

Issues in Bioethics
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Module No. #01
Lecture No. #04
Historical Evolution of Bioethics

Hi, Welcome to this course on Issues in Bioethics. This is Module One, Unit Four. And in continuation with the previous lecture, we will here also will examine the Historical Evolution of Bioethics. So, in the previous lecture, we have examined some of the historical factors, that have led to the emergence of Bioethics, Modern Bioethics. Particularly, the Bioethics of experimentation. We have seen the Nuremberg Code and the Helsinki Declaration and other things and also the most importantly the Tuskegee Syphilis study.

How these historical events have the lead to the emergence of Modern Bioethics or Ethics of Medical Research, Human Experimentation. And now, in this lecture, we will focus on some of the very important Scientific events. Technological and Scientific events that have revolutionized, the practice of modern Medicine.

There are certain Scientific and technological innovations, which can be termed as milestones in the history of the emergence of Bioethics. These innovations played a very important role in generating certain issues, certain problems, in response to which the societies, have to come up with Ethical responses for regulating practices.

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Technology and Medicine

- Technology invents new possibilities and new situations that require new ethical approaches.
- Individual human dignity Vs. social usefulness.
- New questions about life, death and meaning of life.
- Social problems: longer life expectancy poses a host of problems.



Now, Technology and Medicine. We will see the Technology, invents new possibilities and new situations that require new Ethical approaches. So, this is the underlying theme of this lecture, that how new technologies or technological practices are created certain situations, which were totally unfamiliar for humanity.

See for instance, many such possibilities have created confusion, created a conflict with religious insights. We can take the example of reproductive ethics and sex selection. For example, if you take the example of sex selection, which is actually a Scientific possibility today. What is wrong in families deciding about sex balances. We can raise this question. And I am just giving this example because this will give a very interesting context.

This problem has a very interesting meaning in our context, in the Indian context. What is wrong with sex selection. What is wrong, if a family decides, they already have a boy child and now they want to have a girl child. What if they decide to have a girl child and select their child. And, since the Technology is available to some extent for doing this, for going for a selection, what is wrong, if they do that. And in country, our country has banned the whole process of sex identification through scanning.

No scanning centers are legally allowed to do this. So, in Indian society, in our society the possibility of this Technology for identifying the sex of the child has created certain issues. Those issues are very peculiar, probably to our society. Because of the way in which our

societies constituted. This may not be the case in many other countries, in many other countries this is allowed. Such, even sex selections are allowed. But in India, such things are not possible legally.

So, Ethical issues have a very strong social implication or rather, Society plays a very important role in deciding, what is right and what is wrong, through implementing laws and other things. But Ethically, it is very interesting to examine the possibility of such cases. And these technologies bring many such possibilities and also generate many such interesting Ethical dilemmas and confusions in our society.

Another very important case is Abortion. Abortion is another domain, which have generated a lot of heated discussions in our present day. We will be discussing that in one of our future lectures. The question is, whether families have the right to do that. Whether the woman, conceiving woman has the right to abort her child. Whether, she can do that, without consulting anyone. Whether, she has the absolute right to do that legally. There are certain restrictions for that in our country today. Because after a certain stage, Abortion is not allowed. After certain weeks of consumption, Abortion is not allowed.

But, what happens that particular day. You know, till this week, this day it is allowed. After 12 o'clock in the night, it is not allowed. So, this creates a very interesting scenario. What makes the fetus important, after that particular day. Does the fetus have Life. Is it necessary, that we should treat the fetus as a person? All these are very interesting questions, which have come up in the context of new technologies that have developed.

Now, Individual Human Dignity versus Social Usefulness. This is another very important issue, which modern-day Medicine has created or rather modern societies are facing because of the advancements in modern Medicine. So, that the domain of medical practice is so advanced, medical technologies are so advanced, that for many diseases, we have effective Medicines today.

But for many diseases, we do not have effective Medicines but we can still save the Life of the patient. But, what happens after that. Say, for example a patient, who is undergoing for Renal treatment for the past several years.

