may be acceptable so long as there is no religious blemish on the lineage. Did I have that correct?

I would guess I would like to know a bit more about that and the second part to the question is this may not be on the same point but one thing we have learned over the past day-and-a-half with more certainty than we knew before is that there are quite a number of potential risks in cloning, that is risk to the organism being cloned in terms of possibilities of some genetic mutation being incorporated into the individual. Would that constitute that sort of blemish or would it be of a totally different -- are the blemishes in a totally different order?

DR. SACHEDINA: The blemish, religious blemish could also be extended to the moral blemish because both these are interrelated in the child's proper lineage connection to the parents and their rights to inherit from them as much as the rights that the parents have from the child. Religiously blemished lineage would make it impossible in the Muslim communal life for the child to live

a normal life. We have -- it is for this reason that adoption is not permissible in Islamic law because it creates a problem of nurturing the proper lineage. The Koran says, "Go the child by his father's name." [Arabic]. So adoption has not been permissible.

It does not mean that Muslims do not adopt children but they make it a very clear distinction between the natural children and adoptive children because an adoptive child could have very different rights all together or other rights do accrue to the child.

So we are talking about the availability and accessibility of the technology within the boundaries of recognized moral and religious relationships between [Arabic] and the Muslim community. So there is parent to child relationships or child to parent relationship. That is what we mean by the lineage being clear.

DR. SHAPIRO: Thank you.

Eric?

DR. CASSELL: Thank you, Dr. Sachedina.

Once again the -- as with the previous speakers, cloning of human beings should go ahead but it depends on why you want to do it and of course that is always a problem, isn't it, when you have -- when something is there to do and then the oversight of it begins to drop behind and the thing just gets done. So I would like you to talk a little bit more about how you think one might know or one might help regulate why somebody is using cloning for and what

social mechanism that would be instituted?

DR. SACHEDINA: If you notice my language, I think Jim was right that it had some secular elements. Islamic language is not strictly religious. It is also civilizational language because Muslims created their own system, their own civilization, and the legal system was functional. In the legal system that Islam provides gives a lot of emphasis on the law giver to regulate motivations when they are probably going to cause harms because individual motives change as time changes.

I cloned for a very good reason and then I discovered that there is something else that I can achieve from this cloning. And motivation cannot be controlled at each stage of the decision that was made in my first motivation which was asked that I had to explain it and it was decided by the ethicists, by the Muslims [Arabic] that this is a good motivation that will now allow me to go ahead and do the cloning.

In other words, the policies have to be enough foresighted in order to control not the motives that are present at the moment but the long-term insights about what exactly could happen and, therefore, the third principle that I mentioned, the third rule is that the probable benefit has always to be weighed in terms of what harms in future there could be producing and this is where the policy makers and the law makers have a responsibility to have that kind of insight and wisdom to create them and to making such policies without having even a shadow of doubt, if there is a 50-50 doubt,

unless every decision is in favor.

So we have -- we talk about suppositional decisions and we talk about certain decisions in Islamic law. And suppositional decisions are 50-50 but if there is a chance of 70 percent benefit and 30 percent of harm then one can go ahead with caution. This is known as [Arabic]. That is precautionary measures are taken to guarantee that the harm would not be done. In other words, we are really looking at more objective way -- if there is an objective way of finding out those harms that could be produced by such a permission.

DR. SHAPIRO: Thank you.

Alta?

PROF. CHARO: Thank you very much, Dr. Sachedina. I found it very educational. I would like to return to a comment you made in the context of discussions about abortion. You mentioned that prior to 120 days of development there was not a consensus about the spiritual status of this form of human life but the fact that it was life and human meant that there was a consensus it was sinful to gratuitously destroy this life.

I wonder if you can talk a little bit further about the reasoning behind that consensus that it is sinful simply because it is human in life and talk specifically to the degree to which it has been applied in the context of embryos outside of the human body and the significance it has now for other skin cells or whatever cells we have in our body in the far off future when it may turn out these too

have the potential for being developed into babies.

DR. SACHEDINA: I can respond to the question of this division in the pregnancy of 120 days and beyond 120 days. It is really interesting to note that the majority of the Suni religious rule abortion to be permissible in the first 120 days if there is a pressing reason for the abortion especially if the mother's life is in danger then she has a priority over the fetus. And, therefore, that destruction of the embryo through the clinical abortion at that stage is not regarded as murder legally. There are two kinds of compensation to be paid when that happens.

Murder is regarded after the 120 days and, therefore, there is a full compensation for a person to be paid. The distinction is between biological and moral. Biological person and a moral person or a biological being and a moral being. And the moral being is the one whose murder is regarded as murder and that happens after 120 days in majority or rather there is a unanimous decision among the Suni jurists in the present day.

In the classical literature there is a distinction. The North African situation, for example, the [Arabic] disagree with that. They say, no, the life begins from day one and, therefore, there has to be compensation paid and the fetus has a right and viability of fetus is recognized.

Now when we come to the research in the embryo this is where we have an interesting situation that if embryos is not accorded a personhood before the ensoulment then the majority of the

jurists are of the opinion that its preservation is not obligatory.

It is recommended once -- the law says that once the formation of the bodily parts become obvious in the embryo, I am not a biologist so I really do not know exactly when that happens but --

DR. \_\_\_\_\_: Forty days.

DR. SACHEDINA: -- so once that distinction becomes obvious that this is now the fetus, this is the body and the parts then you have a different status being accorded to the embryo and it has to be buried, for example. Otherwise destruction of the embryo before that is not a problem.

There is no -- in our books on burial, for example, no embryo is required to be buried as a person. No funeral rights are proscribed unless the bone appears. Once the bone appears then it becomes obligatory on the Muslims to bury it. So you have a distinction has been made in the procreation of the embryonic development to the human creature and that distinction is kept in different books of the law on how they impact upon the whole situation.

Now what you asked about the cloning possibilities I am not knowledgeable about that process in science itself but I am sure that if it is kept through the preservations, that if it is preserved, that embryo, it is used in the future.

For example, there was a case in England in last March if I am not mistaken, a woman wanted to clone her dead husband -- to bear her dead husband's embryo which was frozen and the British law

would not allow her. The opinions of the Muslims jurists interestingly was permitting it because it was the husband's embryo. However, in legal terms she was not bound by that marriage because death had separated them so to speak. She was not in the marital obligation of her husband but it was still within her spousal rights to bear that embryo which was prior to the husband's death put to freezing.

So you can see the complexity of the situation and how Muslim jurists had conceded that to be possible to resolve. So they were in favor of such impregnation.

DR. SHAPIRO: Thank you.

Dr. Tandler, do you want to say anything? Dr. Tandler?

DR. TENDLER: Yes.

DR. SHAPIRO: Did you have anything you wanted to say?

I thought I saw your hand up.

DR. TENDLER: No.

DR. SHAPIRO: No. Dr. Lo then?

DR. LO: I also want to thank you for your presentation which was very enlightening. I want to ask you to say a little bit more about the issues of lineage and inheritance that you stressed as being so important in the Islamic tradition. I understand a lot of that or some of that comes from passages in the Koran which are sort of Divine Law. Can you also say a little more in the secular arena what are the issues regarding lineage and inheritance that make it such an important issue from a secular perspective.

DR. SACHEDINA: Islamic legal system -- Islamic religious system must be understood within the context of what I call Semitic anthropology. It is Semitic tribal culture which really emphasizes the purity of the lineage and that is preserved the marital relationship in the proper upbringing of the children and continuing the lineage for the future generations.

Another important consideration is that there is a possibility that we are talking about, and I have read literature that in the press imagining a lesbian mother deciding to -- lesbian woman but deciding to become pregnant through the process that is now available through technology. That would be viewed in Islamic system as a problem. It is a serious problem of depriving the child of the -- not only the proper lineage but also the ability to inherit because in Islamic system the child belongs to the father. And in that relationship it is very strictly adhered that the father's identity must be very, very clear.

In a polygamy situation if you -- for example, we do not have a problem with surrogacy. I have two wives let's say and the first wife is not able to bear the child and if it is -- if she wants her egg to be fertilized in the in vitro fertilization -- through the in vitro fertilization process then I can use my second wife as a surrogate mother without any legal problems because Islamic law does allow polygamy. In the here and now it becomes easier because you have temporary marriage which is recognized. I can contract a temporary marriage for the period of pregnancy or for the

period of bearing my child. So it becomes even easier from that level.

But lineage still is connected to the father. Therefore, the inheritance becomes extremely important. Muslims would be extremely sensitive to the situation of having a child outside spousal relationship because that would guarantee a proper lineage to the child. It would also guarantee the ability of the child to inherit from the father, from the ancestors, et cetera, and I am talking about real material inheritance, not simply traits through DNA. I am really talking about material inheritance.

DR. SHAPIRO: Thank you very much. One last question because we are going to have to move on.

Larry?

DR. MIIKE: It is a question that has not been raised but I just do want to raise it in the sense that I have heard two days of religious attitudes. My question to either one of you is does the concept of incest come up anywhere in this discussion particularly as it relates to nuclear transplantation? I do not know where to form a religious perspective, it is the act itself if it is prohibited, it is the act itself or the underlying consequences of the act that is the main issue that I was just sort of curious about.

DR. TENDLER: An issue was raised of course concerning donor insemination, the use of sperm banks, the --

DR. MIIKE: Excuse me, but I meant it only in the sense of the cloning issue.

DR. TENDLER: As I said, the same issue was raised, namely if you are going to use someone else's nucleus be it in the form of a sperm or a naked nucleus, that is called adulterous or incestuous and as a child a bastard because of it. The idea that you can have an adulterous relationship with a catheter or hypodermic syringe is far into Jewish tradition.

The consequence of an illicit sexual relationship is adultery, bastardy, et cetera. As long as there was no infidelity involved then there is no religious issue concerning the purity of the child that ensues from that union or the morality of the woman who was involved in that act. Sin is a sin of being "unfaithful" to one's husband. So as long as you are dealing with a nuclear transplant you are not involving yourself with any active infidelity.

DR. MIIKE: No, I think you misunderstand me. I do not mean adultery or infidelity. I mean incest.

DR. TENDLER: Adultery and infidelity and incest all require a prior act known as sexual union. If there is no sexual union there is no incest, there is no adultery, there is no bastardy.

DR. DORFF: I would agree with that. The one thing that I would mention though is that ironically cloning is easier for us on this than something like donor insemination because while there is no incest -- talking that there is no incest or adultery involved, we do have the obligation to try to preserve life and health.

And given the fact that from consanguineous unions you

have all kinds of genetic problems the -- if you -- if by accident the donor happened to have been a blood relative of the recipient in something like donor insemination or egg donation then you are going to have all of the problems of consanguineous unions. And so -- and those issues are difficult precisely for that reason, not because of adultery or incest but because of the duty to preserve life and health. But in cloning you do not have that. So I mean ironically it is -- cloning would be easier for us than donor insemination or egg donation.

DR. TENDLER: I would like to add on to that if I can that cloning would be easier than donor insemination also because in donor insemination you do leave open the possibility of an incestuous relationship when you have one donor and usually they run them like a stud farm because you have got a donor now who they usually check back a few generations for absence of genetic disease and when you finally get yourself a good one most people in infertility management hold on to him for many inseminations.

In England there is a prohibition after number ten. In America we have no such prohibition. I know personally a young man who has fathered more than 50 children at Columbia Presbyterian and since they all come from the same social -- from the same geographic area the likelihood of the children of these inseminations meeting each other, there we would have a true incestuous relationship problem and, therefore, cloning has that advantage. As the Koran emphasizes there you know who the father is but you just do not know

whether he is a father or a brother. That is the problem.

DR. SHAPIRO: Thank you very much. Let me express my thanks once again to all of the panelists. We very much enjoyed your presentation.

(Applause.)

DR. SHAPIRO: We will take a ten minute break and then begin our next panel.

(Whereupon, a brief break was taken from 10:12 a.m. until 10:28 a.m.)

#### VIEWS IN CLONING

DR. SHAPIRO: I would like to begin our session. Could I please ask visitors, panelists and others to please take their place so that we could begin.

We are very fortunate this morning once again to have a distinguished group of scholars with long commitments to thinking about issues in this area that we are concerned with, not talking specifically about human cloning of the kind that has just become apparently possible, but indeed their discussions have long preceded the science and, indeed, it is an interesting -- one of the interesting things to me about cloning is that very serious and thoughtful concern has been devoted to the subject well in advance of when we knew what would be possible and how soon it would be possible.

That has bequeathed to us a literature which is really an enormous help to us in trying to think through these problems

right now. All four of our panelists have really contributed to the that and contributed, therefore, to the education of this entire commission as well as other people around the country who concern themselves with this issue so I want to express my gratitude to all of you for the contributions you have made and for the willingness to come and address us here today on such short notice, some of you from quite some distance.

We have been proceeding the last two days taking two speakers at a time and then going into discussion, two other speakers, discussion again, of course which is open really for all discussants to participate in, and having no better way to choose the order than what appears on the agenda I am going to proceed in that way.

So we will begin with Dr. Robertson and Dr. Macklin first.

Let me turn to you, John, first. Thank you very much for being here.

#### POSSIBLE BENEFITS

#### DR. JOHN ROBERTSON

DR. ROBERTSON: Good morning, Mr. Chairman and members of the commission. I appreciate the opportunity to be here and thank you for your interest in my views on these interesting issues.

As you are all aware, the initial reaction to the idea of human cloning has been hostility and repugnance and a skepticism that anything good could really come out of it, come out of human

cloning. In your considered response we would recognize that there are potential benefits to infertile couples and others from human cloning, that the harms alleged to flow from cloning are too vague and speculative at this point to justify a ban on cloning applications much less on cloning research. It is just too early in the cycle of development to ban all research or all applications.

It seems to me that we need a more thoughtful approach which I am impressed with the commission's work and how it is going about it in a thoughtful way. I am sure you will end up with a reasoned policy here.

It seems to me an optimal policy on human cloning would respect to human rights and individual freedom and dignity, including scientific and reproductive freedom. It would permit cloning to occur where substantial benefits to families or patients would result or important human freedoms are involved. It would limit or restrict it when tangible harm to others is likely.

An important point is that in assessing harm deviation from traditional methods of reproduction or clashes with particular religious views of how reproduction should occur is not itself a compelling reason for restriction if tangible harm to others is not present. However, such purely moral or symbolical religious concerns unrelated to actual harm to persons may appropriately be taken into account when determining the types of research and services that federal funds should support.

It seems to me if you are going to rationally assess

human cloning you need to look at three issues. How it relates to current reproductive and genetic selection practices. What its possible benefits are and what its harms are. I would like to just say something about each.

In significant ways cloning is not qualitatively different from many of our practices. In assisted reproduction we now engage in IVF. We have donors of sperm and eggs and embryos. We have gestational surrogates and some of the ways that human cloning would occur would build on those techniques.

More importantly we are also engaged in a wide variety of genetic selection techniques now to help couples have healthy offspring and cloning fits into that web or complex of activities that are going on now. If you just think of the ways in which we now select the genes and characteristics of offspring you see that cloning is not that radical a step forward even though it does differ in some important ways.

Most of the current techniques involve carrier and prenatal screening and usually operate in a negative way by avoiding the conception, implantation or birth of children with particular characteristics but there is a large amount of active genetic selection going on albeit at the gross level that occurs in choosing mates or gametes for reproduction or in deciding which embryos or fetuses will survive and go to term. And I am reminded of ICSI where a single sperm is picked out by the embryologist to decide which one will be used to fertilize an egg.

Cloning does differ from existing selection techniques in a couple of ways. It may appear more active in that you are actively doing something rather than just excluding. In addition, it selects or replicates the entire genome except for mitochondria rather than focusing on the presence or absence of particular genes.

