

Ms. KAPTUR. Mr. Speaker, everyone knows that America is losing its independence as goods that used to be made here are displaced by foreign imports. In fact, America is in unchartered waters today. We have an accumulated trade deficit of nearly \$1 trillion a year.

Today, I want to talk a little bit about super NAFTA and what the Bush administration is planning to lock NAFTA in even tighter in this country and across the continent.

There is something called the Agreement on Security and Prosperity that is being negotiated by the Bush administration very quietly. No hearings are being held in this Congress. Most Americans have never even heard the term, but it really is the successor to NAFTA.

In addition to what it anticipates in terms of a new transportation corridor that will come up through Mexico and the American highway into the United States, it also includes the incentives to major corporations, such as Ford Corporation of our country that is laying off people in our country, now an additional 30,000 jobs to be lost here in the United States, and Ford is planning to employ over 150,000 more workers in Mexico, announcing it will be investing over \$9.2 billion in Mexico.

It is hard to explain to the American people how big that investment really is, but truly it will employ 15 percent or 1 of 7 of all unemployed people in Mexico, so many of them having been uprooted from their farmsteads, because NAFTA included no transition provisions to allow people to have a life and to survive inside of Mexico's rural areas, and over 2 million families have been uprooted from Mexico's farm communities and are doing what, they are moving north to eat.

At the heart of our illegal immigration problem is NAFTA's disruption of the Mexican countryside.

But in any case, this Security and Prosperity Agreement, as it is being called, has no democratic underpinning to it. It is being negotiated by the very same elites that negotiated NAFTA.

And let's look at some of the signs of what is happening. It is suddenly clearer why a company from Spain called Cintra wants to be the gatekeeper on this new highway structure to manage the flow of goods from Mexico, including the hundreds of thousands of vehicles that Ford Motor intends to manufacture in Mexico after making its \$9.2 billion investment there.

Cintra is a subsidiary of Ferrovial, the Spanish transportation company founded by multi-billionaire Rafael del Pino, who is one of the richest people in the world.

Cintra already operates the Chicago Skyway, one of the nodes along the way here under a 99-year concession, and is planning development of the Trans-Texas Corridor, which is another part of this plan.

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Cintra is a 50/50 partner with Macquarie Infrastructure Group an

Australian investment bank in another place in America called Indiana, where the Indiana Turnpike, can you believe this, has been leased to a foreign interest. And we are told that Ohio, the State that I represent, might be the next State to unwisely rent one of its major assets to a foreign nation.

Human Events magazine recently had this description. It said, "The North American Super Corridor Coalition is a not-for-profit organization dedicated to developing this international, integrated multimodal transportation system along the international midcontinent trade and transportation corridor."

Where does that sentence say anything about the United States?

Still, this group has received \$2.5 million in earmarks from the U.S. Department of Transportation to plan this NAFTA superhighway as a 10-lane, limited-access road, plus passenger and freight rail lines running alongside pipelines originally laid for oil and natural gas.

One glance at the map of the NAFTA superhighway on the front page of NASCO's Website will make clear that the design is to connect Mexico, Canada and the United States into one transportation system. But guess what is going to happen? If you look at what is going on in Mexico, guess where Mexico is getting most of the parts to put into their production? Not from the United States. They are getting them from China. In fact, a lot of production in Mexico has been moved to China.

So imagine this: Huge container ships continuing to come in from China and Asia, hitting up against ports like Lazaro Cardenas in Mexico, where the workforce earns almost nothing, and the major ports in our country of Los Angeles, of Oakland, all along the west coast, I just wish we were shipping goods out. But right now our longshoremen and our dock workers are loading and unloading containers in the United States.

But you can go around the United States. You can bring in that massive set of shipments from Asia through Mexico and up into the United States.

And imagine if this corridor is then leased, leased to foreign interests who then charge tolls and become familiar with the transportation systems of the United States.

This is the heart of America. This can displace every other major transportation system that we have if this is locked in piece by piece, and we have plenty of evidence that that is exactly what is going on already as an underpinning to this agreement that is being called security and prosperity.

My question is, how much democracy will that agreement actually have in it? Will it be prosperity for all, or just for people who are rich enough to own global companies, like Cintra, that will invest anywhere, don't know the people in our communities, frankly don't care, and are willing to move production anywhere?

The people of the United States had better wake up. We'd better ask ourselves why are Americans having to work so hard for less? Why is it more expensive for them to send their children to college, and then those kids graduate with huge debts? Why isn't your pension plan secure? Why are you having to pay so much more for health care? Why is not your retirement benefit there forever?

Because these kinds of interests don't want you to have it because they are so filthy rich off the investments they are making globally. They don't care about you, they don't care about this country, they don't care about where you come from, and, my friends, they don't care about democracy.

EMBRYONIC STEM CELL RESEARCH

The SPEAKER pro tempore (Mr. POE). Under the Speaker's announced policy of January 4, 2005, the gentleman from Maryland (Mr. BARTLETT) is recognized for 60 minutes as the designee of the majority leader.

Mr. BARTLETT of Maryland. Mr. Speaker, there is a present and growing interest in our country in the potential for the materials created from stem cells to produce quite miraculous cures. Indeed, we have been working with adult stem cells for more than 30 years, and there are a large number of applications in medicine.

We have been working with embryonic stem cells for far less than that, but because of their primordial nature, the experts in the research field and the medical field believe that there ought to be more potential from embryonic stem cells than there are from adult stem cells.