For a kidney patient, who has been undergoing the dialysis almost every week. what would be the quality of the Life of that person? What is wrong, if that patient requests for Euthanasia? A Life versus Dignity. Or the patient thinks that ah he or she doesn't want to live. Because he/she is not able to deliver things, which normal human beings can do. So, he or she doesn't see any value in the Life in continuing like this. What is wrong, if the societies allow such a patient to kill himself or create situations, where this can be done through assisted physician, assisted suicide, which is called Active Euthanasia.

But in our country, this is not allowed. We still allows Passive Euthanasia but we don't allow Active Euthanasia. So, there are many such issues, which are Technology has generated in our society. And new questions about Life, Death and meaning of Life. So, Technology has been raising these questions. What is Life. How you define Life?

Because, the traditional conception of Life is totally changed now. Because now, we have a concept of Death, which is associated with the notion of brain Death. Which was not the case earlier. In the case of heart transplantation, we need a heart of a beating heart of a living person, living quote unquote but brain dead. Because, we cannot take a heart from a living person. But the person should be brain dead but living. So, this in this is a very interesting scenario.

And again, there are social problems like there are new Medicines for many diseases. And, this is definitely added to the Life expectancy of citizen. But, this Life expectancy poses a host of problems, like you know, when you have increased number of senior citizen in a society, there a lot of other issues, health issues, the money, you have to spend for your health insurance and various other things. All these are problems, which a modern society have to grapple with.

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New Technologies

- Artificial ventilators.
- Organ transplantation.
- Artificial organs - Artificial Kidney.
- Discerning the double helical structure of the DNA molecule.
- Heart transplantation.

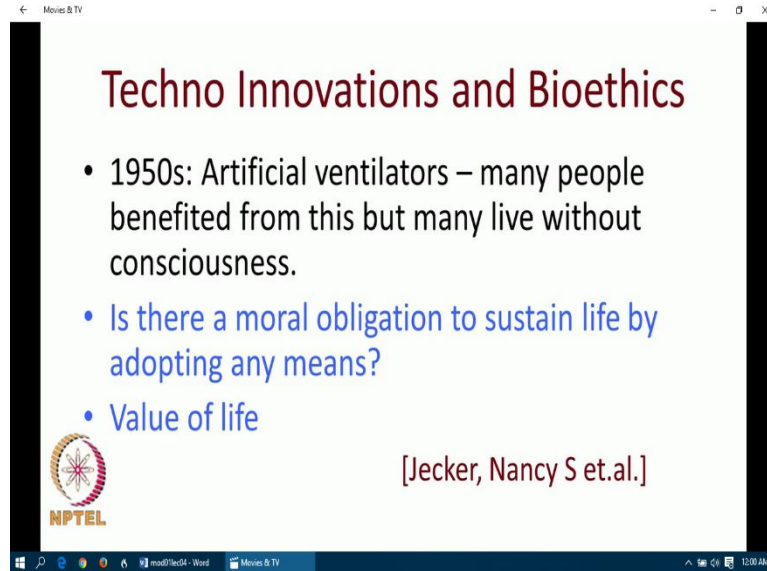


Now, when we talk about new technologies, let's take the example of artificial ventilators, which is again a very commonly used Technique, Technology by Modern Medicine and Practitioners today. And then, we have another one, organ transplantation, which is actually came as a boon to humanity from Modern Medicine. Possibility of organ transplantation has resulted in saving many thousands of Life in the world.

Again, artificial organs, like artificial kidneys, which is another very interesting possibility of modern Medicine. Which is also Life-saving a lot. And then discerning the double helical structure of the DNA molecule. This landmark Scientific discovery has created a lot of possibilities, generated a lot of interest by physicians as well. But, this is quite landmark in that sense, then heart transplantation particularly heart transplantation.

Because I already mention the transplantation of heart raises the problem that it makes, as it forces us to redefine of traditional concept of Death.

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The image is a screenshot of a presentation slide titled "Techno Innovations and Bioethics" in a red serif font. The slide contains three bullet points: "1950s: Artificial ventilators – many people benefited from this but many live without consciousness.", "Is there a moral obligation to sustain life by adopting any means?" (in blue), and "Value of life" (in blue). In the bottom left corner is the NPTEL logo, and in the bottom right corner is the citation "[Jecker, Nancy S et.al.]". The slide is displayed in a window titled "Movies & TV" with standard Windows taskbar icons at the bottom.