Finally it enables a person to create his or her twin and then parent it. I am not sure that is the most important use of cloning and I will have some things to say about it later but it would allow it to occur. If that happened it would be important to recognize that the source of the DNA there would not be the genetic parent of the resulting child. Could end up being the social parent but would be the genetic twin and I think it is important to be very clear about what that relationship is and I have sometimes heard some confusing or conflicting things about that over the last day.

In an important sense cloning is not the most radical thing on the horizon. Much more significant, I think, would be the ability to actually alter or manipulate the genome of offspring. Cloning takes a genome as it is as given and might replicate it. It seems to me that that is much less ominous than having an ability to take a given genome and either add or take out a gene which could then lead to a child being born with characteristics other than it would have had with the genome it started with.

Well, the point about the continuity with existing practices is very important not to pick out cloning and make policy

for that without situating it in the bed or web of other practices going on. If you do that there will be a real danger that you are going to end up limiting other practices which we now accept or will accept in the future by focusing on cloning alone.

Let me shift now to my second point which concerns possible beneficial uses. Until about two weeks ago no one thought cloning by nuclear transfer was possible. There has not been a lot of attention spent on what possible beneficial uses are. But several reasonable plausible uses of intending to replicate a human genome are imaginable and I think we can break these down into two categories. Those involved with cloning embryos in the course of IVF treatment for infertility and those involved with trying to select a given genome for an offspring.

Consider couples going through IVF. Many reasons why they might choose to clone embryos either by blastomy or separation, or by nuclear transfer. One would be to obtain enough embryos to achieve pregnancy and offspring. If a woman produced only one or two eggs or one or two embryos it might be difficult for that couple to have a family. Splitting the embryos or cloning them by nuclear transfer would enable them to overcome that problem. Or they may want to do that to avoid having to go through a second IVF cycle which not only is very costly but is onerous for the woman involved including hormonal stimulation and egg retrieval.

A third would be to have a back up supply of embryos from which tissue or organs could be obtained if a tragedy befell a

first child. Obviously in that scenario the cloned embryos could be transferred to the uterus at the same time leading to simultaneously born intended twins or they could be transferred at later points in time.

Now an important point, indeed a crucial point, about cloning as part of IVF is that such activities would appear to fall within the fundamental freedom of married couples, including infertile married couples to have biologically related offspring. If the ability to clone an embryo and transfer it to the uterus is essential in determining whether that couple will reproduce then cloning should receive the same legal respect and protection that other means of noncoital reproduction receive.

In that case dislike or repugnance at how a couple is reproducing or the fact that certain religious bodies might find it unacceptable will not be a sufficient reason to ban the practice unless you could show tangible harm to others. The freedom to use noncoital techniques to treat infertility should be left to the individuals directly involved and if cloning is essential for them to have offspring then it seems to me it should be equally protected.

Let me move on to a second reason why cloning might prove beneficial. Here it is not enhancing fertility per se or simply obtaining a child for rearing but it could occur. It is an attempt to produce a child that has a healthy genome. You might call this eugenic cloning but that sort of has a bad ring but I think that is a proper way to characterize it.

The couple is concerned with having a healthy offspring. The best way to do that might be to replicate an existing genome which appears healthy. Indeed, again such a practice is not that different from some of the things that now go on in ART practice though I will admit that this form of cloning has the greatest potential for deviation from those practices and has generated the most bizarre scenarios and fears.

But the case I have in mind, a case for cloning for genetic selection or eugenic purposes, is closely related to current practices, would be the couple who both lack gametes. The wife has a functioning uterus and would like to gestate and thus they desire an embryo donation.

Embryo donation is now an accepted part of ART practice but instead of having to go around and find an embryo at random left over from IVF treatment of another couple which has not been adequately assessed for disease or what the outcome would be, they might decide that the best alternative would be to create an embryo that replicates the DNA that already exists.

It could be a living person. It could be a living child. It could be someone who has passed away. The intent here would be to screen out the possible genomes they might get. Screen out those so they would end up with a healthy one and, of course, the purpose here would be to have a healthy offspring that they both would rear themselves.

Well, since we now allow couples a wide degree of

freedom in selecting mates, in choosing gamete donors, indeed in choosing babies for adoption where people are entitled to have genetic and other information, it seems to me that allowing them to choose the embryos that they are going to gestate and then rear by means of cloning falls within that and should have the same degree of respect and protection that those other practices incur.

But strictly speaking in this case the couple will not be engaged in genetic reproduction. However, they would be involved in having a child whom they will gestate and rear, it seems to me they should be treated equivalently to infertile couples who also provide egg or sperm in forming a family.

Now the most problematic cases of eugenic cloning would arise if cloning were not designed to produce a healthy child through rearing by loving parents and that is the scenarios of abuse and narcissism that we have been flooded with in the past few weeks. It is important to distinguish them away. I think it shows that not all cases of human cloning need be treated the same for they are not all equivalent in importance or in their impact on the clone source or on the resulting child.

Thus cloning of self where the child will be reared by the person who is being cloned and his or her partner is a form of genetic selection of offspring characteristics that might pose different problems and deserve different treatment than cloning embryos in order to treat infertility or cloning embryos in order to get a genetically suitable or acceptable child for rearing. It seems

to me policy makers need to distinguish very carefully between these cases.

The bottom line here is that if a loving family will rear the child it is difficult to see why cloning through genetic selection anymore than cloning for an answer to infertility is per se unacceptable. As I have said we engage in many forms of genetic selection already, most of which are designed to make sure that a child will be healthy and have good chances in life. So-called eugenic cloning is but another form of genetic selection and it should not be banned on that ground alone.

Let me now turn to another important part of the policy assessment. I have spoken about continuity with existing practices.

I have spoken about some potential beneficial uses. Let's talk about harms because given that there are potential beneficial uses that fall close to existing practices, a ban on all cloning or all cloning research can be justified only if cloning always or invariably cause great harm to others.

I find opponents of cloning have been very nonspecific and speculative about the harms possible from cloning. On the one hand we have the science fiction flawed scenarios similar to Brave New World or "Blade Runner," the science fiction movie. More moderate opponents talk about the importance of having a unique genome and how cloning might rob a child of a unique identity. At the same time, however, they want to deny the importance of genes alone in creating identity so there is a kind of tension there in

their comments.

A more considerate view of the potential harms of human cloning must address three issues. The first issue concerns the rights and status of persons born after cloning. In the most likely cloning scenarios parents will be seeking a child whom they will love for itself. But even in less benign scenarios any resulting child would be a person with all the moral and legal rights of persons and no more would be the property or subject of the person who commissions or carries out the cloning than any other child would be.

I was struck by the difficulty Professor Meilaender had yesterday when that question was asked. He really hesitated on that but it seemed to me that the response to the panel recognizing that a clone would clearly be a person with all the moral and legal rights of any other child.

The fact that its DNA had been chosen would not give those who chose it and brought it into being any right to use that child in a way that existing parents could not use it. Indeed, they could not use it for organ transplantation and then throw it away. If they were to use that child as a source of organs they would have to respect it and show that it benefits the child in some way.

The second important point about harm is whether the child will have a unique identity because of having the same DNA. Most negative views assume the clone will be an exact -- exactly identical to the clone source like multiple copies from a xerox

machine but I think we are beyond that at this point.

I think Thomas Murray put it extremely well before Congress last week when he said, "A clone of Mel Gibson might look like Mel Gibson but he will not be Mel Gibson and will have very different experiences, indeed." So the concern that the clone is being harmed because it will not be unique obviously overlooks the great importance of nurture and environment, and rearing in making a person who they are.

A key issue, however, in addressing harm to the child who results from cloning is that that child will not have existed but for the cloning procedure at issue. Prior to the cloning the child did not exist. It came into being only as a result of the cloning. In a crucial sense it has not been harmed because it has no other way to be born but with the DNA chosen for it. Nor obviously can it be said to be harmed because its life somehow is so full of suffering or confused identity that any existence as a clone is less preferable than nonexistence.

This point also applies to the claim that Alta Charo made before the Senate the other day and others have raised here. I think Leon Kass raised it early on in the debates about IVF that the first transfers of a human clone before we know whether it will succeed, that the first transfers are somehow unethical, unethical experimentation on the resulting child because one does not know what is going to happen and one is transferring the embryo possibly leading to a child who could be disabled and have developmental

difficulties, something of that sort.

It seems to me again to recognize that that child who would result would not have existed but for the procedure at issue and in response to Alta's point the intent there is actually to benefit that child by bringing it into being so if one views it somehow as experimentation on the expected child I would think it should be classified as experimentation for its benefit and thus it would fall within recognized exceptions when experimentation on kids can occur. We have a very different set of rules for experimentation intended to benefit. I think that is what is going on there.

Now, of course, it might be preferable if parents had had a child whose DNA had not been copied from another source. Yet that option usually will not phase people. It will be either the clone or no child at all, thus a policy requirement of no child at all seems to me would interfere with their procreative liberty and such a policy could not be justified as protecting the child with the DNA of another for such a child only would exist if the cloning occurred.

Now the third point about harm is the need to recognize that a lot of the discomfort that people have with cloning and which leads to cause for its total ban I think are rooted in the discomfort we feel that the notion that there is something deliberate and intentional about choosing another's genome. This is a discomfort that rises regardless of whether harm to offspring or families can actually be shown.

It seems to tie in with the very idea of selecting a child's DNA appears to be instrumental. It appears as said -- Professor Cahill yesterday talked about commodifying offspring, treating them as means rather than ends, and therefore people who take this view would argue it is better not to have these children born at all rather than risk treating them as an instrument or means to the happiness of the parents.

The problem with this view, which is a very basic pervasive view, is that it is too subjective and personal. Some people might have that attitude but many others and those most likely to be involved in cloning are not doing the child justice as a means to an end. They want a child as part of their forming a family which they will rear and would hardly agree with the notion that they are just selfishly creating a means to their own personal happiness. They will talk about having a child that will part of their family whom they will rear and respect and love.

Secondly, this argument paints with far too broad a brush and would ban almost all reproductive activity. Infertile couples and couples at risk of offspring with severe genetic disease or of creating children of choice if you will, and you could say that is serving selfish ends, indeed you could say that about every case of having kids. That somehow the parents are doing it as a means to some end but surely we do not view the usual cases of coital or noncoital reproduction as merely commodifying offspring.

So, in sum, I think it is very difficult to show actual

harm to offspring, families or society from the cloning scenarios most likely to occur. There may be harm or offense to particular moral or religious notions of how conception should occur and how children should be chosen and born but such purely moral or symbolic concerns are not a sufficient basis for overcoming procreative choice or banning beneficial uses even though they may, of course, appropriately enter into federal research funding.

So at this early stage in the development of cloning a ban on all human cloning is both imprudent and unjustified. Enough good uses can be imagined. It would be unwise to ban all cloning because of the vague fears that have been put forward. Obviously all cases of cloning need not be treated the same for they will differ in their intent and affects on the clone source and resulting individual.

So if you are looking for a bottom line, as Dr. Cassell was asking earlier, let me end with a couple of lines one could draw in this area here or a couple of issues that need to be separated.

The first is the idea that research in human cloning has to be permitted. The fact that it may involve embryos and creating embryos solely for research purposes is not a reason to ban all cloning research. It may be a reason not to federally fund it but that is a separate issue of whether all such research should be banned. Indeed, if it were banned I think there would be serious constitutional problems with such bans.

Secondly, when the research shows that cloning is safe

and effective as far as we can tell and the issue of transfer becomes possible then I think we need to distinguish cloning and transfer as a treatment of infertility where the couple then will rear the child.

Whether the transfer of the embryos is occurring simultaneously or separated in time seems to me that that is a second category that needs to be clearly identified and seems to me is a very compelling case to be made for allowing that if it ever becomes scientifically and clinically feasible.

Third, it seems to me that to the extent that we now allow embryo donation to occur we also have to allow the cloning of adults who have consented to it who will not be involved in the rearing of the offspring but are simply donating their DNA if you will the same way that other couples have donated embryos.

The fourth category is the one that I find most difficult and, indeed, I would like at a later point to submit some further analysis of that. That is the case of self-cloning where one of the parties involved will also be involved in rearing. It seems to me that that raises some of the most difficult issues. However, my hesitancy in either condemning it or necessarily approving it is that I think that needs some further work and further thought and analysis to see to what extent it actually is very close to prevailing methods of procreation, to what extent it is really, really different and to what extent it would pose special problems in upbringing of a child.

It seems to me that if the commission works along those

lines you will go a long way to coming up with a rational, defensible policy for human cloning.

DR. SHAPIRO: Thank you very much.

Let me now turn to Dr. Macklin. Dr. Macklin?

DR. RUTH MACKLIN

DR. MACKLIN: Thank you and thank you for inviting me.

Despite the apparent appearance that my presentation is a clone of John Robertson's we did not have any collusion beforehand. I am afraid it is going to be a little deja vu all over again but I am going to be brief.

Having been invited to speak on the possible benefits of cloning I fear that I shall disappoint the commission. My inability to identify such benefits stems partly from my ignorance of the relevant scientific background.

Not being a scientist I cannot project the possible benefits whereas a knowledgeable scientist in this area could probably do so. But here an initial distinction is critical and that is the distinction between research on human cloning and one possible application of that research, the production of human clones.

Scientists can enlighten us about the potential medical or other benefits that can flow from research on human cloning. But scientific expertise cannot help to determine what might be the social or personal benefits of producing human clones.

This relates to another reason for my inability to identify the benefits of cloning. There may not be any substantial

societal benefits. A further complication is that what I consider benefits to individuals in certain circumstances others construe as harms.

The history of science and technology demonstrates that even the most skilled and created scientist cannot foresee what might emerge from an entirely new field. To close off the opportunity to research on the grounds that few people are able to predict the benefits would be premature. Moreover, to ban an entire line of research because of possible unethical applications of that research is prejudicial.

That may, of course, be a good reason to prohibit embarking on certain types of research, that reason being the probability of considerable harms resulting from the research itself.

No one has yet succeeded in identifying such harms inherent in research on human cloning. Instead the projected harms point to the fruits of that research, the production of human clones.

In the most recent and earlier discussions about human cloning most of the great harms envisaged are the ones depicted in science fiction literature and films. Science fiction is a poor basis for making public policy. Furthermore, the science fiction accounts of cloning have not portrayed the evils of research but rather the abuses of one application in the production of multiple clones.

Many options exist besides outright prohibition of an activity even when great harms can be conceived. We regulate research involving human subjects with a variety of mechanisms in order to prevent unbridled and unethical human experimentation from going forward. But we do not ban research on human beings all together just because we can imagine some mad man designing and implementing atrocities in the name of science.

Evidence has not been forthcoming that research on human cloning or even the eventual cloning of human beings if carefully regulated, monitored and subjected to legal as well as legal restrictions would produce such great harms that it must be banned from the outset and forever more.

It is certainly possible that there may be no substantial benefits to society that would result if human cloning were to become a reality. Yet this would constitute a good argument for prohibition only if considerable harms are a likely consequence.

We need a realistic portrait, not a recitation of worst case science fiction scenarios before we may conclude that the harms of allowing cloning to proceed in a research context and even beyond are so great that even with regulations and oversight consummate evil will result.

One incontestable ethical requirement is that no adult person should be cloned without his or her consent. I think the notion of consent is even the wrong one here because it suggests that someone else is recommending, urging or requesting the cloning. But

if adult persons sought to have themselves cloned would the resulting individuals be harmed by being brought into existence in this way?

One harm that some envisage is psychological or emotional distress to a person who is an exact replica of another. Some commentators have elevated this imagined harm to the level of a right, the right to our own individual genetic identity. We heard this morning someone ask where did that right come from.

But it is not at all clear why the deliberate creation of an individual who is genetically identical to another living being but separated in time would violate anyone's rights. The person from whom the clone is derived must initiate the process voluntarily -- and I am using the word now "initiate" -- and thus waives any alleged right to genetic identity.