But the way we now create embryonic stem cell lines presents ethical problems for a large number of American citizens, indeed, I believe, more than half of them, because all embryonic stem cell lines now are produced by destroying embryos. But because of the potentially vast potential for application of embryonic stem cells to medical cures, there is an increasing interest in the possibility of ethically creating embryonic stem cell lines or embryonic cell-like lines of tissues. And that is what we are going to spend a few moments talking about this evening.

I am joined on the floor this evening by Representative OSBORNE, who has a longstanding interest in this subject. And I would like to recognize him now and to commend him for his knowledge and interest in this subject. Congressman OSBORNE.

Mr. OSBORNE. Thank you, Mr. BARTLETT. I appreciate your expertise, your knowledge in this area. And my remarks will be relatively brief because you are the one that truly understands your bill and understands the research much better than I.

But I would say, Mr. Speaker, that nearly all of us have been impacted, either directly or indirectly, by diseases

like juvenile diabetes, Parkinson's, Alzheimer's, Lou Gehrig's disease and spinal injuries. And there has been a great clamor over the last 7 years, since embryonic stem cells have been recognized as a possible source of cures for these diseases, that there should be public funding of embryonic stem cell research.

The ethical dilemma, obviously, for those of us who are prolife, who believe in the sanctity of life, is that we would like to see research occur that is helpful, but we don't really want to see human embryos destroyed in the process. And I think that is what brings Mr. BARTLETT and I to the floor together this afternoon, our common interest in some research of this type, but an aversion to the destruction of human embryos. And so I really applaud him for what he has done and for his bill and just make a few comments.

I think the ethical dilemma really revolves around when does life begin. And for some people it is at 9 months. For some it is at birth. For some it is at 3 months, 6 months. But for a great many of us, it is at conception. And if that is your belief, then an embryo constitutes a human life, so what happens to that embryo is of great concern.

And so the research that we are going to talk about this afternoon has to do with allowing research with human embryos that does not harm or destroy the embryo. And therein lies, I think, the interest that I have in this particular process.

There have been a few studies done just recently that I would like to refer to. This came from the National Institute of Neurological Disorders. It is published by the National Institutes of Health. And this is the quote. I believe that this was posted June 21, just a day or two ago. "For the first time, researchers have enticed transplants of embryonic stem cell-derived motor neurons in the spinal cord to connect with muscles and partially restore function in paralyzed animals. The study suggests that similar techniques may be useful in treating such disorders as spinal cord injury" in humans. And, of course, this was done primarily with mice. But that is just recently, in the last couple of days, where paralyzed mice have actually had some of their motor functions and some of their paralysis reversed through a process that has not resulted from the destruction of human embryos.

The second study I would like to mention was published on Monday, October 17, 2005, in the Washington Post. It said, "Two teams of scientists provided the first definitive evidence yesterday that embryonic stem cells can be grown in laboratory dishes without harming healthy embryos, an advance that some scientists and philosophers believe could make the medically promising field more politically and ethically acceptable."

And I think this was pretty much the genesis of the gentleman's bill and his

research. So, rather than taking further time from the expert, I am just going to offer my words of support, my appreciation for his knowledge in this area.

He is, to my understanding, the only geneticist in the House of Representatives, the only one with the adequate scientific understanding to truly bring this forward. And so I applaud you for your research and your stance and for the promise that your bill holds for many of us.

And as many of us know, the President has talked about vetoing any bill that would result in future destruction of human embryos. We believe this is an answer to that concern and a way around that veto.

And so with that, Mr. BARTLETT, I yield to you and thank you for your work.

Mr. BARTLETT of Maryland. Thank you. I appreciate you mentioning that recent article on the application of stem cell therapy to these paralyzed mice and the quite miraculous response.

It is kind of ironic and teleologically difficult to explain, to understand why the nerve tissue outside the central nervous system can heal itself. If you cut your hand or your leg, and you lose feeling in your finger or your foot, by and by that feeling will return as the nerves grow. If you cut a nerve in the central nervous system, it doesn't regrow, which is why there are so many paralyzed people from spinal cord injuries and from diseases like multiple sclerosis and so forth.

Stem cell applications provide the hope that we might be able to grow nerve cells and implant them in these patients so that they could recover some activity. And this paper that Congressman OSBORNE referred to in mice gives us hope that that is a real possibility.

Mr. Speaker, I have here in this chart a very abbreviated sequence in the fertilization and the development of the embryo. It begins here with what is called a zygote. A zygote is made up of the two germ cells which have united up here before this one is shown. And then it goes through several developments, through the morula stage and the blastula stage. The blastula is shown here. And finally, the gastrula. And these are sequence. And you will see more of this in the next chart.

But when we get to the gastrula stage, we now have the production of what is called three germ layers. This cell that began up here as a single cell produced by the chromosomes that came from the ovum, the female sex cell, and the sperm, the male sex cell, have now divided again and again and again, and finally these cells begin a process which we call differentiation. They are now differentiating into what will ultimately become all the organ systems of the body.

In this early differentiation, we have what we call the three stem cell lines. We have the ectoderm, which is the ex-

ternal layer; the mesoderm, meaning middle; and we have the endoderm. These we refer to as the three germ layers. And then, of course, we have also the quite unique germ cells themselves. In the female that will, of course, be the ovum from the ovary. In the male it will be the sperm from the testicle.

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Now, in each of these three basic germ cell lines, we have a stem cell, which in the ectoderm, it will differentiate into your skin, it will differentiate into your nervous system, the central nervous system, the spinal cord and all the nerves in your body. The mesoderm, the stem cells there will differentiate into the major part of your body. All the muscle, the cardiac muscle, the skeletal muscle, all of the bones, and all of the blood develops from the mesoderm.