Techno Innovations and Bioethics

- 1950s: Artificial ventilators – many people benefited from this but many live without consciousness.
- Is there a moral obligation to sustain life by adopting any means?
- Value of life

[Jecker, Nancy S et.al.]

NPTEL

Now, when we talk about the techno innovations and Bioethics, let us begin with the artificial ventilators, which came into existence in 1950s. And, many people benefited from this, but many live without consciousness. So, this on the one hand, saved a lot of lives - artificial ventilators. But on the other hand, what it is happened was though, you can technically, theoretically save the lives of people but many people, lie unconscious.

They have lost their consciousness but they are still alive. So, that created a dilemma, if you plug off, if you take the ventilators off, the patient will die. Can you do that. So, these are host off problems, such technologies generate.

Is there a moral obligation to sustain Life, by adopting any means is a question. There are patients, who use ventilators. Physicians use ventilators to save their Life. But at some point, of time, Physicians realize that, there is no point in continuing this. Because there is no possibility of a recovery.

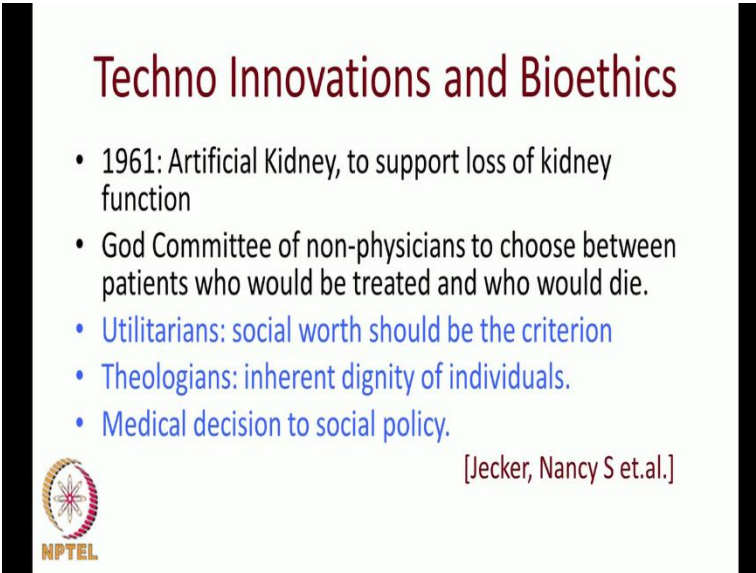
They do not see that that, the patient might recover in future. So, in that context they might Scientifically recommend a withdrawal of the artificial equipment, which means, the patient would immediately die. And now the question is, who takes the decision. Whether the patients relatives can take the decision or the physicians take the decision or is there an objective committee to take up such decisions. So, all these are confusing issues, which we face today.

There is this, whole idea of value of Life, which became quite relevant in this context.

What is Life is suddenly the whole concept of Life, the whole idea of Life looks very different that if you unplug it, the person dies. The patient's Life depends a lot on this Technology. So, can you just withdraw that facility and allow the patient to die. But, there is on the other hand no possibility of a recovery. So, what will you do. So, this involves a lot of social issues, economic problems you know because the patients relatives will have to support this treatment. How long can they do that.

The 1961 Artificial kidney. When artificial kidney was invented to support loss of kidney function. This was a boon to thousands of patients, no doubt about it. There was a Guard Committee of non-physicians to choose between patients, who would be treated and who would die. So, the it has created a situation, where there were many more people who required this facility than hospitals can really support.


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Techno Innovations and Bioethics

- 1961: Artificial Kidney, to support loss of kidney function
- God Committee of non-physicians to choose between patients who would be treated and who would die.
- Utilitarians: social worth should be the criterion
- Theologians: inherent dignity of individuals.
- Medical decision to social policy.

[Jecker, Nancy S et.al.]



Since the society has to make a choice. We have to actually make a choice. What would be the basis? On which, such choices can be made? Can doctors make a choice? No, doctors they are physicians are only men of Science. They cannot make such a choice. They can only treat

people, who come in front of them and they cannot decide who deserve such treatment over others.