The cloned individual, and this sounds like an echo of my colleague here, the cloned individual would not otherwise have come into existence. He or she would have the presumed benefit to enjoy life and would of course deserve all the legal protections any human being brought into the world by any means, natural or with the aid of assisted reproductive technology. Evidence, not mere surmise is required to conclude that the psychological burdens of knowing that one was cloned would be of such magnitude that they would outweigh the benefit of life itself.

This brings me to a critical point. What I might construe as a benefit others may think of as harm and, in fact, have said so, that it is harm. This is the case regarding some of the

potential benefits envisaged for individuals or couples who want to use the opportunity afforded by human cloning. At least two situations have been envisioned but I am going to speak briefly about those. Others -- John has spoken about many more.

In the first a couple suffers a tragic loss when their child is fatally injured. Let us assume further that the woman is past child bearing. Before the child dies the parents seek to have her cloned.

In the second situation a couple is infertile and perhaps unable or perhaps unwilling to use one of the existing techniques of assisted reproduction. Cloning is the only way for them to have a genetically related child.

In the first situation we may sympathize with the grieving parents yet still wonder if a child brought into existence from such motives might be psychologically damaged. But is replacing a beloved child by the technique of cloning any more ethically suspect than having another baby by the usual means to serve as a replacement for a lost child?

In the second situation we may question why these and other infertile couples are so desperate to have a genetically related child. But for what specific reasons would cloning be unacceptable when the couple might use the gametes of strangers, employ in vitro fertilization and implant the resulting embryo in the woman's sister who has agreed to be a gestational surrogate. No harm specific to the technique of cloning is apparent.

The ethics of these situations must be judged by the way in which the parents nurture and rear the resulting child and whether they bestow the same love and affection on a child brought into existence by a technique of assisted reproduction as they would on a child born in the usual way.

Yet commentators have termed these scenarios grotesque countering the supposition that these could be benefits of cloning by claiming that the alleged benefits are in reality the harms.

Who would be harmed in instances where individual humans, not herds of humans, might be cloned? Whose rights would be violated if cloning were legally permitted only in cases where people initiated a voluntary request? As is the case in research involving human subjects children beyond a certain age and adolescents would have to provide affirmative assent to be cloned. A cloned individual would not be like an identical twin of the person whose genetic material was used in the procedure.

For one thing the two individuals would be separated in age. For another nuclear transplantation I am told by scientists who work in this area, nuclear transplantation results in 70 to 80 percent genetic identity, not 100 percent as in natural twinning or blastomy or separation.

Just as we often say of older and younger brothers and sisters, mothers and daughters, or fathers and sons, "Gee, she or he looks just like you did at her or his age." So, too, might we regard a person and his or her clone separated by several years.

Cloned individuals would have a different intrauterine environment from the person of their origin. They would have a different life experience and different memories. They would be distinct individuals respected and cherished for themselves. A child brought into existence by this method would not be a commodity nor would its worth be any less than that of other children.

Yet some seem to take as axiomatic the proposition that to be cloned is to be harmed or at least to be wronged. Axioms are underived postulates so they must be known by means of Divine revelation, by a method of intuition or in the way that the axioms of logic are known. I leave to theologians the question whether propositions about cloning are knowable by Divine revelation. Intuition has never been a reliable epistemological method especially since people notoriously disagree in their moral intuitions.

The other drawback of reliance on intuition is that it admits of no argument or justification. It is absurd to maintain that the proposition cloning is morally wrong is self-evident in the way that axioms of logic like Leidenitz's (?) law are knowable. For those of you who have forgot, Leidenitz's law is the identity of indiscernibles.

The mere assertion that cloning is the replication of humans, a process radically different from reproduction, and therefore it should be outlawed fails to identify the moral wrong involved. In a moral argument it is necessary to specify the precise nature of the wrong done either to the individual from whom a clone

is derived or to the resulting cloned person.

If we are to address the subject of cloning in a realistic and responsible way we must first abandon scenarios of armies of Hitlers, clones used as organ farms for already existing individuals, and mad scientists working in basement laboratories out of the 19th Century. Just as we have laws prohibiting baby selling and commerce in human organs so can we and should we have laws prohibiting commercial transactions involving cloned human beings. Laws and regulations would be needed to protect people's rights and prevent harmful applications and violators would have to be punished.

One last point. It is, as many commentators note, important to respect and preserve human dignity. But these commentators owe us a more precise account of just what constitutes a violation of human dignity if no individuals are harmed and no one's rights are violated. Dignity is a fuzzy concept and appeals to dignity are often used to substitute for empirical evidence that is lacking or sound arguments that cannot be mustered.

If I cannot point to any great benefits likely to result from cloning neither do I foresee any probable great harms provided that a structure of regulation and oversight is in place. If objectors to cloning can identify no greater harm than a supposed affront to the dignity of the human species, that is a flimsy basis on which to erect barriers to scientific research and its applications.

Thank you.

DR. SHAPIRO: Thank you very much.

With the agreement of my fellow commissioners I am going to suggest a deviation from our normal rule because I think it will aid in our discussion and make it perhaps even more lively and suggest that we turn to our two other panelists who are here with us to look at a different perspective on this issue, at least what I believe might be a different perspective, and then we can take both into account in our questions and question all four panelists and have a discussion with them together.

Is that all right with the commissioners?

Thank you very much.

Let's turn now to Dr. Leon Kass from the University of Chicago. Thank you for being here.

#### POSSIBLE RISKS

#### DR. LEON KASS

DR. KASS: Thank you. Mr. Chairman, members of the commission, I am deeply grateful for the opportunity to present some of my thoughts about the ethics of human cloning which I mean precisely the production of human clones not the embryonic research.

This topic has occupied me off and on for over thirty years. It was the subject of one of my first publications in bioethics 25 years ago. Since that time we have in some sense been softened up to the idea of human cloning through movies, cartoons, jokes and intermittent commentary in the media. We have also become

accustomed to new practices in human reproduction, in vitro fertilization, embryo manipulation and surrogate pregnancy, and in animal biotechnology, the transgenic animals and a burgeoning science of genetic engineering.

Changes in the broader culture now make it more difficult to express a common respectful understanding of sexuality, procreation, nascent life and the meaning of motherhood, fatherhood and the links between the generations.

In a world whose once given natural boundaries are blurred by technological change and whose moral boundaries are seemingly up for grabs it is, I believe much more difficult than it once was to make persuasive the still compelling case against human cloning. As Raskolnikov (?) put it, "Man gets used to everything, the beast."

Therefore, the first thing of which I want to persuade you is not to be complacent about what is here at issue. Human cloning, though in some respects continuous with previous reproductive technologies also represents something radically new, both in itself and in its easily foreseeable consequences.

The stakes here are very high, indeed. Let me exaggerate but in the direction of the truth. You have been asked to give advice on something less -- sorry. You have been asked to give advice on nothing less than whether human procreation is going to remain human, whether children are going to be made rather than begotten, and whether it is a good thing humanly speaking to say yes

to the road which leads at best to the dehumanized rationality of the brave new world.

If I could persuade you of nothing else it would be this: What we have here is not business as usual to be fretted about for a while but finally to be given our seal of approval not least because it appears to be inevitable. Please rise to the occasion, address the subject in all its profundity and advise as if the future of our humanity may, indeed, hang in the balance.

Offensive, grotesque, revolting, repugnant, repulsive.

These are the words most commonly heard these days regarding the prospect of human cloning. Such reactions one hears from both the man or woman in the street and from the intellectuals, from believers and atheists, from humanists and scientists. Even "Dolly's" creator, Dr. Wilmut, has said that he would, "Find it offensive to clone a human being." People are repelled by many aspects of human cloning.

The prospect of mass production of human beings with large clones of lookalikes compromised in their individuality, the idea of father-son or mother-daughter twins, the bizarre prospects of a woman giving birth to a genetic copy of herself, her spouse, or even her deceased father or mother.

The creation of embryonic genetic duplicates of one's self to be frozen away in case of later need for homologous organ transplantation. The narcissism of those who would clone themselves. The arrogance of others who think they know who deserves to be

cloned or which genotype any child to be should be thrilled to receive. The Frankensteinian hubris to create human life and increasingly to control its destiny. Man playing at being God.

Almost no one sees any compelling reason for human cloning. Almost everyone anticipates its possible misuses and abuses. Many feel oppressed by the sense that there is nothing we can do to prevent it from happening and this makes the prospect seem all the more revolting.

Revulsion is surely not an argument. Some of yesterday's repugnance's are today calmly accepted. But I submit in crucial cases repugnance is often the emotional bearer of deep wisdom beyond reasons power fully to articulate it.

Can anyone really give an argument adequate to the horror which is father-daughter incest even under consent or having sex with animals or eating human flesh, or even just raping or murdering another human being? Would anyone's failure to give full rational justification for his revulsion at these practices make that revulsion ethically suspect? Not at all.

In my view our repugnance at human cloning belongs in this category. We are repelled by the prospect of cloning human beings not because of the strangeness or novelty of the undertaking but because we intuit and feel immediately and without argument the violation of things we rightfully hold dear.

I doubt very much whether I can give proper rational voice to this horror but in the remarks that follow I will try but do

consider seriously that this may be one of those instances about which the heart has its reasons that reason cannot adequately know.

I will raise four kinds of objections. The ethics of experimentation, identity and individuality, fabrication and manufacture, despotism and the violation of what it means to have children.

First, any attempt to clone a human being would constitute an unethical experiment upon the resulting child to be. As the animal experiments indicate there is grave risk of mishaps and deformities. Moreover one cannot presume a future cloned child's consent to be a clone, even a healthy one. Thus I submit again we cannot ethically get to know even whether or not human cloning is feasible.

I understand, of course, that it is philosophically impossible to compare life with defects against nonexistence but that problem aside it is surely true that people can harm and even maim children in the very act of conceiving them, say by paternal transmission of the HIV virus or maternal transmission of heroin dependence. To do so intentionally or even negligently is inexcusable and clearly unethical. Although that philosophical conundrum, I think, does not finally decide the question. I think it is irrelevant.

Second, cloning creates serious issues of identity and individuality. The cloned person may experience concerns about his distinctive identity not only because he will be in genotype and

appearance identical to another human being but in this case it will be to a twin who might be his father or mother if one can still call them that.

What would be the psychic burdens of being the child or parent of your twin? Moreover the cloned individual will be saddled with a genotype that has already lived. He will not be fully a surprise to the world and people are likely always to compare his performances in life with that of his alter ego.

True, his nurture and circumstance in life will be different, genotype is not exactly destiny but one must also expect parental and other efforts to shape this new life after the original or at least to view the child with the original version firmly in mind.

For why else do they clone from the star basketball player, mathematician and beauty queen, or even dear old dad in the first place?

Genetic distinctiveness not only symbolizes the uniqueness of each human life and the independence of its parents that each human child rightfully attains, it can also be an important support for living a worthy and dignified life.

Such arguments apply with great force to any large scale replication of human individuals but they are in my view sufficient to rebut even the first attempts to clone a human being. One must never forget that these human beings upon whom our eugenic or merely playful fantasies are to be enacted.

Third, human cloning would represent a giant step towards begetting -- turning begetting into making and procreation into manufacture, a process already begun with in vitro fertilization and genetic testing embryos. Let me say, by the way, that the fact that these things might be continuous with things in the past does not necessarily provide the justification. What comes later may, in fact, cast something of a negative light on what we have done unthinkingly to this point.

With cloning not only as the process in hand but the total genetic blueprint of the cloned individual is selected and determined by the human artisans. To be sure, subsequent development is still according to natural processes, and the resulting children will still be recognizably human. But we here would be taking a major step into making man himself simply another one of the man made things. Human nature becomes merely the last part of nature to succumb to the technological project which turns all of nature into raw material at human disposal to be governed by our rationalized technique but only according to the prevailing subjective prejudices of the moment.

In natural procreation we two human beings come together, complementarily male and female, to give existence to another being who is formed exactly like us by what we are living and hence perishable and hence aspiringly erotic human beings. But in cloning reproduction and in the more advanced forms of manufacture to which it leads we give existence to a being not by what we are but by

what we intend and design.

As with any product of our making, no matter how excellent, the artificer stands above it, not as an equal but as a superior, transcending it by his will and creative prowess. Scientists who clone animals make it perfectly clear that they are engaged in instrumental making. The animals are from the start designed as means to serve rational human purpose.

In human cloning scientists and perspective parents would be adopting the same technocratic mentality to human children. Human children would be their artifacts even if they loved them. Such an arrangement is profoundly dehumanizing no matter how good the product. Mass scale cloning of the same individual makes the point vividly but the violation of human equality, freedom and dignity are present even in a single planned clone.

Finally and perhaps most important, the practice of human cloning by nuclear transfer like other anticipated forms of genetic engineering of the next generation would enshrine and aggravate a profound and mischief making misunderstanding of the meaning of having children and of the parent-child relationship.

When a couple now chooses to procreate the partners are saying yes to the emergence of new life in its novelty, are saying yes not only to having a child but also tacitly to having whatever child this child turns out to be. Whether we know it or not we are thereby also saying yes to our finitude and mortality, to the necessity of our replacement, and the limits of our control.

In this ubiquitous way of nature to say yes to the future by procreating means precisely that we are relinquishing our grip even as we thereby take up our own share in what we hope will be the immortality of human life and the human species.

This means that our children are not our children. They are not our property. They are not our possessions. Neither are they supposed to live our lives for us or anyone else's life but their own.

To be sure we seek to guide them on their way imparting to them not just life but nurture, love and a way of life. To be sure they bear our hopes that they will surpass us in goodness and happiness enabling us in small measure to transcend our own limitations. But their genetic distinctiveness and independence is the natural foreshadowing of the deep truth that they have their own and never before enacted life to live. Though sprung from a past they take an uncharted course into the future.

Much mischief is already done by parents who try to live vicariously through their children. Children are sometimes compelled to fulfill the broken dreams of unhappy parents. John Doe, Jr. or the III, is under the burden of having to live up to his forbearer's name.

But in cloning such overbearing parents take at the start a decisive step which contradicts the entire meaning of the open and forward looking nature of parent-child relations. The child is given a genotype that has already lived with full expectation that

this blueprint of a past life ought to be controlling of a life that is to come.

Cloning is thus inherently despotic for it seeks to make one's children or someone else's children after one's own image or an image of one's choosing and their future according to one's will. In some cases the despotism may be mild and benevolent and in others mischievous and downright tyrannical. But despotism, the control of another through one's own will, it will unavoidably be.

What then should we do? We should declare human cloning, that is the attempt to create a human person by nuclear transfer, deeply unethical in itself and dangerous in its likely consequences. In so doing we shall have the backing of the overwhelming majority not only of our fellow Americans but of the human race, including I believe most practicing scientists.

Next we should do all that we can to prevent human cloning in this limited sense from happening by an international legal ban if possible, by a unilateral national ban at a minimum. Scientists can, of course, secretly undertake to violate such a law but they will at least be deterred by not being able to stand up proudly to claim the credit for their technological bravado and success.

Such a ban on human cloning will not harm the progress of basic genetic embryological science and technology. On the contrary, it will reassure the public that scientists are happy to proceed without violating the deep ethical norms and intuitions of

the human community.

I beg your indulgence for one comment, Mr. Chairman, to address to the committee.

The President has given this commission a glorious opportunity. In a truly unprecedented way you can strike a blow for the human control of the technological project for wisdom, for prudence, and for human dignity. The prospect of human cloning so repulsive to contemplate, in fact, provides the occasion as well as the urgent necessity of deciding whether we shall be slaves of unregulated progress and ultimately its artifacts or whether we shall remain free human beings to guide our technique towards the enhancement of human dignity.