The blood is particularly interesting because persisting even in the adult are stem cells for producing blood cells because we keep producing blood cells. They keep breaking down and are removed from the circulation by the liver and the kidney; so we keep producing new ones. So even in the adult, you can see these stem cells, which produce a great variety of blood cells. In the bone marrow, it produces the erythrocytes and the thrombocytes and what we call the polymorphonuclear leukocytes, which are part of the white cells. And then we have the endoderm. There is not much mass of endoderm in our body. That doesn't mean it is not important. The pancreas, the thyroid gland, and the lining of our intestinal system and the lungs and so forth all originate from endoderm.

It is very interesting that these cells retain their original inheritance kind of even in the adult. When you are 50, 60 years old, if you get a cancer and that cancer metastasizes, if it is a cancer on mesodermal tissue, it will metastasize only to other tissues that develop from mesoderm. That is really quite interesting that they have retained that much of their original characteristics, of their original selectivity.

The next chart shows in a little more detail the fertilization process and the development of the embryo. And I am spending a couple of minutes on this, Mr. Speaker, because I think it is important to understand what is being done in the scientific world and what the ethical problems are for those who believe that the embryo is a person in miniature with all of the genetic capabilities to produce a complete human person and therefore it ought not be destroyed.

This is a reproductive tract of the female here, and it shows the vagina and the uterus, and then it shows the two fallopian tubes. And the little square here indicates what is shown in this big chart here. It is just one half of the reproductive system. Here the uterus is split in half. There would be another

mirror image of this on the other side. And it shows here that the ovary, they mature roughly one a month in a female, once every 28 days. And then the ovum erupts from the ovary, and it is almost always, not always but almost always, picked up by a kind of a funnel end of the fallopian tube, which is called the infundibulum.

Once in a while it is not picked up and the ovum will go on out here in the body cavity, and the sperm, which are released, of course, down in the vagina. They go up into the uterus, and then they swim against the current, by the way, because there is some little cilia in here. This ovum has no motility on its own, and it slowly moves down the fallopian tube by cilia in the walls not shown here, which are beating and moving it down, and the sperm swim against that. And some of them will make it out the end of the fallopian tube clear out into body cavity, and if there is an ovum out there, they may fertilize it. And then the fertilized ovum will implant on some adjacent body tissue, and we call this an ectopic pregnancy. Of course, the body is not meant to develop a baby out there; so that needs to be interrupted by surgery or the mother may die.

But as the little diagram here shows, here are the sperm coming up and they fertilize the egg way up into the fallopian tube several days before it will implant down in the uterus. There is quite a miracle that happens here. There are millions of those sperm, and as soon as one of them makes it through the wall of the ovum to fertilize it, there is immediate chemical change in the wall of the ovum and no other sperm can get through because it would be absolutely disastrous if another sperm got through. That would produce when we call polyploidy, and that would result in the death of the embryo. Now, polyploidy reacts very differently in the plant world because that is how we make giant flowers and super fruits and vegetables and so forth.

We simply produce polyploidy, and that makes everything brighter and better and sweeter smelling. But in animals, humans and all other animals, this polyploidy would produce death.

So now the egg is fertilized, and we call it a zygote. So now here is the zygote. It begins its trek down the fallopian tube, and it takes several days. Here we have day 4 and day 5 and day 6 and 7, and you see it is going up around day 7, 8, or 9 before it finally implants in the wall of the uterus. But as it goes down the fallopian tube here, it divides to produce two cells.

Then it divides again to produce four cells and then eight cells, and we will come back to talk about this eight-cell stage because it has a special significance in one of the techniques that may be exploited to produce some ethically generated embryonic stem cell lines, and then it goes on to divide. Again, it goes through the morula stage and then it goes to the blastula

stage and then the gastrula stage, and we saw that on the previous chart.

I would like to note that it is about here at the inner-cell mass stage, about at this stage, that the embryo is generally taken, not, of course, from the reproductive tract because all of this can also be done in a petri dish in the laboratory. You simply superovulate the mother and she may produce a dozen or so eggs, and you wash those eggs out, and then you put them in a petri dish and expose them to the sperm, and they fertilize.

And then they begin to develop, and they grow and develop into all of the different stages that we see here. And so in the petri dish when they have developed to the inner-cell mass stage, which, remember, is the stage where we saw that they were going to develop into the three germ lines, this is the stage at which they take the cells. They simply kill the embryo, and they take the cells from the embryo to produce an embryonic stem cell line.

Several years ago the President issued an executive order that said that we could not use Federal money if we were getting our stem cell lines from destroying these embryos but we could use Federal money in continuing with research on stem cell lines that were then in existence. The President said, and some may have indicated that that was the case, that there were probably 60 or so stem cell lines in existence then. If there were, they have now dwindled to about 20, more or less, stem cell lines, all of which are contaminated with mouse feeder cells.

I might spend just a moment to indicate what these feeder cells are. When we take these cells out of the inner-cell mass, these cells really do not like being alone or even nearly alone. They like company. And so they frequently put them in the company of other cells so that they can reproduce because, if separated, it is more difficult to get them to reproduce. So taking them from the fellowship they find in the embryo and putting them in a petri dish to tissue culture them, many of them will refuse to divide. But if you put them in the company of other cells, in this case the mouse feeder cells, then they divide. Well, this has now contaminated these present stem cell lines so that none of them can be used for therapy. It does not disqualify them for research; so some meaningful research is still going on.

There are four different potential approaches to producing embryonic stem cells without harming embryos or embryonic stem cell-like cells that could produce tissue cultures. And we have a bill, H.R. 5526. This is a companion bill to the Santorum-Specter bill in the Senate. Mr. Speaker, as you know, the politics of this is that we have a bill that has been in the Senate for quite a while known as the Castle bill, Mike Castle from Delaware.

What this bill does is to permit the use of Federal money to take some of those surplus embryos which are in our

reproduction clinics. When a mother goes in to have in vitro fertilization, as I indicated, they will superovulate the mother with hormones. They get a number of eggs, they will fertilize them in a petri dish, and then they get a dozen, more or less, embryos. They then look at these embryos under a microscope, and they choose the best two or three and implant them in the mother's uterus because they do not all take. My daughter-in-law has just gone through a procedure, and at first, we thought that she had twins, and now it is just a single baby, for which we are very thankful.

The fertilized eggs which are left which have now become embryos are frequently refrozen. The parents pay to refreeze them to keep them, because something may happen to this baby and maybe they will want a second child or a third child, and they will stay frozen for quite a while; so they put them in the freezer. But by and by, they will decide that they do not want more children; so they will no longer pay for keeping the eggs frozen in which case, the fertilized eggs, they are simply discarded. And what the Castle bill says is that parents donate these embryos that are going to be discarded anyhow to medical research and to the development of stem cell lines that, hopefully, will provide miraculous cures of many diseases that Congressman OSBORNE mentioned, for which we now hold out high hopes.

The problem that pro-life people have with this is if you are looking generically at 400,000 surplus embryos, and that is about what is out there, about 400,000, you may make the argument that if they are going to be discarded anyhow, why not get some medical good from them? But there are two problems that pro-life people have ethically with this. One is that before you decide to destroy the embryo, you are going to look at it under the microscope to make sure it is healthy because you are going to want to get cells from a healthy embryo.

So it is not 400,000 embryos that you are concerned with now. It is one embryo under the microscope. And when you are looking at that embryo under the microscope, it could be the next Albert Einstein, it could be the next Beethoven. And, again, we are not dealing with the 400,000 out there. We are dealing with the one under the microscope. That is the one for which we have responsibility, and how could you kill the next Einstein or Beethoven?

And another concern that the pro-life community has is that if we permit the destruction of these surplus embryos, who knows, but what we may be producing more surplus embryos so we will have more embryos to use for establishing stem cell lines? So there is a real need, Mr. Speaker, to develop techniques to ethically get embryonic stem cell lines or embryonic stem cell-like lines that will have the potential of embryonic stem cells.

Just a moment to talk about how embryonic stem cells are different

from adult stem cells. Adult stem cells have already gone through a lot of differentiation. They are either of ectodermal, mesodermal, or endodermal origin. They are already destined to become nerve tissue or muscle or blood or the lining of the gut or something like that. And it is true that we can sometimes kind of reverse that differentiation, and we will talk about that in a few moments. And it is also true that even without doing that, you can make some applications to the development of tissues for that specific part of the body. But because of their primordial nature, because of their ability, we call it pluripotency. They can produce any tissue in the body. Totipotency means that they cannot only produce every tissue in the body, but they can produce every tissue that the embryo needs so that it can develop into a full baby. See, the embryo is not just an embryo because about half of the tissues of the early embryo end up with what we call trophoblast or the amnion and corion which attaches the baby to the mother's wall, protects the baby in an enclosed, warm fluid environment while it develops during its 9 months.

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These ethical concerns have resulted in a lot of study by a lot of people to see if there is a way of doing it, where we can get the potential from these embryonic stem cell lines, which any one line can produce any and every tissue in the body theoretically.

I will tell you, Mr. Speaker, we are not there yet, because these embryonic stem cells, much like an energetic teenager, just want to divide. They want to do things. They want to grow.

There are some who feel that their tendency to just grow and divide is going to be very hard to control and you are going to end up producing tumors and cancers and that sort of thing when you put them in the body. But there are a lot of knowledgeable, professional people out there who believe that we can control that, that there is incredible potential from these embryonic stem cell lines, so we are trying to get embryonic stem cell lines or embryonic-like stem cell lines that avoid these ethical confrontations.

The next chart shows us three of the four that were looked at by a special commission that the President set up on bioethics. Several years ago they looked at the various possibilities out there and they looked at the pros and cons, and they have a little white paper on this subject which is worth the hour or so that it takes to read it because it goes through all of these techniques and it looks at the pros and the cons of these techniques.

First, we have here kind of a recapitulation of some things that we have been talking about. This shows the development of the gummies. They go through a process of division, and they divide again and again. Most of those divisions are what we call mitotic divisions, where the chromosomes

split and the daughter cells have as many chromosomes as the original cell.

But once in that process there is a division which we call a meiotic division, called meiosis, and in that division the chromosomes split and half of them go to one cell and half to another cell, and that produces a gamete or a sex cell which has only half the requisite number of chromosomes, which we call the haploid number of chromosomes.

Of course, the design now is that these two cells will come together in a process which we call fertilization, when the sperm will fertilize the egg, and then we have the single cell embryo, and then it divides and here we have the 3-day and the 5- to 7-day embryo, which we saw in more detail in previous charts.

Mr. Speaker, we have heard a lot these days about cloning. Dolly the Sheep was the first cloned mammal, and this little sequence here shows how they do cloning.

What they do in cloning is to take an egg cell, and this egg cell has a big cytoplasm, this is what is outside the nucleus, and it has the nucleus. The nucleus contains a lot of genetic material. It contains most of the genetic material that determines whether you are going to be a person or a frog, or whether you are going to be a male or a female.