To seize the occasion we, you, must, as the last Paul Ramsey said, and I quote, "Raise the ethical questions with a series and not a frivolous conscience. A man of frivolous conscience announces that there are ethical quandaries ahead that we must urgently consider before the future catches up with us. By this he often means that we need to devise a new ethics that will provide the rationalization for doing in the future what men are bound to do because the new actions and interventions science will have made possible. In contrast..." I still quote "...a man of serious conscience means to say in raising urgent ethical questions that there may be some things that men should never do. The good things that men do can be made complete only by the things they refuse to do."

Thank you very much.

DR. SHAPIRO: Thank you very, very much for your remarks.

Let me just say to all the speakers something I meant to mention before that if -- I hope all of you have written versions of your remarks. If you do we would very much like to have them so that we can distribute them and we can study them a little more carefully. I do not want to put you to any extra obligation but if you do have those that would be very helpful to our ongoing consideration of these issues.

Let's now turn to our last panelist this morning, Dr. Jim Nelson.

Dr. Nelson?

DR. JIM NELSON

DR. NELSON: I would like to express my thanks as well, Mr. Commissioner, to the commission for inviting me here today to talk about my views about this issue and, indeed, to be in the company of such distinguished colleagues. I was asked particularly to talk about ethical issues occasioned by human cloning particularly as they engage in the family and it is to that that I will direct my remarks.

The reproduction of human persons may be biologically exhausting but it is not exhaustively biological. Socially mediated tasks of nurturing the young and of forming and consolidating personal identity and interpersonal roles continue the processes

initiated in conception, gestation and parturition.

People have grown extremely resourceful in developing different practices and structures for discharging these social tasks and have understood what constitutes successful completion in different ways but many strategies assign very important roles to small scale intergenerational associations of people in which special forms of interpersonal acknowledgement and recognition go on. I refer of course to families.

Now people have also shown themselves to be ingenious in coming up with different approaches to the biological side of the reproduction of persons, the prospect of human cloning being perhaps the most conspicuous present example of such ingenuity. This introduces the general question I want to consider here, if cloning were added to the array of options for carrying out the biological aspects of human reproduction how might the remaining tasks involved in reproducing persons as they are imbedded in family structures familiar to many of us be affected.

In particular, I will focus on ways in which those social tasks might be rendered harder to complete well, become less certain of their ends or more likely to be frustrated, that is on the possible negative implications that cloning human beings might have for families.

I start by roughing out some types of scenarios in which cloning might seem an attractive reproductive option. This does not pretend to be a complete catalog.

One general type of scenario I call exclusion. A person might wish to have a child but lacked a specific kind of genetic link that but for cloning would be present. A lesbian couple, for example, might wish to have a child that was genetically related to one partner and gestationally to the other but not genetically related to any male parent. A woman who carried a genetically linked disability might wish to have a child genetically related to her husband and gestationally, although not genetically, related to her apart from mitochondria.

Another type of scenario I will call replication. Here the motive is not so much a matter of the child's lineage as it is of its less relational properties. A couple might wish to reproduce via cloning in order to replace a deceased child as closely as possible or in what we might call the Ayello variation on this theme a couple might wish to have a child genetically identical to an older sib who requires organ or tissue transplantation.

A third possible scenario type I call affirmation. Here the aim is to employ cloning to affirm a relationship in some special fashion. We are to imagine, for instance, a woman mourning the death of a much beloved partner, no gametes from that partner are available but viable somatic cells are and she wishes to bear a child in her partner's image as a testimony to their love or perhaps she uses nuclear material from a child they have already had together with the same motivation.

Now these scenarios are not mutually exclusive. The

lesbian couple, for example, might be motivated as much or more by a desire to express their mutual love and commitment than by the desire to exclude from their reproductive lives and the reproductive history of their child, elements they find undesirable.

At the same time there are significant distinctions among them, a feature that complicates any discussion of the morality of human cloning per se. There is, however, a feature that runs through all of them, the marked importance they place on biological relationship. Getting a decent purchase on the moral implication of human cloning will, or so I think, involve trying better to understand why such relationships are so significant to so many of us.

The significance of genetic near indistinguishability is perhaps most straight forward in aiello type replication cases in which a new child is desired at least in large part for the medical benefits her body offers to another family member.

But in each scenario, the lesbian couple who think it important for both of them and for only them to be involved in their child's coming into the world, the grieving couple who wishes to retain as strong as possible link to their lost child, the widow who wishes to keep alive her connection to her husband, the exclusions, affirmations and replications seem most powerful if they include an important biological dimension.

Now there is nothing so out of the way about this. Most people are not indifferent between the reproduction options of

having children of their bodies as we sometimes say and adoption. The cause of this common preference is no doubt over determined. The sociobiologists have a story about it and on top of the considerations they advance it is for many people simply must easier to beget and bear than to adopt and it may strike many, too, as a more reliable way of getting children who can be counted on not to present their parents with unpleasant surprises.

But I cannot help but think that these considerations do not fully explain this preference. For example, having children of one's own body is not always easier than adoption. Consider what some people go through by way of assisted reproduction. Nor is it always a reliable way to steer clear of surprises as experienced parental hands know.

I think that another important part of many people's interest in having their own children is a response to their sense of boundedness in time of their mortality. Bringing new children into the world can be a powerful even if tacit expression of interest in, perhaps even faith in the future, and at the same time a way of connecting ourselves to that future.

Now this is clearly not the only reason why most people prefer to have children of their own bodies. If it were, cloning would be a remarkably attractive strategy. Nor does it fully explain why biologically connections to those who will survive us seems so compelling a part of this picture. Why would not enduring social achievements serve as well and, of course, for some people they do.

The hypothesis I hazard here is that our biological children strike at least many of us as the fullest and most faithful representatives of us as particular embodied persons. But I would not develop this since it is just a speculation about what is at face at least in some sense an empirical matter and it is not essential to the points I am trying to bring out that I be correct about it.

What is important is that we accept that biological connections are very important to many people and that there need be nothing confused nor whimsical about that.

Some of my concerns about cloning and families stem from two points that follow on. One is that biological connectedness may matter to children and not just to adults. The second is that it is possible to assign too much significance to biological connectiveness.

Now, is there reason to believe that biological connections may matter at least as much to many children as they seem to, to many parents? Consider those children raised by loving and competent adoptive parents but who yet retain an interest, sometimes a very strong interest in knowing who their genetic parents are and in seeking out some kind of relationship with them. Some children whose conception was affected through artificial insemination by donor have expressed similar interests and have sometimes reported that the lack of knowledge about and relationship with their progenitors is extremely painful.

Now both adoption and AID have traditionally been

arranged in ways that slight children's interest in contact with biological parents. But this is at least somewhat curious surely in a society willing to go to such lengths to bring about biological connectiveness between adults and the children they raise. Why should we so privilege adult interests and so dismiss the interests of children?

Why, to put the question in terms of my speculation about this matter, regard a biological connection to the future as a vital part of the identity of adults but not see biological connectiveness to the past as an equally vital part of the identity of children?

Now children's interest in biological connection does not tell against all the motivations for reproducing persons via cloning but it does make a bit of trouble, I think, for at least some of them. Consider the variation of the exclusion scenario that involves lesbian parenthood. Would this use of cloning present any creditable threat to the successful completion of the nonbiological tasks involved in the reproduction of persons?

Well, maybe in a world such as our's radical fatherlessness might be distressing to some children. If we think of children brought into the world in this way as genetically single parent children then if they had any desire analogous to that reported by some children conceived via AID the circumstance of their birth would render it a perfectly useless passion.

Now I do not disregard the importance of such feelings

as there may be but this is not actually the consequence I find most troubling. What concerns me more is that this kind of exclusion rests not just on the technology of cloning but upon a social and perhaps moral decision to maintain what might be called the moral distinctiveness of generations.

Consider that the child herself may not agree that her parents have been successful in blocking genetic connectiveness to a male parent might not agree that she, in fact, has no father. She is after all very largely identical to the person who contributed the nucleic material for the cloning procedure, a person who was herself conceived in the usual way. Suppose that the father of the nucleus contributor is alive, if so the child born of the cloning is genetically almost indistinguishable from his child. If the cloned child is on the lookout for a father he may seem like a good candidate.

Indeed, rather than see this young woman as a genetically single parent child we might see her as having three genetic parents, the nucleus donor and both of her parents, and a gestational mitochondrial parent, or perhaps the best way to put it is that the child has a gestational mom, a genetic mom and dad and a sister who happens to be an identical twin despite being say a quarter of a century older and gestational mom's spouse as well.

Now I am not saying that any such arrangement should seem appalling on its face to all people with good moral judgment or anything of the kind. There is no reason in principle it seems to me

why we could not relax and refigure prevalent notions of the moral distinctiveness of generations and of familial and gender roles. Indeed, in some respects we should do so and in some respects this is done.

I would hold that the patterns of moral understandings most heavily represented in the U.S. today customarily paint the roles of parent, grandparent and sibling with very different kinds of expectations and obligations. There are surely times when these roles do overlap quite without any intervention by cloning.

Still I do see a difficulty here. Who will have the authority to determine what the relationships are in families of this sort? Who is sister? Who is mother? Who is father? Who is grandparent? Particularly if the maturing child does not like the definitions she is handed.

Now what make this situation potentially a tough one is the fact that decent cases can be made out for both the position of the child who wants to ladle on to her mother's father a kind of relationship that is heavily encumbered with significant duties, the role of being her father as well, and for the position of that man who may not have slightest interest in having anything to do with the child at all.

Complicating things still further is that the decent cases I can imagine here rely on rather distinct kinds of moral understandings. The man can rely on a widely cherished principle in liberal political theory that no positive obligations without consent

principle. In other words, he can plausibly point out that he never agreed in any sense expressly or tacitly to be this child's father or anything in the neighborhood thereof.

The child can reply that families are precisely the place where such a principle links badly traditional ideas of children's duties to parents owe nothing to any such consent principle for example and will lie for her part on the moral notion that people have special obligations to those to whom they are -- on those -- to those who are especially vulnerable to them particularly if they have been involved in the creation of the relevant vulnerability.

A man in such a case might find himself in a position not dissimilar to the responsible truck driver who through no fault of her own has just struck someone. Such a driver exhypothesis is not negligent and she certainly did not choose to go out and run somebody over. At the same time strong moral intuitions suggest she should neither feel the same nor act the same about the accident as someone reading about it over her cereal the next morning.

In a circumstance such as this then I fear cloning might put us into a situation where we face something of an antimony to borrow a Kantian expression. Children born of such arrangements may have claims against the parents of the person who supplied the nucleus, claims whose honoring may be important to a child's developing sense of her place in the narrative of her family, claims relating to her sense of rootedness in the world, her particular

place in its history.

I am concerned that these claims will not be heard or that having heard them we will not know how to honor them well particularly as they collide with other morally well-founded claims that center on the importance of autonomy in the lives of persons and the importance of not being drafted without consent into burdensome and prolonged duties. Now there is a good deal more to be said about all this of course but I need to press on to consider even more briefly some features of the other scenarios.

Consider affirmation scenarios. Compare them to a use of reproductive abilities to achieve similar ends that do not involve cloning. A man suffers from a terminal illness, he and his wife both find their hearts eased by the idea of conceiving a child together before he dies, and they do so in the time honored fashion. Should this set high moral eyebrows askance? Would a practice of this kind reduce the chances of the social side of the reproduction of persons would go well?

There may be some grounds for concern. Raising a child by one's self is a tough job and one cannot help but wonder a bit about the expectations the child is going to have to face but these hardly seem reasons for developing a social policy discouraging such decisions. Do this child's circumstances differ importantly from those of a child brought into the world via cloning for a similar reason?

I have already suggested that you might well have a

claim to forms of relationship we are not well prepared to evaluate.

But problems of that sort can be largely stipulated away. Suppose the husband or the woman in the previous scenario for that matter had no living parents or no parents willing to be significantly involved in the baby's life. Or, two, that cloning in this case might seem to be almost incidental or at most instrumental. The point is really to have another baby together. If cloning is the only way of doing that then that is what we will do.

But despite these points I think there is still room for concern. One concern is that it might be hard as a matter of practice to distinguish between couples taking a purely instrumental view of cloning as it were. The point is to have a child and cloning is all that will serve. And people who are drawn by the idea that cloning will give them a child that is especially suited to the purpose because of its less relational properties who think of the child as my husband returned or something of this sort.

The second is that it might be hard to sort out the matter even within ourselves. As I have noted biological connection can have strong powers over our actions and imaginations and strong physical and temperamental similarities between children and much loved departed spouses might make the task of contributing to the developments -- in the development of the child's sense of personal identity even more difficult than usual.

What would be so problematic with the people involved to see cloning as useful both as a way to get any new child and as a

way to get a particular new child, that is one with just those striking resemblances. Here I am concerned about the domination of the biological and particularly of the genetic.

If the problem we faced in the exclusion scenario was the risk of not taking children's interests in genetic connections seriously enough the problem we face here is in taking the parent's interest in genetic connections so seriously as to lessen the chances that a child's interest in individuation, typically a socially mediated task, would be well served. But this is best discussed in connection with the replication scenario.

Being drawn to cloning as a reproductive means is often associated in the popular mind with something like replacement or replication. The cloned individual is desired because she is thought to replicate some other individual, not because cloning is a means to reproduction otherwise blocked or problematic. Another dancer just like Baryshnikov (?), another child just like our dear Jeff, another child with bone marrow just like Marie's.

If among families' social reproductive tasks include the formation of identity and if that job involves both identifying with others and individuating from them it does not take too much imagination to foresee some added difficulties here. Imagine the fears that might haunt people who had to accept that among expectations harbored by those responsible for their birth is the expectation that they would fulfill not just a certain role, not just take a preordained place in the family business but replicate a

certain identity.

But again I think there is more to this problem than a possible extra helping of psychological stress. No one is going to dance like Baryshnikov unless they work like Baryshnikov and perhaps not even then. If, as I had assumed throughout, the reproduction of persons is not solely biological but also social, effective replacement cloning may require degrees of compulsory training that go beyond what children require for socialization.

If, as Joel Feinberg has argued, children have some moral claim to kinds of education that leave them with a tolerably open future. Getting what adults want out of replacement cloning may involve closing that future off.

Now it might well be rejoined that the situations such children will face is while perhaps not optimal, not devastating either. Lots of children are kept hard at it at the barre for hours more than they would like and do not necessarily feel inclined to end it all rather than go on. Why think things would be worse for the young Mikhail.

Jeff's sibling may feel certain pressures and anxieties that his school fellows do not share but he may of course weather them just fine. Kids are pretty resilient after all and this may be true even for Marie's younger twin who has to deal with the fact that she was brought into the world to serve as a tissue or organ donor for her sib.

The Ayello variation does, of course, highlight the

problem of whether such children are being seen as means to ends solely but the issue is complicated and not strictly a matter of cloning, and it may well be that the dignity afforded to any child is not a matter determined by the motivations that propel them into existence but by the way she is treated once she is among us.

But it seems to me that the moral issue here is not settled simply by averting to the possibility that a child may be loved for herself alone and not just for her yellow hair or her bone marrow, nor by pointing out that lots of children born in ways wholly innocent of technology also get lots of bad wraps and face real challenges in the way of success with consolidating their identities.

The issue involves rather identifying clearly and vividly how cloning might heighten risks as well as offer benefits and how to keep clear about -- how to keep clear as well about who are the potential recipients of the harms and benefits, who are the responsible agents and what are the live alternatives?

Now to conclude, in looking at ways in which cloning might complicate the jobs families undertake in completing the reproduction of persons I have found a good deal that troubles me. When looking at what counts so far as I can see as an ethical smoking pistol, no evident and inescapable violation of accepted rights, no unambiguous and grave harm inevitably attached to human cloning as such, what we have instead, I think, are a number of worrisome scenarios and many concerns that need to be carefully balanced.