But out in the cytoplasm are other proteins, protein-like substances, that have a lot of genetic capability too. What they do is pretty much control what goes on in the nucleus. So we have these RNA, ribonucleic acid out there, and these factors now control what goes on in the nucleus.

So if you take an egg and you take the nucleus out of the egg and then you take a donor cell, this is a somatic, which means body, take a cell from the body, and you now combine, you fuse these two cells, you take the cytoplasm from the egg nucleus from the donor cell, and you now have the nucleus from the donor cell in the environment of a cytoplasm from the egg and the factors in that cytoplasm now which control what happens inside the nucleus, with—everything is not detailed here. We kind of shocked this a little bit so the nucleus from the donor cell forgets it is the nucleus from a donor cell, so it now can be controlled by these control factors out in the cytoplasm.

This is now called cloning. So now we have an organism produced that looks nothing like the egg from which you took the nucleus. It now looks like the adult from which you took the somatic cell. So this is what cloning is.

By the way, we will have a chart a little later which shows this. Nature has been cloning for a very long time in a way, because every time we have a set of identical twins, one of them is a clone. I guess you could choose which one of the two you wanted to say was the clone. We will have a chart on that in a few minutes.

The next chart here shows three of the four techniques that are outlined in this report put out by the President's Bioethics Council.

Altered nuclear transfer. I showed the cloning one, because this is very much like cloning. As a matter of fact, the techniques you go through are the same laboratory techniques you go through with cloning.

But what you do here is to knock out a gene for normal development, and you do that before you put the nucleus in the sex cell from which you have removed the nucleus. So you now have deactivated a gene which is necessary for the complete development of the embryo. That gene happens to control the development of what we call decidua, which is the amnion and the chorion.

This cannot develop into a baby because it can't produce an amnion and a chorion, and so it is just a growth of tissues, all the kinds of tissues that are in a baby but not a baby, because you deactivated the gene necessary for the normal development.

What you do later, then, is turn that gene back on. It can never begin a baby. You turn that gene back on so the cells are normal cells, and then you can take cells from that to establish an embryonic stem cell line.

One can imagine, Mr. Speaker, the ethical objections which may be raised to this. But this is simply kind of a crippled child that you have produced here. We don't kill crippled children after they are out of the womb. Why should we kill crippled children produced in the laboratory?

Mr. Speaker, there is almost no technique against which some ethical objection could not be levied. In life, we are always making choices. When you look at the potential good from embryonic stem cell research, there is a level of risk that one is willing to take.

Every time I get in my car and drive down here to the Hill there is a risk involved. Not everybody who drives from Frederick down here makes it down. Every once in awhile there is a fatal accident on the way down here. But the value of what I am doing here I believe exceeds the risk that is involved in coming here, and so I come. It is that way with this nuclear transfer.

The second one of these is embryo biopsy, and I will come back to that in a little more detail later, because this is one I have been personally involved with for a number of years now. I spoke to the President about this before he came out with his executive order and have been working with people at NIH. So I will reserve more discussion of this until we come to a couple of charts a little later.

But let me just indicate that what one does here is to envision removing cells from an embryo without harming the embryo and then using the cell which you have removed to produce a tissue culture of embryonic stem cells. Then if you implant the cells remaining in a mother, they go on to produce

what appears to be a perfectly normal baby.

When I first suggested this several years ago, I did not know in the meantime there were going to be laboratories which were doing precisely this. It started in England, and now there are more than 2,000 babies born worldwide where a cell is taken, generally from the eight cell stage. Generally they get two cells, and they have taken that cell to do a pre-implantation genetic diagnosis.

This is to make sure the baby is not going to be mongoloid or have a genetic defect. If they find no defect from that single cell they have taken out, they implant the remaining cells in the mother, and more than 2,000 times now we have a perfectly normal baby, what appears to be a perfectly normal baby born.

Mr. Speaker, I would be surprised if there was any effect. In a former life, I was privileged to get a doctorate in human physiology. I taught in medical school. I had a course in advanced embryology, and I knew that whenever we had identical twins, that half of the cells were taken away from the original embryo and each half became a perfectly normal baby.

So I argued and asked the researchers at NIH 4 or 5 years ago, was this a rational argument? I argued that if you could take half the cells away from the embryo and each half produced a perfectly normal baby, certainly you could take one or two cells away from the embryo and the embryo wouldn't even know it.

Now we have the potential for something which really is quite exciting, which we will come to a slide a little later and discuss that in more detail.

The last one here of these three, this altered nuclear transfer here and the embryo biopsy and cells from dead embryos, I have several slides in a few moments that we will go over cells from a dead embryo.

Many of these embryos are just not going to make it, which is why the clinician looks at them under the microscope before he implants them in the mother. They now have done a lot of observation and research to determine how early you can identify an embryo which is in effect dead. But like the person who is dead, you can still take organs from the person that are perfectly good for implanting in another person, and we do that all the time.

So it occurred to the researchers in this area that maybe when the embryo was dead, and by that we mean it did not have the ability to further divide, it was not going to become a baby and you could clearly identify that state, that maybe the cells in the embryo, at least some of them, were still quite normal and quite viable. So this whole procedure now presumes that we can identify dead embryos that are not going to make it, but they still have life, good cells in them.

So this procedure would be very analogous to taking organs from that

young fellow who rides the motorcycle, my wife calls them "donorcycles," and he has an accident and he is brain dead, but his tissues are still quite good, so they take the tissues from this dead person and implant them. We do that all the time. So there was a thought, and research, observations, seem to verify that indeed there is the possibility of doing that.