For if there is no clear ethical barrier uniformly outraged by human cloning so, too, there seems to me no plausible case that developing and disseminating human cloning technology is demanded by any unmistakably powerful moral imperative. There may be a technological imperative here but that is quite another thing.

From an ethical point of view I think the development of policy regarding human cloning cannot be settled by the decisive application of clearly determinate principles but rather requires prudent judgment.

Human cloning might console some people in their grief.

It might relieve some of the fears of bearing children with serious handicaps. It might contribute to the destabiling of heterosex's biases and families.

But it can also offer adults a set of benefits at the cost of risks to the welfare and dignity of children in light of the reasonable concerns that cloning elicits and the alternatives available to address human problems as grave or graver than those to which cloning might speak.

Assigning priority to other forms of research therapy and human endeavors it seems to me at this time the more prudent course.

DR. SHAPIRO: Thank you very much.

I thank all of you very much.

We will move now directly to questions of which I am sure there will be quite a number. Just let me remind those of you

who are speaking to turn off your little red light when you are through. It just makes it easier for everything to be heard.

Let me start with Eric.

DISCUSSION

DR. CASSELL: Leon, I would like to address this to you because you are so -- such an articulate spokesman for a point of view that we have, in fact, heard considerably in the last few weeks.

The point of view is an appeal to the fundamental basis of what makes us human and to pick one sentence out of what you said, "children made rather than begotten." Now I think that the real question I have to say to you, are children made rather than begotten? What, in fact, does make a child? What does "begotten" really mean? It cannot simply mean the act of coitus because if that is what it is it represents humanity were it not well served by the picture.

(Laughter.)

DR. CASSELL: Though it has its kicks.

On the other hand it seems to me that growth and senescence and the development of ourselves and the world of others, the world marked by relationships we heard earlier this morning, the importance of relationships and two major religions, relationships with ourselves, with family, with others, with spirit, with a concrete subjective universal that we all really are connected to. That that is -- that when the child is begotten it is begotten into

the conception of all of that. It is conceived into that world.

When we see -- when I see patients about having trouble having children or going on to IVF, they do not skip down to the IVF booth to have -- they have agonized. They have gone through all kinds of trouble. No, it is not going to work and then maybe it does. Maybe it will be twins and all of this human concern and agony goes on and then finally it is in utero and all the things that you know very well, and a child is gotten, and then they are pushing this child around.

I mean, the fact of humanity, the thing that makes us human is all those things but it is also artifice as Joe Fletcher used to point out. It is artifice. It seems to me that if you were in -- that you, specifically, if you want to focus on humanity you should be teaching us how we remain human with the fact of artifice without merely saying no.

DR. SHAPIRO: Dr. Kass?

DR. KASS: Thank you very much, Eric.

We are friends and I am used to this.

(Laughter.)

DR. KASS: We will have to finish afterwards but for -- yes, but briefly, first of all, humanity is a much -- our humanity consists in much more than how we come into the world. I grant you that completely. Nothing I said would have denied it.

I was -- I want to make a distinction between begetting and making which I did make. It may have gone too fast. That in

what is ordinarily understood as begetting we bring an existing being into the world as a result of what we are rather than by explicit design or intention. In other words, we say yes to a kind of process but which works through us and which has, therefore, a kind of meaning for the relation between ourselves and the thing that comes forth.

We bring forth a being in the same way that we were brought forth and it is in a way though we say yes to it, it is not our creature. In an act of making there is a difference between the maker and the thing made and it is never a relation of equality. Even if you love this most beautiful object that you have made you stand in a relation to it of superiority. That is somehow the difference between natural begetting and human -- and any kind of human artifice.

Now I grant that this is just the first step of a process which may never be followed out of what I would call turning procreation into manufacture, begetting into making, but I think that insofar as the child is the product of our conscious design with respect to his genotype, we are no longer simply producing a child out of what we are but by rational design.

On the last point, you know, thank God for technology.

It is a blessing and I am not standing here as somebody who wants to dismantle the machinery. But when the technology comes to go to work on what the human being, him or herself is, and begins to transform all of the boundaries by which we take our bearings, I have to be

convinced that you have got something to put in the place of that, otherwise what you have got is free creation with no standards.

I do not see in this area that there is anything that comes out of the notion of our freedom to be ourselves that is going to set any of the kind of boundaries that John Robertson would like to see set or things can be set. So I think that art has to be governed by some kind of notions of good and bad, otherwise it is wild.

DR. SHAPIRO: Thank you. Carol?

DR. GREIDER: I have a question for Dr. Robertson. Although my question actually goes to something that all of you said I will direct it specifically to you.

I noticed that in your talk you show a very great faith in science. You take as a premise that one can easily obtain an adult human clone and as a scientist I appreciate the faith in science. Yet at the same time as a scientist I am taught to be deeply skeptical about any new technologies that come up.

So yesterday as we heard from Shirley Tilghman the actual science behind this cloning issue is at a very, very early stage. We know very little about it. So my question for you is how might you change your benefits and harms given that we know very, very little about this science?

DR. ROBERTSON: Well, I did not read the second paragraph of my statement where I acknowledged that, in fact, we are a long way from doing any kind of human cloning and I would just

reiterate that. I am -- I was acting on the assumption that if it were possible to do what some of the issues would be. But I see us a long way away. I do not really have a lot of faith that this is going to develop very easily at all much less that there will be a lot of demand for it. But if it did become available then here are some of the issues that concerned.

I mean your specific question is how then does that affect my analysis of benefits and harms? Well, given that it is still highly uncertain it would seem to be then a very poor time to ban research that could lead to those possible benefits or those possible harms because it is still too early in the process.

To the extent that there is uncertainty about outcome that is an argument for not banning going forward even though we recognize we may never achieve a realistic possibility of doing it.

DR. GREIDER: What about any possible harms that would come during the research? Do we take those sorts of things into consideration?

DR. ROBERTSON: Okay. Well, if you are talking about research, let's distinguish research with cells and early embryos from research with transfer of cloned embryos to a uterus. Okay. I think that is the significant division point. I do not think unless one takes a strictly right to life view one can show real harms at the embryo level prior to transfer. One can make distinctions about whether the government should fund it or not but in a strict sense I do not think one can show harms there.

The real problems come when one thinks one has developed that science well enough to begin the idea of a transfer and there one -- that should be done only very carefully. IRB review, perhaps other kinds of regulatory oversight.

But at that point when it is deemed feasible to transfer I think one would have enough evidence to think that one would not be producing a severely disabled child and thus might go ahead. Just as with basic IVF the first Louise Brown's embryo was transferred there was no guarantee how she was going to turn out but there was enough evidence from prior work that she probably would turn out all right.

So I think if we are at that stage where the science of the embryo cloning has worked out well enough and enough animal research that we would have, I think, an acceptable basis at a certain point for going the next step without risking serious harm to offspring.

DR. SHAPIRO: Thank you.

Alta?

PROF. CHARO: I would like to move the discussion slightly away from the bioethics of cloning and perhaps to the ethics of doing public policy on issues like cloning.

Dr. Kass suggested at one point that it is extremely important that we reassure the public about the larger scientific agenda for other aspects of genetic research and of cloning research that does not involve babies. For that reason we should seriously

consider some kind of statement on transfer for birth. In fact, I would love you if you would clarify whether you were advocating a moratorium or a ban since both would create the social opprobrium that you point to as the major limiting factor for scientists.

John and Ruth, I wonder if you could actually identify any specific benefits that could flow uniquely from cloning with humans to the point of bringing babies into the world, any uniquely human benefits that would outweigh just that concern about the larger scientific agenda in light of the fact that umbilical cord blood research is already under way for the use of stem cells for bone marrow transplantation, that infertile couples have a variety of options. This would be a very unusual remote addition to that array but certainly would not be the only option, et cetera, et cetera.

If you can point to specific benefits that we would absolutely have to forego if we were to simply opt for reassurance of the public so we would know what the honey is that we would lose along with the sting.

DR. SHAPIRO: Dr. Macklin?

DR. MACKLIN: I would like just to understand whether you are talking about research going forward on cloning that might answer a lot of scientific questions which I said in my presentation I cannot even begin to identify but things about the cells being turned on and off and all kinds of things or do you mean the actual production of human clones?

PROF. CHARO: Production -- what I am talking about is

children born whose origins are located in a cloning experiment in a laboratory. "Dolly" cloning in humans because that is exactly what Dr. Kass was advocating that we disapprove of. He was clearly distinguishing that from other forms of research and I want to understand what benefits uniquely -- what benefits we would absolutely have to forego if we were to adopt Dr. Kass' suggestion.

DR. MACKLIN: Yes. That -- I think you cannot separate that -- the attempt to answer that question from the other half of your question which is the reassurance of the public, that is there is not only one way to reassure the public or there is not only one way that can justify given the great public fears or the public concern by showing what all the benefits might be.

The question is even if we cannot identify such benefits, and I would be hard put to do so as societal benefits rather than the benefits of the particular individuals because most people are not infertile and most people will not confront the need or desire to use some bone marrow from another child, et cetera, et cetera. So this is not what people in the whole society would view as generally beneficial.

But I think there is an imperative to educate the public much better than the public is now educated about what would be some of the realistic or actual dangers that would flow from cloning and also to clarify something that John mentioned, namely that there may be many greater dangers. When the public talks about cloning they are thinking about genetic manipulations, enhancement

and a whole array of things that do not require cloning.

So I think educating the public about just what cloning is and also educating a little bit more about what the genetic manipulations might be could, I am not saying will, but could reduce some of the fears.

DR. SHAPIRO: If I could interrupt for a second before turning to Professor Robertson. I am going to reinvoke yesterday's ruling. One question to one person is about all we can take because we are going to run out of time.

DR. ROBERTSON: Yes. Just a couple of points in response. First of all, the public is not uniform in its reaction. Many see possible benefits and are in favor of cloning at some point. So let's just be careful not to read it as all negative reaction. But I mentioned two benefits that I think would be tangible benefits for infertile couples. One is being able to have a baby through IVF. It may be essential for that to occur that they be able to clone embryos. Now they would not be cloning an existing adult there. They would be cloning embryos.

PROF. CHARO: No. But the only thing we are talking about is the "Dolly" type cloning. The only thing we are talking about is somatic cell from an adult clone.

DR. ROBERTSON: Okay. The second -- well, okay. If that is the issue then a clear cloning of embryos as a part of IVF is acceptable. Then if we go on to is cloning of an adult ever acceptable with an adult's consent of course and perhaps, as Jim has

pointed out, we will have issues about that adult's genetic parents' involvement as well but a case there is embryo donation.

Instead of taking an embryo from an IVF couple that might not be -- might not be very healthy why not create an embryo from an adult who is willing, who will not be involved in the rearing of the resulting child, that may serve the needs of those couples who lack gametes themselves but have uterine capacity and want to rear a child. There are two specific benefits there.

If you want to -- what I see as a key issue that has come out in a lot of the discussion is the self-cloning where one of those parties then ends up rearing. I think that is the hard case. I think that is the one that causes most trouble for people. So if we can distinguish that from these other cases I think we will make a lot of progress even though the answers to the self-cloning and then rearing the clone will take more time to work through.

DR. SHAPIRO: Thank you.

Jim?

DR. CHILDRESS: I thank all of you very much. You have really served us well in presenting clear and powerful arguments for your very thoughtful positions.

Operating under the new restrictions that have been imposed I will let John and Ruth choose which one will answer this question.

(Laughter.)

DR. CHILDRESS: Because what I am interested in since

you both proposed a regulatory model rather than a model of a ban or a prohibition is whether given -- and in some ways the way Alta raised the question it seems to me does not quite work and maybe the way we structured this morning does not quite work for your presentations because it is really benefits whereas both of you are really working -- particularly John but also Ruth -- with the kind of liberty of freedom model, and then asking if we started with that kind of presumption what kinds of harms or violations of rights would have to be present to justify overriding scientific or reproductive liberty? So it is not just a risk/benefit analysis. It is the way it is set up. But as you propose regulations did you notice -- either of you notice any major differences between the kinds of regulations you would propose in this area?

DR. MACKLIN: Could I hear the last part? The actual question difference?

DR. CHILDRESS: Did you notice any differences in the actual regulations both of you were proposing today?

DR. MACKLIN: Well, I gave examples but did not specify. So, for example, the -- I do not even like the word "consent." The initiation by an individual of a request for cloning is an example that in other words that no adult cloned without his or her consent, and this is one of the scenarios. I mean people -- either the scenario or the kind of response that my secretary, who is a thoughtful and intelligent woman, said, "I don't want them cloning me." Well, who are they and what would ever put him or her in that

position? Similarly, well, what if someone decided to take a little biopsy of Michael Jordan while he is in the barber chair or something?

I mean, these are some of the worries or concerns. So flat out the idea that no cloning would take place without the voluntary initiation of an individual -- I use that only as an example. That is not a regulatory structure though.

And I cannot really say whether what I am envisaging is different from what John is envisaging because he would have to speak for himself thereby violating the chairman's rule.

(Laughter.)

DR. CHILDRESS: It seems to me this is one important question for us if I could, Mr. Chair. These -- you are proposing to us that we take a regulatory model and I guess as we look over your materials and I hope we will have the written materials from everyone, I guess one of the things we have to consider is what are we going to build into that and that was the reason for asking the question, whether you saw any differences in what you were saying.

DR. SHAPIRO: Dr. Robertson?

DR. ROBERTSON: Yes. I agree totally. No cloning without the consent of the clone source. If they have already been born that will raise some difficulties if one is cloning an existing child that one would have to take care of here but if it is an adult one would have to have the consent.

With regard to cloning, with regard to infertility,

embryo donations, things of that sort, it may be once we get passed the experimental stage with IRB review and things of that sort, it may well be that professional guidelines and professional practices can take care of a lot of that.

Despite the scandal at the University of California at Irvine most IVF doctor are pretty careful about who they treat and how they go about it and they respect the kinds of concerns we would have. They do not just take any patient. There is often psychological screening.

It may be that cloning as part of infertility or as a source of embryo donation could fit within that structure. However, that is going to be a lot further down the line before we get to that stage and it may be that there are some changes in how that whole industry works. It seems to me that a good start would be to try to build it into or assimilate it into existing practices with regard to ART for those uses that are related to ART.

DR. SHAPIRO: Thank you.

Bernie?

DR. LO: I also want to thank all four of you for very thoughtful presentations and as I have done throughout the day urge you all to provide us written materials.

My question is for Dr. Kass. Among the concerns you raised was that cloning would violate sort of the orderly progression of generations. I do not know if that is the exact phrase. I wanted to ask you to say a little bit more about those concerns. If you

could articulate for us more specifically what source of harms or wrongs would that entail and who was wrong? I did not get as clear a sense of what you meant by that in some of your other categories.

DR. KASS: Thank you very much. This is hard to do. Without just trying to repeat what I said let me think aloud about it. It is not so much that there is a specific harm in the sense that John Robertson means it. I think that there are more ways to do damage than tangible harm. It has to do with what is the attitude, what is the disposition for the next generation when one undertakes to try to plan its future in this way.

And the suggestion was that what we do, whether we know it or not, when we engage in procreation is -- something is working through us if I may speak this way, whose meaning is we are in a way saying yes to our own disappearance. We are initiating new life which we -- if we know what we are doing will take our place. And that is a manifestation of the limitations of our control and a clear acknowledgement of our finitude.

To try not only through cloning but to various other forms of nontherapeutic -- I want to emphasize nontherapeutic genetic manipulation of offspring is to attempt to control that future which is, it seems to me, a contradiction of what it means to initiate that future. It is not a question of a kind of concrete harm but it is a transformation of the meaning of the relation between the generations.

It seems to me it is a profound misunderstanding and

with that misunderstanding might go all kinds of other difficulties, some of which we now already practice. I mean, parents are sometimes also confused about the relation of their children to this open future. But it seems to me to the extent to which we begin to determine the genotype of the future generation to suit our wishes and goals for them, to that extent it is a kind of deep misunderstanding of what it means to let that life go forth without us.

DR. CHILDRESS: I have two people on the list that Dr. Shapiro left with me. David Cox and Tom Murray.

DR. COX: So my question, it was hard to choose but I am going to pick Dr. Macklin, okay, and I would like to come at this sort of in a similar direction as Dr. Greider did, okay, coming at this as a scientist and saying, okay, this is great, let's focus on concrete harms because, you know, let's nail down what these babies are.

Now the problem is, is right now we have almost no information about anything about concrete harm so as a scientist it is difficult to go out and find out what they are. So then we have to get some more information and say what scientists do is they do research. But, okay, in general, okay, what scientists do when they get more information in things that apply to human beings is they do research on other things besides human beings to start with and they do it on animals to start with.

Now that is not always the case but in general it is

the case. In one particular place it has not been the case is in the case of human reproduction. For reasons that are not completely clear to me but certainly that is historically the case, all right.

So now we talk about cloning in terms of what the real harms are for the cloning. So certainly as a scientist I see in terms of policy a position where one could continue with extensive research in animals for a long time to find out what the harms are in animals, right, and get some more information.

Given then the fact, okay, that not all but a fraction of our society, okay, has difficulties dealing with embryos as human beings and defining what human embryos are, whether they are implanted or not implanted, okay, what is wrong with learning information about, okay, doing the research in animals right now which will have to do for quite a considerable time, okay, and putting a ban on doing the research on humans.

So just laying that out as a policy scenario, okay, what is wrong with that?

DR. MACKLIN: Actually everything is right with it. I did not include in here but in partial answer to the questions about public policy or structure that Jim Childress asked, first I would say that human cloning would have to remain in a research mode for a very, very long time. That is not be something that gets out into practice such as IVF and egg donation or the other ART's.

Secondly, adequate animal work, including primate research, should proceed even the first attempts to clone humans. So

I entirely agree with that structure. The problem is that the regulatory structure, and this fits very well what the regulatory structure is for things like drug and device approval.

But the reasons historical or otherwise why the human production research have not followed the same pattern, I mean one is that there is no bright line as there is in FDA approval. So, I mean, that is just a fact of whether something has to fall under the FDA in order then to be approved -- under their jurisdiction in order to be approved and then become established treatment. So that is one reason.

The other has been precisely the ban on federal funding for embryo research which clearly has put it into the private sector and even though I am sure there are very many, and I know very many responsible people who have been doing that research, it does not have the same opportunity for oversight.

Therefore, what you propose is exactly what I would endorse but we would need some additional mechanism or structure to cross the line, that is to answer the question when has there been sufficient animal research? Since there is nothing that is analogous to the FDA we might want to put something like that in place following adequate research on mammals and primates. Then we would get into the research or human experimentation on human embryos and that of course is a problem for the other reasons. But nevertheless that would be necessary.

If it would be difficult or problematic to experiment

on human embryos in cloning surely it is worse not to experiment and to leave this to practitioners, the marketplace or whatever.

So I would argue that there should be something analogous to the structure that exists for drugs and devices that would have to govern this and it might also govern other kinds of developments which some people think have proceeded too quickly as well such as ICSI or other assisted reproductive technologies that were not for a sufficient length of time in a research mode.

DR. SHAPIRO: Thank you.

Tom?

DR. MURRAY: Thanks, Harold.

Well, first let me join in the chorus of praise and thanks.

John and Ruth did a wonderful job of laying out for us I think very, very clearly how such moral ideas as liberty, harm and rights would play out in an analysis of human cloning.

To Leon for digging into questions of meaning which are, indeed, very difficult to express satisfactorily. But I do not know anybody who does it better than you do, thank you.

And, to Jim, who so far has gotten off awfully easy in the question period, for really helping us to think through some of the questions and the implications of human cloning on families.

I had a couple of questions but I am going to observe the chairman's rule and ask only one. So I will ask it of Jim since you have not been asked one.

Jim, at one point you referred to creating a child especially suited for the purpose and you have, I think, at more than one point in your presentation spoken of control. Now we have heard sort of efforts to exercise control over procreation described a lot of different ways. We have heard it described, I think, as hubris. We have also heard people sing its praises not necessarily in the context of cloning but in other contexts.

Joe Fletcher's name has been invoked many times and I always have read Joe Fletcher to have said that the more artificial the better. Control as a positive value not really -- I think an intrinsic positive value and not merely an instrumental value.

But I wonder if you can reflect for just a couple of minutes for us on how you think sort of the moral valence of control in this context, what gives it its moral valence and how does it play out?

DR. NELSON: So the question comes down to something like should we think of control as it is exercised in these contexts as something that is positively good, as something that is tolerable as a means to certain types of ends, or is it something that is morally dubious or problematic?

Well, it seems to me that if you -- suppose we started out by taking sort of a Fletcher view about what a wonderful thing it is for human beings to control their world and what an expression it is of who they fundamentally are and then ask is that a view that is sort of defensible to -- I mean, is -- one might -- it seems to me

one might take that view, okay, and still recognize areas where control as either an end to be sought or a means was inappropriate. But of course there could well be controversy about that.

When Rabbit Tendler was talking about his children today, all of whom were ordained and had they not been ordained they would have had to answer to him in no uncertain terms I had -- I had sort of mixed feelings about that. Part of me was saying, "Well, gee, isn't that a wonderful assertion of the significance of tradition and sort of the transmission of ideas and ways of life through generations." And another part of me thought, "Well, I mean, if there is anything to this notion of children having some claim to an open future that has got to violate it as much as cloning does or at least put pressure on it in the same way that cloning would."

My sense is that the most defensible position would be that not matter how enthusiastic you could reasonably be about cloning as something that was a lack of being human as opposed to something that was -- something that we ought to regard as dubious or at least dangerous. There would be limits and shaping -- shaping selves, shaping new generations in ways that were aimed at not leaving, I think, plenty of room for folks to engage in the world in distinctive ways, it strikes me is one of those problematic -- one of those problematic ways.

So that if -- if one of the concerns one might have about cloning is that since it is only going to be partially effective in instilling dispositions and that social understandings

would have to be installed on top of that if one were really concerned about achieving a certain kind of outcome in terms of a certain kind of person, that that would put pressure on what I think are well defensible views about the kinds of lack of control, the sort of liberty we ought to accord to our children.

DR. SHAPIRO: Thank you.

Unfortunately -- Diane, I will turn to you in just a moment if you do not mind. Okay?

I will have one more question from members of the commission and then if any of our panelists would like to say anything I certainly would go on.

Diane?

DR. SCOTT-JONES: I will direct my question to Dr. Macklin. Dr. Macklin, in your comments you mentioned that you envisioned that individual humans would be cloned and not herds of humans. Does that mean that you think that it would be wrong to clone persons more than once even in the case say of a woman who is -- who would like to create a child by cloning but would like to do it twice so that she would only have to bear -- have to go through a pregnancy once?

DR. MACKLIN: Well, I think two does not make a herd.

(Laughter.)

DR. MACKLIN: And what I was particularly pointing to were again the scenarios not so much of families cloning herds but rather some other government, some evil person with power or

authority who would clone a herd with certain characteristics or certain properties (a) to be slaves; or (b) to be builders; or (c) to be superhuman or whatever. I mean those are the kinds of herds.

I do think -- I mean we may be quibbling at some point about the numbers, okay, but I do think that the replication of very many identical individuals would take us very far afield from what could happen in nature and might, therefore, be quite different from the continuum along which that John Robertson and I have been suggesting, that cloning might fall at one extreme end of a continuum. Where one draws that line I do not know but again I think it is important to -- if we are thinking of the production of clones, and I am using the words -- I am not trying to use euphemisms.

If we are talking about the production of clones in the family setting it is highly unlikely that anyone for any reasonable -- in any reasonable plan is (1) going to want to have a whole bunch at once. It is hard enough to raise one child. People have twins and they can handle it. Triplets are pretty tough.

So at most we might be talking about people separated by years, a few years, and then they would simply not look like twins. I mean, the picture -- the image we have of identical looking people running around is simply not what would happen and that is why I use the example of older sister/younger sister or even parent and child when we see great similarity between people who are genetically related.

So we would not have an identical herd even if we had

more than two or three but certainly outside of the setting where individuals might be cloned in the family setting -- I mean, there should be I would argue a prohibition that any agency, government or whatever should have -- be able to have access to genetic material and clone herds. Families are not going to do that.

DR. SHAPIRO: Thank you. We are running into some logistical constraints here this afternoon so I apologize to members of the commission who still have questions. I do want to allow for any final brief remark any of our guests would like to make.

Professor Robertson?

DR. ROBERTSON: I wanted to respond to David Cox's point of a few moments ago suggesting a possible line you might draw is animal research in cloning but no human research in cloning until some later point. I think you need to be very careful in drawing that line. I am not sure that really is a defensible line. It may be at the level of federal funding of research but a recommendation as nationwide policy no such research I think runs into a lot of problems of possibly interfering unjustifiably with scientific research.

Plus there is always the problem, well, when is there enough animal research. I think an IRB overseeing privately funded research may well say, "Well, you should not go forward until -- you know, unless you have a very good reason for extending it to human embryos," but I think there would be serious problems if you try to make that or recommend that as a nationwide ban.

There may be many reasons to go forward. Plus the harm to early embryos are not going to be transferred. Some people are upset by that but a lot of researchers and others are not upset by that. So it seems to me that one should be very careful about that, drawing that line. I do not think it would be justified as a matter of national policy that may well affect federal funding.

DR. SHAPIRO: Thank you.

DR. COX: I clearly got your attention.

DR. SHAPIRO: Thank you.

Professor Kass?

DR. KASS: Please, I do think that one of the ways that you might consider this question as -- and I confine it really only to the question of whether we should allow implantation to produce a human clone. Alta Charo's question before.

I do think that one ought to ask one's self the question on whom should the burden of proof be placed. On those who think that this is -- should be banned and require the other people to make a compelling case why we should allow it or should we treat this as we have treated so many other things in a free country to say, you know, you can do as you wish and make a -- and make the opponents make the case.

I would strongly urge given the unique character of this and the public concern about it that we place the burden of proof as Alta Charo tried to do before on those to say what -- show us why we are somehow doing somebody some great harm by enacting a

ban not on cloning research as such but on the attempt to create a human child by means of cloning. I would urge that that be certainly considered and preferably adopted.

Thank you.

DR. SHAPIRO: Any other comments, members of our panel?

Well, once again let me on behalf of the commission thank our guests very much for being here.

(Applause.)

DR. SHAPIRO: I have an important logistical announcement for the commissioners, especially those that may be registered in this hotel. The absolute drop dead time for checkout time is 1:00 o'clock. It is already an hour later than their normal checkout time.

DR. HYATT-KNORR: That does not go for the speakers. It goes only for the commissioners.

DR. SHAPIRO: No, that is only for the commission members, not the speakers who may have other arrangements. But we are, of course, running behind schedule. My proposal is that we try to reassemble approximately an hour from now to leave time to checkout and at least a quick lunch. 1:30 approximately. Thank you.

(Whereupon, a luncheon recess was taken from 12:31 p.m. until 1:50 p.m.)

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## A F T E R N O O N     S E S S I O N

(1:50 p.m.)

FUTURE MEETINGS

DR. SHAPIRO: Colleagues, once again I would like to begin our session if we could begin.

Colleagues, we are going to begin our afternoon session now.

We have a need to consult together on what has turned out to be some difficult logistical planning, namely to try to identify a meeting in April or May, or June where some reasonable subset of this committee could, in fact, assemble.

We will be back to you -- the first message is we will be back to you over the weekend or Monday morning with narrowing the options to see what we can do so we will be directly in touch with you. That is the good news.

The bad news is I have to at least take a rough poll here of how many commission members might be willing to consider meeting on a weekend day because it is going to be very, very difficult I assure you during the week. We can do something but weekend day --

DR. HOLTZMAN: Where?

DR. SHAPIRO: Well, answer the easy question first. So people do not have any -- does anyone have a fundamental objection to meeting on the weekend if that turns out to be the best day?

(No response.)

DR. SHAPIRO: All right. If you could -- if it is possible before you leave today to consult your calendars and see which weekends are open. If not, we will renegotiate this on Monday and just do the best we can. It is going to be difficult but we will try to work it out as best we can.

COMMISSION DISCUSSION

DR. SHAPIRO: Now as you know, we will as we start to move towards thinking carefully about our report there are particular individuals on the commission working on various aspects of things and we have some very small ad hoc working groups who may help us draft particular parts as we get farther along as we go ahead. I will appoint leaders of each of those working groups as we understand what ones we need and so on and so forth. That is still in front of us right now.

But, David, you -- Carol is not here yet. You wanted to just let the commission know regarding the commission's request for certain papers in the science area.

DR. COX: Yes. I am -- actually our bucket, okay, which is Carol, myself, Diane and Steve, okay, met at lunch and discussed this, too. Previously when you had met with Carol there were two papers we were talking about. One was a paper that would be primarily the state-of-the-art of the science in animals right now and that is not just mice but in livestock and we had said previously that is going to be Janet Resant and Matt Scott. Okay.

The second paper is one dealing with what would be the

experiments that would be done in humans and towards what end. We have had Dr. Stuart Orkin who is a well-known scientist in this area willing to write that paper. So the group talked about it and so he has agreed to do it and if that is okay with the commission then we can get him to work on it.

DR. SHAPIRO: That would really be fine. I am very pleased you were able to contact him and he has agreed to work on it.

Can I just ask you a question, you or any other who has been in touch with him, regarding -- I take it with either of these papers, as you understand them, would sort of articulate a research plan if one were to go down that objective. What would the research path look like?

DR. COX: I think that the two papers are slightly different in what our committee, and actually, Steve and Diane -- you know, if I am not representing this right, please jump in. The -- what we want to do is lay out a framework for both papers and we are doing that, our committee is doing that by e-mail over the next week. But right now the plan is in terms of the animal research what is actually done. Okay.

In terms of the human research the charge to Stuart is not think so much right now of the ethical implications but what he would view as a scientist as the good benefits that could come from this and how we would proceed to generate those benefits. What would be the scientific experiments that he would do? And not to -- I am not saying not to consider the ethical issues but in the context of

doing good benefits go through and say what the experiments would be. Then they come back to us and we then filter that through our other committee.

So that is the plan, Harold.

DR. SHAPIRO: Thank you. Any other comments? That is very helpful. Thank you very much.

With the assignment of those papers, some of you may recall the letter I sent to you March 3rd just after we had gotten this new assignment from the President and I outlined a series of steps that we wanted to take. I know most of you do not have that letter in front of you and there is no reason why you have to have it in front of you but there were a series of steps, all of which have now been taken, so that we are well underway in that respect.

Now -- so we will have to postpone settling the meeting dates until we get back to you Monday and if you can give us information on which weekends you might be available in May -- in April and May, please let us know. If not we will be back to you on the phone to get that information as soon as we can.

Are there any other questions, matters of logistics or issues that the commission members want to address now because if there is not we are of course running late this afternoon but I am anxious to get to the public comment session while as many commissioners as possible are here.

Alta?

PROF. CHARO: Yes. I wonder if we can maybe clarify

the scope of the work that we are going to try to do in conjunction with these papers. The President's request came on the heels of the announcement of "Dolly." Obviously it was triggered by the possibility of human adult somatic cell cloning with transfer to initiate pregnancy going on to birth.