The next chart shows us a fourth technique, which is a very exciting one. If, in fact, we can do this, this holds enormous potential, because now we can avoid all of the rejection phenomena.

You see, if you develop a tissue from a embryonic stem cell line or an adult stem cell line and you now put that tissue in a person, it is foreign to them and it will be rejected. So we have a lot of medicines we give which makes them very susceptible to infections and so forth. We have medicines we give them now so they won't reject this tissue.

But in this reprogramming, you now could potentially take a cell from the patient and you could reprogram that cell. What they are doing here to reprogram is exploiting these very fascinating and powerful control factors which are out in the cytoplasm.

Here we have an embryonic cell and it has a cytoplasm, and you can crush the cell and you can now put the nucleus of the donor cell in, or infuse it with this stuff from the embryonic stem cell, and it will now control the nucleus and de-differentiate it and take it back to its primordial state so it now behaves as if it were a embryonic stem cell.

□ 1700

The only possible ethical criticism of this is that where do you get these sex cells to begin with? Well, if you get them by superovulation of the mother, there is some medical risk in superovulation. There is also the possibility, though, that we could dedifferentiate by subjecting them to some sort of a chemical, which would have the same effect on them as these control factors in the cytoplasm here; it is referred to as cell soup, and there are these little polypeptides in there that, like polypeptides that are in a ribonucleic acid which can control what happens in the nucleus. But you may also be able to affect what they do by subjecting them to some sort of a chemical which would kind of reprogram them.

And then the last thing here at the bottom simply looks at stem cells from mature organs. And the one that I mentioned, which is one frequently used, is from the bone marrow, because even in the adult, even today I still have stem cells in my bone marrow because my bone marrow is always making white blood cells and red blood cells and thrombocytes. They are the little cells that are responsible for the clotting of your blood.

Next, I have a chart, and I think there are several of these that look in

more detail at Dr. Landry. And Dr. Landry is the one who first made the suggestion. He has proceeded with some vigor to explore the potential here for getting cells, good cells, from a clinically dead embryo. And, of course, the first thing you had to do was to develop a criteria for embryonic death. You need a dead embryo that still has good cells. And, again, let me use the analogy of the dead person from the auto accident who still has good organs. So this is a dead embryo who still has good cells. And it says here that we need a diagnostic test for embryonic death, because if one researcher is going to use cells from an embryo that he says was dead, there has to be some verifiable basis for declaring that the embryo was dead so other people would understand. So obviously it would be dead if he kills it, but it needs to be dead before he takes the cells from it.

Death is a question of medical fact, not law. We can't write a law that says what death is. And, indeed, clinical death now is not defined by law, it is defined by medical fact.

And these embryo do die, and they watch them. They are not dividing. They watch them for several days. They do not divide, and ultimately they just deteriorate, and they are gone. So the argument is that if you can identify when, in fact, they will never go on to develop an embryo, that at that point they are dead as far as any ability to produce a baby is concerned, and if you now do not wait for the several extra days to which deterioration would occur, the point of death, like the point of death from an auto accident where you can get good organs, at the point of death of the embryo, and when it will no longer develop into a baby, you now can take cells from which you can just have the stem cell lines.

The next chart shows a little more detail of this, and what it shows is that embryo 2 is dead. It shows that you can look at the embryo, and they look different, and it can be documented that, in fact, the embryos that are not going to go on to divide at a certain stage in their development look different. You can identify, you can say of a certainty this embryo will go on to divide, this embryo will not go on to divide. And so you can now make that determination. And when we have developed the techniques for this, and when we have determined that, in fact, we can develop stem cell lines from these, then we will have potentially a technique for getting embryonic stem cells without the destruction of an embryo because the embryo is already dead.

The next chart just is more detail of this. We can look at that quickly.

New criteria for embryonic death and natural history study of arrested embryos. They are arrested; that is, that the development stops at a certain stage. It won't continue beyond that. They observed 444 nonviable in vitro fertilized embryos; 142 were arrested at

the stage of an immature morula, about day 5, and we saw it in one of the previous charts. And they determined that these embryos were not going to divide because they just kept looking at them, and they ultimately deteriorated.

So if they, in fact, have good cells, and they have taken cells from these embryos, and then cells, in fact, are viable, and they can be cultured, and so with more research on this, this is a possibility for getting embryonic stem cell lines.

The next chart shows what happens in twinning. And it was this knowledge about I guess it was 5 years ago now when before the President gave his Executive Order, there was an open house at NIH, and staff and members were invited out to talk with the researchers at NIH about the potential for embryonic stem cell research. And there were a lot of staff members there; I think I was the only Member there. And I remember thinking as we were talking about embryonic stem cell research that this is what happened. And it doesn't always happen at this stage, by the way, but this shows the development of twins splitting at the inner cell mass stage. The inner cell mass splits; now the embryo splits in half, and now you have two babies. This also could occur at the two-cell stage. It splits in half at the two-cell stage. And you know roughly when it split by how the babies present. In this case, the babies present in two separate amnions. If it is split here at the two-cell stage, they present in a single amnion.

But what this told me was that obviously you could take cells from an embryo and not hurt the embryo, because in this case half the cells are taken from the embryo. This half went on to produce a baby, and this half went on to produce a baby. So if you could take half the cells from the embryo, and each half produced a normal baby, then why couldn't you take a cell or two from the embryo without hurting the embryo? And I asked the researchers at NIH shouldn't that be a possibility? And they told me, yes, that should be a possibility.