His request was not triggered by existing animal research that had done exactly this with embryonic cells that were undifferentiated and his request did not come in conjunction with concern about embryo research per se which had been the subject of concern several years before.

So one scope that seems entirely in keeping with the nature of the request we got is a scope of the analysis that is limited entirely to a human analog of the "Dolly" experiment and nothing more. Although obviously they are closely related forms of research and I just want to understand better in the context of working with whoever it is that you put into the bucket for law and policy over time and kind of outlining policy options and beginning to understand how they interplay with the subject matter at hand, what the subject matter at hand would be.

DR. SHAPIRO: You mean how broad the subject matter at hand would be?

PROF. CHARO: And my initial take being that it would be perfectly broad enough to handle the human analog of the "Dolly" experiment only.

DR. SHAPIRO: My assumption had been that that is

certainly where we would start although it was very difficult for me in trying to think this through conceptually to make that a watertight decision depending on how our own thinking on some of the moral and ethical issues evolved. So it was hard for me not to be interested in what other commission members think to really make that a watertight set of compartments because of some of the comments that people made in the last couple of days and my own trying to think it through to grapple with it. But I -- there are lots of benefits to proceeding that way. I certainly recognize that but I would be interested in what other commission members think.

I know, Bernie, you had I think expressed yourself on that issue a few weeks back.

But in any case do any other commissioners have some views of this?

Yes, Eric?

DR. CASSELL: Well, I think that is where we might end up, Alta, and I think that would be a useful thing to end up in a position like that but on the way there we would have to make it clear why we got there and why in the public mind the public mind is confused with all of these other issues which when we get down to it really do not represent the problem so we are absolutely clear what the problem is and then when we get papers like David was talking about are there any benefits or not and so forth so that we have to get to that point as part of the process.

DR. SHAPIRO: Other comments?

Steve?

DR. HOLTZMAN: I think, Alta, it is also obvious we are going to have to contextualize any recommendations in terms of, for example, where the group came out two years ago in embryo research, how different, how the same, et cetera. We cannot avoid it.

PROF. CHARO: What I am trying to do is get some clarification about whether as we begin to try and make lists of policy options and compare the options against the existing legal landscape and what would happen if you did nothing or adopted one to know what we have to be checking on and not being sure what we have to check on means you have to check on research that involves blastomere separation, nuclear transfer from embryos, each one with or without transfer, adult somatic cell with or without transfer.

It multiplies now by six times the number of situations that have to be handled in about 60 days now. I am just trying to get some clarification. I understand everything has to be listed in terms of what it is not about or what it is about but I just want to know what in the end is about.

DR. SHAPIRO: David?

DR. COX: Yes. As bad news as that it is, though, based on the testimony here, okay, talking about just narrowing this to cloning of human beings as we have talked about with the somatic cell, okay, into an enucleated egg, okay, that is embryo research and if we do not know the laws, okay, on that then we are --

PROF. CHARO: Obviously, yes. But it is different than

having to go back and revisit all the other forms of embryo research that are implicated.

DR. COX: Absolutely.

DR. SHAPIRO: Any other comments or questions?

Bernie?

DR. LO: With regard to the law and policy bucket I mentioned to Alta during the break that I would find it very helpful if someone could help us think through the pros and cons of three very large approaches to this. One would be prohibition which may be a criminal prohibition. The second would be sort of regulation as opposed to law. A third would be voluntary professional guidelines. Broadly speaking those are the big categories of recommendations we might choose to recommend.

What do we know from other contexts about the usefulness and the effectiveness of those three different approaches to controversial biomedical technology interventions?

DR. SHAPIRO: Carol?

DR. GREIDER: I would just like to ask a fourth which would be some sort of a review, kind of like RAC type model.

DR. SHAPIRO: I certainly expect those of us who will be thinking through in the next weeks the various policy based approaches to look at all of those issues in the context -- precisely in the context that Bernie has mentioned.

DR. LO: Can I switch hats and talk about the ethics bucket or subbucket or ice bucket for a minute?

(Laughter.)

DR. SHAPIRO: Yes.

DR. LO: I want to say that I found very helpful the panels we had over the last two half days and I think a lot of the concerns I had before this meeting about trying to understand and articulate and delineate the ethical issues they have helped us a long way. I was thinking of how we can we get even more sort of marginal return for the tremendous investment these people have given us. And in addition to getting what they prepared as comments, I wonder if we could ask all of them to amplify their remarks in several ways.

One, I think from the religious perspectives that we heard from, obviously a lot of their conclusions -- your acceptance of their conclusions in large measure may depend on whether you accept their presuppositions, especially their sort of scriptural basis. But I would also like to hear each of the religious people say given that we are a pluralistic society in which not every one would accept their religious, theological, scriptural starting points, what would they want to say to those people who -- people of good faith who do not agree with their religious starting points, what sort of message would they sort of want to convey to sort of in a sense the nonbelievers?

And then secondly I would ask all the panelists, both the religious and I forget what we called the last session this morning, to invite them to amplify their remarks based on the larger

context of the discussions that we had so that, for instance, when many of them were asked -- some of them were asked questions which really sort of pushed them into the policy recommendations sphere and given the sort of inability to ask all of the people all of the questions it would be useful to get comments from those who did not get a chance to respond on how they feel about some of the issues.

So I would like to suggest that as a matter of sort of procedure for all the people that spoke yesterday in the letter that thanks them again for their contribution we sort of invite them to go a little further.

Then in addition to that I was -- wanted to raise the question of asking some of the people who presented in more of the ethics sphere, particularly those whose ideas are not readily available elsewhere in writings they have already published to pursue this further and either to commission a paper or ask them to come back with further thoughts.

We may differ on who we would like to sort of pursue things further but as we had talked in the bucket about asking other philosophers or ethicists to come to subsequent meetings to comment we may get more of a faster turnaround by sort of asking more of the people who have already come and listened and participated in deliberations as well as calling in some other people.

So I just wanted to put those out there as an approach.

DR. SHAPIRO: Well, let me make a particular suggestion. I know Tom has something he wants to say also.

First of all, I think in conversations that Bernie and I had over the break, a suggestion came up that we, in fact, share the written testimony where that is available and the transcript where the written testimony is not available with those people for whom we have already commissioned papers. So they should know what it is we have been hearing and perhaps their work can interact and I think that would certainly be very desirable and we will make every effort to get that done as quickly as possible. It is an excellent suggestion.

Regarding inviting our guests to further engage the issue I am more than happy to do so although I do not want to commit them or have them believe that we can sit here and commit them but we will certainly invite them to do so if their interest and time allow them to help us even further. So we will make -- if they do not object we will make that request understanding that I know all of them are very busy and have many other commitments as well.

DR. \_\_\_\_\_: Informed consent --

DR. SHAPIRO: Informed consent is right. We will allow them informed consent on this issue.

Tom?

DR. MURRAY: Briefly I want to concur completely with the kind of direction Bernie would like to take and with the request he would like to make that you also amplified.

I do want to note as I understood at least some of the people speaking from the theological perspectives over the past

couple of days did make an effort in some cases to distinguish between when they thought they were speaking from things that were say strictly from their scripture and/or other traditional tradition based text and when they were trying to make arguments that some of them variously labeled as moral or ethical which they thought should be accessible to anybody whether or not they were, you know, shared all the commitments within the tradition.

But for each of them I really -- even for the ones who thought they identified the argument separately I would be deeply grateful if each of them could try to frame their key points in a way that would be without ever losing touch with the traditional -- faith tradition from which they came. Nonetheless in the most forceful and accessible ways that they can the better we will be able then to incorporate those insights into our own report.

DR. SHAPIRO: Alta?

PROF. CHARO: One other thing I wonder if when you are sending out the acknowledgement letters to those people who spoke from a theological perspective, could we take that opportunity to broaden an inquiry for people that they might know who are scholars from non-Old and New Testament based religions because it was difficult on short notice for us to find somebody who speaks for the other kinds of religious faiths that are represented in the U.S. that might be profoundly different in their approach specifically because they are not sharing in common certain basic texts. Buddhism, Confucianism, and Hinduism are the three most populous. And these

being scholars may be able to offer up some names rapidly to those of us like me that who are not familiar with scholarship in that area and ask those people if they can just share any of their writings that might be relevant.

DR. SHAPIRO: Jim?

DR. CHILDRESS: I quite agree with that and also I have been talking with the person who is commissioned to write the paper in religious ethics, Courtney Campbell, and trying to identify people as well through that direction. But I quite agree with all the suggestions that have been made and hope that we can explore each of them and I am sure that the contributors would be glad, say those from the religious perspective, to amplify remarks that were made or to cover areas they did not cover in thinking about the public policy.

DR. SHAPIRO: Yes, Trish?

PROF. BACLKAR: And Native American too.

DR. SHAPIRO: We will attempt to do a lot -- as much of this as we can. I think it is pretty clear that time will not allow us to complete what we would like to do but we are going to make every effort to broaden this and ask others to contribute.

DR. LO: I just think that those of us who are making these wonderful suggestions ought to sort of and try provide the name and the contact as well rather than sort of pushing it on to the central staff who have done more than their share of putting things together on short notice.

DR. SHAPIRO: Anything else anyone would like to raise now before we move into the public comment session?

DR. HOLTZMAN: A question.

DR. SHAPIRO: Steve, yes?

DR. HOLTZMAN: I guess it is to Rachel. Can the buckets meet or are those public meetings?

DR. SHAPIRO: No, my understanding is we do not -- we have some -- they are very small informal working groups. They can meet together in my understanding to discuss matters. They are not going to be proving anything and reaching any decisions, anything of that kind.

Let me make one brief announcement. There is a public meeting which may be of interest both to the commissioners and others who are visiting here today on Monday, I guess, March 17th, that is shortly, at 8:00 a.m. there is a -- this is the FDA in Rockville -- there is a hearing on a topic of oppose approach to the regulation of cellular and tissue based products, which would cover manipulated reproductive tissue and so on. Concept papers are I understand available for that hearing if hearing is the right word. That is going to take place on Monday. That is just an announcement for those of you who are interested.

I think Amanda Rice-Norton from the FDA is here. Do you want to just sort of stand up in case someone would like to ask you some further questions. Thank you very much.

If any of you would like further information please see

Amanda as long as she is here.

Any other issues to come before the commission at this time?

If not, then I would like to go directly into the public comment session. Let me remind all those who are presenting that the rules that the commission has adopted is each person appearing with public comments has five minutes. I ask you in deference to speakers who come after you to please try your best to stick to five minutes. I will in any case indicate as five minutes is coming up that you should bring your remarks to a close.

Thank you very much.

Our first presenter is Daniel McGee from Baylor University.

Mr. McGee, welcome. When you get to the podium just press the button. The red light will go on and you will be connected.

STATEMENTS BY THE PUBLIC

DR. DANIEL B. MCGEE

DR. MCGEE: Mr. Chairman, commission members, I appreciate this opportunity to speak to you. My name is Daniel B. McGee. I am Professor of Christian Ethics at Baylor University and have taught a course in bioethics there since 1968.

Although I do not claim to represent the views of my university or any other organization I have a lifetime of involvement in the Baptist community at the local, national and international

levels. I tell you this so that you will understand that I do come as a personal faith who has been nurtured in a religious tradition which puts great emphasis upon the responsibility of humans to be good stewards of all the knowledge and powers that we possess.

I apologize for the generality of my comments but time allows for me to communicate at best an attitude and disposition.

I entitle my comments, "This is no time to panic." The current feeding frenzy in the media regarding cloning reflects a panic reaction that is unsettling, unproductive, and I think finally dangerous. This panic response is composed of two polar opposite expressions. On the one hand the panic of euphoria and on the other hand the panic of terror. The panic of euphoria invites us to dream the impossible dream of creating wall to wall geniuses and shaping all animal life according to our perfect designs.

This euphoric response emerges from a prominent sentiment in our culture that has been called by some "technomessianism" because of its confidence that technology is our messiah and will eventually solve all of our human problems.

The panic of terror on the other hand presents us with a nightmare of nothing but disaster on the cloning highway. In this vision cloning is viewed as a violation of the laws of God and/or nature and will destroy all that is truly valuable and humane. This response of technophobia emerges from a cultural tradition that views advancing technology as the greatest threat to humanity in the modern world.

Both of these panic responses mislead us. We must find a way beyond the panic that moves us into the 21st Century with a sense of equilibrium and allows us to view clearly the potential benefits and the potential dangers of cloning.

In searching for such a way I have three concrete proposals to make briefly. First, we should create communities of sharing and understanding. Hearings such as this should be replicated at the regional and local level and should be engaged in by civic, social, religious and other groupings. In these conversations we should be wary of the strident voices because they make it difficult to achieve understanding and mutual agreement.

We must search for language designed to communicate among multiple specialties and interest groups. In the midst of the very high tech considerations which envelope your commission encouragement encouraging you to promote such conversations may not appear to be a part of your responsibility. However, in my view, without such conversations we would just move in the future from panic to panic.

Second, we should continue the research and development. In my view it is premature to consider banning research in any of the general areas discussed, including research on humans.

I will acknowledge that in the discussions about human cloning I have not heard any reason for such cloning which I view as morally justified. However, such research promises important medical benefits which we should not neglect.

Furthermore, I would make what I think is a very practical observation, that the official banning will not end the research. It will only put it into the hands of the most irresponsible among us.

Third and final, we should not put all our eggs in the cloning basket. Genetic wizardry alone will not achieve the social and human goals we seek. Preoccupation with such quick fix wizardry can distract us from the fact that achieving the children we want requires persistent and extended nurturing and education. We are in danger of making the same mistake here that has often been made in modern health care where preventive measures have been neglected because of the hope that high tech medicine will rescue us at the end.

For example, in our search for geniuses we should acknowledge that nature has already provided us with a rich and diverse pool of gifted ones who only wait for our careful nurture and education to fulfill their potential.

In conclusion, cloning technology need not be either our messiah nor our devil. Rather it should be viewed as a potential for which we accept full responsibility as we direct it towards the service of humankind.

I thank you for your attention and wish you well in your work.

DR. SHAPIRO: Thank you very much and thank you very much for taking the trouble to come up and speak to us and also for

sticking to your allotted time. I appreciate it very much.

Excuse me. Do you have any -- if you have any written --

DR. MCGEE: Yes.

DR. SHAPIRO: -- if you could leave that with us we would be very glad to distribute it to the entire commission and it would be extremely helpful. If you could just leave that with the staff that would be very helpful.

The next person to address us will be Claire Nader from the Council for Responsible Genetics. Is Claire Nader here? Oh, there. We started a little early. Do you want to go next or would you like to sit down for a moment and we will go with someone else first?

Let me ask if Gladys White is here. Gladys White is from the National Advisory Board on Ethics in Reproduction. It is a great pleasure to have you here today.

DR. GLADYS WHITE

DR. WHITE: Thank you and good afternoon. I am delighted to be here and have an opportunity to address NBAC on the subject of human embryo cloning via nuclear transplantation and more specifically to make you aware of the work of the National Advisory Board on Ethics in Reproduction in this area.

In 1991, the medical practitioner community in the infertility area got together and decided that there was the need to establish a nongovernmental interdisciplinary advisory board that

could engage in ethical analysis of issues raised by new reproductive technologies. The work of NABER has to some extent been reflected in the distinguished presentations of NABER board members yesterday and today, Lisa Cahill, Rabbi Moeshe Tendler, and Dr. Ruth Macklin.

Our board has considered the issue of human embryo cloning via blastomere twinning or blastomere separation and I am here today really to just highlight some of the recommendations that came out of that work and suggest that the reasoning behind those recommendations might be relevant to the deliberations of NBAC. I have provided each of the NBAC members with the executive summary as well as with a full copy of the NABER report that was produced in 1994.

In 1993, in response to the research that was being conducted on blastomere splitting embryo cloning via twinning at GW University hospital NABER convened a workshop and commissioned papers, produced a report as well as accompanying essays that appeared as an entire issue of the Kennedy Institute of Ethics Journal in the fall of 1994.

I believe in going back and reflecting on these recommendations and having sat through the meeting of NBAC yesterday that some of the reasoning behind the specific decisions that NABER arrived at in 1994 might serve as stepping stones for the deliberations of this body.

In particular, I would refer you to page 2 of the executive summary and to recommendations 4 through 10 that NABER

arrived at some three years ago. Specifically, NABER came to the conclusion that to produce identical twins separated by a time interval would be ethically unacceptable when it is the sole purpose of a cloning via blastomere splitting procedure.

I highlight that recommendation but also refer you in the entire copy of the report to the reasoning that went behind that recommendation and suggest that in the case of twinning via nuclear transplantation some of the reasons that NABER used in arriving at the decision might be relevant to your deliberations.

We found some three years ago it ethically unacceptable to use cloning to provide an adult with an identical twin to raise as his or her own child. Once again on the face of it that recommendation may not be as enlightening as one would like. But if you go into the reasoning that NABER engaged in at the time, issues of narcissism, issues of is this really necessary as a way of replicating ourselves, I think it provides ample food for thought as you move towards trying to craft a document in the remaining, I guess, 75 days and produce something in response to the President's directive.

Recommendation 6, to retain an identical embryo as a potential replacement for a child who dies. We found this some three years ago to be ethically unacceptable when it was the sole purpose of a cloning procedure.

Recommendation number 7, to retain an identical embryo to be transferred and brought to term should an already born twin

need an organ or tissue transplant. This was deemed unacceptable by NABER.

Recommendation number 9, to produce embryos for donation to others. We found this application of embryo splitting to be ethically unacceptable when the procedure was carried out for the sole purpose. Although in the case of cryopreservation of embryos resulting from in vitro fertilization the board did feel that it might be acceptable to donate spares that were an outcome of an attempt to remedy one particular couple's own infertility.

Finally, NABER came to the conclusion that it was unacceptable to produce embryos for sale. I had the sense in listening to the discussion yesterday that NBAC might possibly be coming to a conclusion similar to the one that NABER took with respect to the selling of embryo issue.

In addition, although this is by no means a consensus opinion of NABER, in listening to the discussion yesterday I would like to suggest that NBAC consider two components in its final report.

Number 1, to consider outlining what might be the basic elements of a public consultation document that could be used in the United States to actually poll the American public concerning what they think regarding the cloning issue.

In its report called "Proceed with Care" the Canadian Royal Commission some years ago incorporated an extensive public consultation process and asked Canadian citizens what they thought

about a variety of reproductive technologies. Under the aegis of the Human Fertilization and Embryology Authority in Great Britain the government has polled the public on what they thought regarding sex selection and what they thought about highly technical issues like the use of ovarian tissue.

Right now the Human Fertilization and Embryology Authority is conducting a public consultation getting the average citizen's views on the use of something as technical as preimplantation genetic diagnosis. So I believe that a public consultation component in the final NBAC report would be useful.

I further suggested a public education component would be important and that there is a unique opportunity here in the course of educating the NBAC members as well as producing the final report to include if not an educational model at least the steps of enlightening the public on the important biological distinctions and ethical questions that NBAC cannot hope to answer entirely in the course of the next three months.

In summary, I believe that NBAC would be well served by a careful reading of the NABER report from 1994 entitled, "Embryo Splitting: An Amber Light," and that this report could serve as an important stepping stone to points of consensus in your final document.

Thank you.

DR. SHAPIRO: Thank you very much. As you know, all members of the commission do have copies of the report. We certainly

expect that we will all read it very carefully.

Ms. Charo? Alta?

PROF. CHARO: Are we allowed to ask questions?

DR. SHAPIRO: Yes, you are allowed to ask questions.

PROF. CHARO: Gladys, just for clarification. With regard to specific recommendations does the board's consensus represent a consensus of those members of the board or does it represent some kind of adoption by a larger group of people that constitute a membership and, if so, who are they so that we will understand the source of the guidance that you are offering up?

DR. WHITE: Well, NABER is -- the organization itself is the board. It is not a membership organization. It is a nonprofit independent deliberative body. So that the deliberations that NABER comes forward with are -- consist of three kinds of thinking. Number one, consensus points. And in the course of this report there were some points of consensus. Number two, points at which NABER members were divided on the issue, and then finally points where NABER members were in consensus about a prohibition or objection to the use of a specific cloning for a specific purpose. So it really reflects only the deliberations of this particular body.

However, I do believe that NABER was unique in being on the cutting edge in anticipating some of the relevant ethical questions as long as three years ago.

DR. SHAPIRO: Thank you.

PROF. CHARO: Thank you.

DR. SHAPIRO: Let me now turn to Claire Nader and apologize for the fact that we started a little bit early. Welcome.

Dr. Nader is here from the Council for Responsible Genetics.

DR. CLAIRE NADER

DR. NADER: Thank you for this opportunity to begin to bring some of the concerns of the Council for Responsible Genetics to the attention of this group. The Council for Responsible Genetics is a group of -- is an organization whose board is composed of biological scientists, physicians, who are also involved in research, individuals who specialize in the agricultural side of this application biotechnology, policy people and individuals concerned with the religious components of these developments.

The Council for Responsible Genetics has been in existence in its present form since 1983. I say in its present form because way back in the middle '70s it was operating in a different way but still with a mix of specialties and interests that should span our concerns with this technology.

We are calling for a worldwide ban on human cloning and a wider public debate about biotechnology. I was interested to hear the previous speaker emphasize that at the end of her remarks and that is where I am going to end out also.

We call upon all the nations of the world to prohibit the cloning of human beings by incorporating such prohibitions into their national laws and statutes.

And the United Nations to take the initial steps by constituting an International Tribunal to articulate the concerns arising in different nations, cultures, religions, and belief systems with respect to the potential cloning of humans.

We call upon the Congress of the United States to pass legislation to prohibit the cloning of humans either through embryo splitting or nuclear transfer.

To exclude animals and plants, their organs, tissues, cells or molecules from patenting, whether naturally occurring or cloned.

And we call upon every citizen of the world and their institutions, including the media, to promote a vigorous public debate regarding the cloning of animals and in particular what lines should be drawn, if any, between practices that are acceptable and those that are not.

In the course of human history our species has recognized many behaviors that are counter to the interest of the survival, development and flourishing of individuals within civilization. Among these are involuntary servitude or slavery, torture, the use of poison gas, the use of biological weapons, and human experimentation without consent. Human societies are working on preventing other destructive practices such as child labor, environmental degradation, nuclear war and global warming.

It is interesting to pause for a minute here and notice that the work on nuclear war and ridding ourselves of nuclear arms is

now being led by the very people who developed those armaments and held positions of responsibility to get us to where we are now but now have had more than second thoughts and are launching a vigorous public debate and advocacy actually on getting rid of all nuclear arms. It will probably be useful for the leaders in this biological revolution of our's to sit with these individuals and see what they can glean from their experience.

DR. SHAPIRO: If I could just interrupt you for a moment. I apologize. We are, of course, very grateful that you are here. Before you came in I think we did announce -- I just want you to know we have a five minute limit on each speaker so you can --

DR. NADER: Oh, I am sorry.

DR. SHAPIRO: Well, I understand that and we will allow -- I am not going to impose that rigidly but I just wanted to let you know that --

DR. NADER: That I used up my time?

DR. SHAPIRO: No, no, no, but I could see that you were not going to get through this whole statement.

DR. NADER: All right. Well, I will --

DR. SHAPIRO: So if you could just focus on --

DR. NADER: Yes, I have it.

DR. SHAPIRO: -- finishing up but we do have your own entire statement.

DR. NADER: Okay.

The cloning of sheep and monkeys opens up the specter

of human cloning. The fundamental character of this activity is to transform humans into commodities, to devalue the relationship of humans to each other and to their culture. Just as the 13th Amendment outlawed slavery and other laws prohibited torture, child labor and other forms of human exploitation, the time has come to prohibit human cloning.

"Can" does not imply "ought." Despite the sheep cloners' disclaimer of any intent to apply this technique to humans, mainstream commentators, including individuals who focus on bioethics, are already pushing the idea of cloning dying children or 100 percent compatible human organ donors. We can expect a transplantation of fetal pancreatic and brain tissue is already being used experimentally for treating diabetes and Parkinson's disease in adults. Scientists are reluctant, we understand, to say anything for the record about technological or medical scenarios that appear bizarre or avant-garde.

By banning cloning some scientific questions will be more difficult to answer but scientific convenience cannot be used to justify the degradation of the human condition as occurred in the Nazi concentration camps or in the Tuskegee Syphilis Study. The difficulty in obtaining classes of biomedical information is not a sufficient justification for research that exploits and demeans human beings.

I will skip over the section that DNA is not destiny and move to the issue of the -- let's see -- the cloning per se will

not be the most likely endpoint of this -- if this technique is attempted in humans the cell nuclei of a mature individual with known biological characteristics can be used as the raw material for "enhancement" techniques involving introduction of extra-altered genes.

The idea would be that the resulting clone would be new and "improved" models with increased disease resistance and superior social, intellectual or athletic skills. This is a highly questionable enterprise and makes possible virtually an unlimited set of eugenic attempts at improvement from a culturally defined and arbitrary starting point.

Even if the cloning technique were entirely confined to nonhuman animals in the foreseeable future it would still be problematic. The robustness of natural populations including their flexible response to new conditions and hence resistance to disease rise to a great extent in their genetic variability.

This characteristic would be entirely eliminated in the population of clones. The near total loss of the entire U.S. corn crop in the 1970's as a result of monoculture, overuse of too narrow a genetic base--is a harbinger of what could happen with cloned livestock.

Then there is the issue of animals on the assembly line where we use them as biofactories. The question is are we prepared to view animals solely as lucrative biofactories useful only in their capacity to serve human needs. The erosion of respect for life

continues. If we move in these directions the industrialized production of agricultural animals according to prespecified standards will inevitably undermine any respectful stance towards animals that may remain in our highly corporatized culture.

The final point, let me get to that and to the limit of five minutes, it is the democratization of the technological practice. Genetic engineering is a technology developed largely with public tax funds and in fashioning policies for its implementation we should reflect upon citizen concerns. Citizens cannot be a nation of onlookers.

If war is too important to be left to the generals, decisions affecting our relations with each other and the rest of nature cannot be left to selected people as concerned as they may be on small groups of commissions like this one and others that have been established. Reproductive technologies need to be regulated and not left to the market forces.

So we need town meetings across the country, public hearings, various forums are needed for people to learn about the social implications of these novel technologies and discuss how to regulate them and the more fundamental questions of what values do we really share and what kind of society do we want to live in.

I want to recommend to you besides the different forums

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DR. SHAPIRO: Are your remarks near an end?

DR. NADER: Yes, they are.

DR. SHAPIRO: Thank you.

DR. NADER: That part of your report indicate a big effort to develop public discourse, to have for example scientists, research scientists, talk to each other in public about the work that they are doing with a back and forth until issues are refined and substantiated and people can begin to understand the measure of the questions that are being raised. And then, of course, the many policy questions that are raised can also be discussed.

We have the technology, the cable access stations, the electronic means, the usual public gathering places and churches, and synagogues and other places to conduct such a public discourse over a period of time so that, in fact, it will be a decision made by many because it will affect many. There is an old Roman adage that does say, "What affects many should be decided by the many."

Thank you very much.

DR. SHAPIRO: Thank you very much. We very much appreciate your effort to be here today and we will certainly give both your remarks and your written testimony very careful consideration as we move ahead. Thank you very much.

The next person to appear before us is John Cavanaugh-O'Keefe, American Bioethics Advisory Commission, a project of the American Life League. Mr. O'Keefe?

JOHN CAVANAUGH-O'KEEFE

MR. O'KEEFE: Thank you very much, Mr. Chairman, for this opportunity to address you a second time. It is really very

generous of you.

I would like to say three things. First, I just wanted to thank you very much for the hearings these past two days, reaching out to listen to the religious voices of the nation. We are very grateful to you for that. We did ask for it in San Francisco and I was really pleased to see this.

The second, I wanted to respond to a request that Dr. Murray made in the subcommittee and repeated several times today, a concern that he had raised and that is what do we do to reach out to people who are not PLU, people like us, and in response to that working to provide as many PLT, people like them, as I can, we have at American Life League put together the American Bioethics Advisory Commission. It is our intention to watch what you are doing and to respond to it as forcefully, as fully, and as rapidly, and as comprehensively as we can.

I think that all of you do have some of the material about it and if you want more it is available on the Internet at aol.org.

The third -- so I just wanted to restate something that is really quite simple and obvious but I have not heard it in the last couple of days and that is that Dr. Macklin and others said, "You know, define the harm. What is the harm to an individual that you see in cloning?"

And I just wanted to restate the obvious and that is that for many people the central harm is quite obvious and that is

that cloning involves starting a life and if that life is extinguished 276 out of 277 times some of us would wonder if that is the death of 276 children were that to happen with human cloning.

Thank you very much, Mr. Chairman.

DR. SHAPIRO: Thank you very much. Thank you for being here again today. It is good to see you.

Is there anyone in the audience who would like to briefly address the commission?

Yes, please. Could you come forward and just give us your name for the record?

DAN CROW

MR. CROW: My name is Dan Crow and I wanted to just briefly rebut what John Robertson, the attorney from Austin, who presented this morning said. I am an attorney from Texas, from Austin. Maybe we ought to travel in pairs so we can negate the harm we do with each other. But as an attorney I know there are two sides to every argument but that does not mean that one side cannot be dead wrong and as an attorney when I present an argument I only present one side of it and I think that might have been the case this morning.

The gentleman who just spoke raised what I consider one of the glaring down sides that Mr. Robertson was looking for. In the experimental production of a human being if it turns out to be like those sheep some were born alive, many of them were born alive, and they died because some of those 100,000 units did not generate

spontaneously like they had hoped they would.

You could produce a child who lacked what nature provided to keep us from having unspeakable pain or you could produce a child who had a hidden gene, a latent gene, that turned out to be the horror of humanity somewhere down the line.

My focus when I have been here in Washington has not been on this proceeding. I have been over on the Hill with people who are representing child advocacy. And there are already enough problems that we can put our attention on and our money on, and our energy to solve the problems of the children now in being without cloning more children creating more problems to take away focus from the children in being and the children who inevitably will come who will have problems and will need our help, our focus, our attention and our love.

Thank you.

DR. SHAPIRO: Thank you very much for your remarks.

Is there anyone else who would like to address the commission?

Thank you. Can you please give us your name just for the record?

J.D. HANSON

MR. HANSON: I am J.D. Hanson. I am a staff person of the United Methodist Board of Church and Society. I apologize I have not been able to be at all of your meeting.

I wanted the commission to know that the general board

of Church and Society of United Methodist Church has requested our Denominations Genetics Science Task Force to issue us a report on this. The task force will be meeting in mid-April.

Our denomination already does have policy that relates, however. Our denomination is opposed to procedures which would produced waste embryos. It may not be the most elegant translation but our denomination is an international denomination and we have members from Africa, Asia and Europe. The concern on this subject first came from our European churches.

The other position that is relevant to this is our denomination is already on record as opposing human germ line intervention. We will be submitting formal comments to the commission as soon as we can get them.

Thank you.

DR. SHAPIRO: Thank you very much for being here today.

I very much appreciate it. We would certainly look forward to receiving those comments. While I hesitate to say this, if we can get them sooner that would help us more than if we get them later. So I understand it is difficult to get an exact timetable. The sooner the better. It would be a great help to us.

Anyone else who would like to address the commission?

Thank you all very much. We are adjourned.

(Whereupon, the proceedings were adjourned at 2:47

p.m.)

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