And I was in an event with the President and mentioned this conversation to him, and a couple of days later Karl Rove called and said that he had followed up on this at the President's request, and they couldn't do that. I said, "Karl, either they didn't understand your question, or they are funning you, because these are the same people that can go inside of a cell and take out the nucleus and put another nucleus in the cell. And they are telling you they can't take a cell or two out of these big embryos? Of course they can." And a female sex cell is big. That ovum is a giant cell compared to the somatic cells that they are taking a nucleus out of.

So he said, "I will go ask them again." And so he went back and asked them again. He came back and said, "ROSCOE, they tell me they can't do

that." So the President came down with his Executive Order which says that the only stem cell lines we can use Federal money to do research on are those that are now already in existence.

It was a couple of years after that when NIH researchers were sitting in my office that I learned what had happened. Mr. Speaker, this is illustrative of what happens so many times in our society. When we think we are carrying on a dialogue, we are really carrying on simultaneous monologues, and there was just a misunderstanding.

What they told him was that they weren't sure that they could develop a stem cell line from a single cell taken from an early embryo. And that was true. He interpreted it as saying that they couldn't take the cell from the early embryo. Well, what we wanted to do with our research was animal experimentation, which would determine whether or not you could develop a stem cell line from a single embryo. And, as luck would have it, Mr. Speaker, the medical community has kind of almost passed us by now, because in the 5 years since I first started exploring this with NIH and then the White House and then a number of meetings with NIH since then, as I mentioned, in England they have developed techniques for taking a cell from an early embryo, the H cell stage, in the laboratory, doing a preimplantation genetic diagnosis, making sure there was no genetic defect, and then implanting the remaining cells, the embryo, in the mother, and more than 2,000 times worldwide now we have what appears to be a perfectly normal baby born.

I keep saying what appears to be because we haven't watched these babies for 60, 80, 90 years, however long they will live, to make sure there is no defect. But I would be enormously surprised, and so would the professional community, enormously surprised, if there are any defects. Because if there were, then every twin ought to have a big defect because they represent only half the cells from the original embryo.

In our conversations with a number of people, we were talking with Richard Doerflinger, who represents the Council of Catholic Bishops. And I really want to credit him with making an incredible contribution to this dialogue, because what he said was, "ROSCOE, what you do with that first cell you take is not a preimplantation genetic diagnosis. What you do with that cell is to establish a repair kit." So that now any time during the life of this baby, 1 year, 10 years, 50 years, 80 years old, when they have a medical problem that could benefit from the development of tissues from embryonic stem cell line, it can be developed from their embryonic stem cell line because you have got this repair kit available for them.

What this did, Mr. Speaker, is to open up the possibility when we are using Federal funds of avoiding, I think, any ethical concern, because the

parents will have already made two decisions: one, to do in vitro fertilization; and, secondly, to take a cell to establish a repair kit and maybe to do a preimplantation genetic diagnosis if they want to take a second cell. And frequently they get two cells rather than one from this early embryo, and it doesn't matter if you take one or two, the other cells go on to produce a perfectly normal baby.

So if this is a potential for the future, the stem cell lines could be achieved by simply asking the parents to donate a few cells from their repair kit. So now the decisions made to get to the repair kit have been decisions that parents make in what they think is the best interest of their child. They want to have one, they can't have one naturally, so they do in vitro fertilization, and they want to make sure that the child has the protection of a repair kit.

And, by the way, we kind of do that now when we freeze cord blood. Cord blood has nowhere near the potential of a cell taken from this early embryo, but it is that person, and for whatever you can get from it, at least there are going to be no rejection phenomena.

The next chart shows a bit of one of the pages of the white paper on the President's Council on Bioethics, and I have highlighted here. It may be some time before stem cell lines can be reliably derived from single cells. Again, this was written now in about late 2001 or 2002, but since that time we have had two researchers, Verlinsky and Landry, both of whom claim that they have developed a stem cell line from a single cell. That was what NIH thought might be difficult to do, but there are now two researchers who say they have done that.

They say it may be some time that stem cell lines can be reliably derived from single cells, extracted from early embryos, and in ways that do no harm to the embryo. Well, they have more than 2,000 babies born by extracting these cells. But, again, if we simply use surplus cells from a repair kit, we have avoided, I think, any meaningful ethical objection.

But the initial success of the Verlinsky group's efforts, I mentioned Verlinsky and now Landry more recently, and note here an asterisk. And they say, "A similar idea was proposed by Representative ROSCOE BARTLETT as far back as 2001." And you can see it has been for 5 years since I have been pursuing this possibility.

The next chart and our last chart kind of is a summary, Mr. Speaker, of what we have been talking about. And what this does is to look at the classical development when you go to the eight-cell stage, and then it develops into a blastula, and you can now either implant that in the uterus, or you can kill it to get stem cell lines.

□ 1715

You can now either implant that in the uterus or you can kill it to get

stem cell lines. Ethically, that is not something that I am comfortable with. It is not something I think a majority of our people are comfortable with, or you can go through what we have just gone through, take a single cell from this blastomere here and implant the remaining cells, let them develop, implant them and then develop a stem cell line from this single cell, then the altered nuclear transfer that we talked about.

This kind of summarizes the potential from those two techniques, and again, what we have done to make this ethical is altered nuclear transfer. We have shut off one of the genes in the cytoplasm so that the nucleus now cannot be induced to make all of the tissue necessary to produce a baby. It produces all of the tissues necessary for baby, but not the tissue necessary for growth of the baby in the womb, the amnion and the chorion.

The important thing, Mr. Speaker, is, and I want to be politically correct for just a moment here. It is not just that we want to do things that are politically popular. We certainly do not want to do things that are politically unpopular because we all like to get re-elected and return here, but we want to do things which have medical meaning.

The Senate, I believe, very shortly is going to vote on the Castle bill. The President has said that he will veto that. Many people, and they come to our offices, these children with diabetes and so forth, people who have relatives who have Parkinson's disease or any one of the wasting diseases of the nervous system that might be treated with this, and they are incensed we are not doing something about this and using their money to develop what they think is enormous potential from these stem cell lines.

The President will veto because he is devoutly pro-life for which I respect him. He will veto the Castle bill. We need to have on the President's desk not just for political purposes, although I think that is important, but because of the enormous potential from embryonic stem cell lifelines, we need to have a bill on his desk that will permit the use, the ethical use, of Federal funds to produce these stem cell lines from which we might get enormous good.

The miracles of medicine have increased lifelines. I just passed my 80th birthday. I am wondering when I am going to enter mid-life. My grandfather would have never thought of entering mid-life after his 80th year, but we have really miracles of medicine today, and this provides miracles greater than we have seen.

Now we have enormous potential here, and I hope, Mr. Speaker, we have the political courage to do the right thing for the American people and get this bill, along with the Castle bill on the President's desk so that the President has a bill which promises the miracles, potential miracles of embryonic stem cell research ethically.

PAYING TRIBUTE TO THE LATE MANNY CORTEZ

The SPEAKER pro tempore (Mr. SCHWARZ of Michigan). Under a previous order of the House, the gentlewoman from Nevada (Ms. BERKLEY) is recognized for 5 minutes.

Ms. BERKLEY. Mr. Speaker, I rise today to pay tribute to the late Manny Cortez.

I am profoundly heartbroken by the untimely loss of my dear friend who passed away last Sunday. I adored Manny Cortez and will be forever grateful for his help, his support, his love and his friendship. He was a wonderful human being and a true gentleman.

Manny was more than just family man and a dedicated public servant. He was a visionary who helped shape southern Nevada as we know it today and who worked tirelessly to turn Las Vegas into the world's most famous travel destination.

Manny earned worldwide respect as a leader for Nevada's tourism and hospitality industry. Under his leadership, the Las Vegas Convention and Visitors Authority became the gold standard against which all others in the business are judged. His lasting legacy will shape southern Nevada as it continues to grow in the 21st century.

Whether as a public servant or as a private citizen, Manny was dedicated to making southern Nevada a better place to raise a family, run a business, or just to visit. Las Vegas would not be the city it is today without the hard work, vision and dedication of Manny Cortez.

My deepest sympathies go out today to the Cortez family. I know I speak for countless others when I say our community has lost not only a remarkable man, but a true leader who left his unique mark on southern Nevada and its top industry.

I am truly blessed to have been able to call Manny Cortez my friend.

More than any of his truly remarkable accomplishments that Manny could claim over the course of his political and professional career, I know that his family meant more to him than all the accolades or money in the world.

Come this November, I know he will be smiling, knowing that the same call to serve and the same desire to give back to the community that motivated him to seek and serve on the Clark County Commission was at the very heart of his daughter's campaign, Catherine's campaign for Attorney General of Nevada.

Manny Cortez was born on April 29, 1939, in Las Cruces, New Mexico, the oldest of two children of Edward Cortez, a baker, and the former Mary Tapia.

The Cortez family moved to Las Vegas in 1944. As a youngster, Manny attended St. Joseph's grade school and graduated from Las Vegas High.

Manny Cortez attended Nevada Southern University, which later be-

came my alma mater, UNLV, and received an honorary degree from Community College of Southern Nevada.

Elected in 1976 to the Clark County Commission, he served four remarkable terms. During his tenure, he served as chairman of that body, as well as chairman of the Clark County Sanitation District and the Clark County Liquor and Gaming License board.

Manny was also on the governing boards of the University Medical Center, Las Vegas Valley Water District and on the Fiscal Affairs Board of the Las Vegas Metropolitan Police Department.

Prior to his election as a county commissioner, Manny served as administrator of the State of Nevada Taxicab Authority. His background included employment with the Clark County District Attorney's office and the Clark County public defender's office.

Manny began his service on the Las Vegas convention and Visitors Authority board of directors in 1983 and would go on to lead that agency at a time of the most rapid growth for southern Nevada, the Las Vegas strip and for our tourism industry.

By 1991, Manny had earned the title of president of the Las Vegas Convention and Visitors Authority, the largest convention and visitors organization in the United States. That year, southern Nevada welcomed more than 21 million visitors. By the time of his retirement, that number had grown to 37 million visitors annually.

Travel Agent Magazine named Manny the United States Person of the Year for 1999, calling him "one of the most astute marketers in the tourism industry."

During his tenure as president of the convention authority, the organization came to be regarded as the travel industry's leading destination marketing organization.

Manny was a participant in the White House Conference on Travel and Tourism, and in 2003, the United States Department of Commerce appointed him to the then-newly created U.S. Travel and Tourism Promotion Advisory Board. His role on the board included representing Las Vegas and the United States travel and tourism industry.

Manny, and perhaps this is the most important thing, he is survived by a wife, Joanna, who was his beloved helpmate and friend for 45 years; daughter Cynthia Cortez Musgrove; and Catherine Cortez Masto; a sister, Patricia Snider; and two grandchildren, Andrew and Christina, all of Las Vegas.

There will never be another Manny Cortez, but every time I return home to Las Vegas, his legacy will be on display for the entire world to see and admire.

On a very, very personal note, there is not anybody that was more important to the travel and tourism industry in Las Vegas Nevada than Manny Cortez. He was a dear friend and a mentor to many, many of us who are now serving in public office and have made a