So, for that a committee of non-physicians were formed and this is known as God Committee. So, the formation of God Committee is a very interesting landmark in the history of Bioethics. Because for the first time, a group of people started deliberating upon, what, who deserves a particular treatment, which is available but which is not available. So, that it can satisfy the demands of everyone. So, there are certain limitation resources. Resources are limit. So, it has to be allocated properly. So, the whole problem of resource allocation come into picture and there was an committee to decide, who deserves it.

So, again we know this scenario would create a host of issues, very interesting Ethical problems. The Utilitarians would argue that, the other social worth of a patient should be taken into account, when you decide. See you need a criteria, on what basis the God Committee can take a decision. So, can it be first come first serve or suppose in a situation, where an important person comes. Suppose a Minister or a Great Scientist viza-vi another person, a Layman.

But, the Layman came before the Scientist, so can you just allow the Layman to die and take the Scientist in spite of the fact that the Layman came before him. So, or can you allow the Scientist to die, just before the Layman came five minutes before him. So, if you take social worth of the person to be considered, definitely the Scientist will have to be considered. The Scientist will gain the benefit. So, that is what the Utilitarians would argue for. But again, Theologians would oppose this. Many of the religious people would oppose this.

They would say that; it is important to recognize the inherent Dignity of individuals despite the fact that you are a Scientist or a Minister or a Layman. That is something, which is inherently in you, there is something, which is in you, that makes you inherently worthy of respect. That is the Dignity of man. So, this is not just a theological concept but it is basically argued by the Theologians.


Now this actually, this incident, the appointment of the GodCommittee and the deliberations they have undergone, is a very interesting phenomenon in human history. Because it is the first time, medical decisions were linked to social policy. And in that way, that added another dimension to modern medical ethics. The policy dimension, which is very important in today's world.

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← Movies & TV

Techno Innovations and Bioethics

- 1956: Watson and Crick had discerned the double helical structure of the DNA molecule.
- The secret of life!
- How biological organisms develop?
- How defects enter that development?
- How can we modify that development?

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Ethical Concerns

- Improvement of humanity through controlled breeding and sterilization.
- Ill-conceived eugenics.
- Modifying human characteristics.
- Perfect humans! – what would be the criteria.

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The two discoveries, which we have mentioned earlier, artificial kidney and the other one. They were at, they were direct Scientific, the two discoveries, the two innovations, we have mentioned earlier. The ventilators and the artificial kidney. They were very direct medical innovations. Innovations that have happened in medical technologies. But, there are certain other, very Scientifically important discoveries, which created a revolution in the practice of Medicine.

For example, in 1956, when Watson and Crick had discerned the double helical structure of the DNA molecule, this is a very important incident in the whole history of Science and also in the history of modern Medicine. Because with this, the Scientist have discerned the secret of Life. It has been claimed that, this Scientist, the Scientific world has come up with the secret of Life, uncovered that secret.

And it tells us, how biological organisms develop. You can potentially map it. Tell us how organisms are developed and how defects enter the development. So, in that way, if you can

know, how defects enter in to the development of biological organism, we can also think of methods to avoid them.

How can we modified the development, so that defects can be avoided or overcome? So, this possibility has created a lot of interest in the Scientific world and particularly in the world of Medicine. Now on the one hand, as I mentioned, you know many of this medical innovation have their benefits, on the other hand they raise very serious Ethical concerns, which have got individual and social and other implications.


So, when you take the Ethical implications, the improvement of humanity through controlled breeding and sterilization. No doubt, this is got certain positive impacts on humanity. But at the same time, it can also create certain very serious Ethical concerns like, this will generate the talk on Eugenics. Particularly in the context of the political developments, that have happened in a during the, particularly in the context of the political developments that took place in Germany, which led to the second world war.

Again, modifying human characteristics, so this leaves the possibility, the Scientific world now have the possibility of modifying human nature, human characteristics. We can think of creating perfect humans. What would be the criteria that the whole idea is that okay, you can have a concept of or you can practically develop, what you want. And you want to develop the perfect human being, the perfect human nature. But, what you mean by perfection? What is the criteria? Who is your model of a perfect Man? All these are questions, which become very relevant in this context.

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Techno Innovations and Bioethics

- 1968- Dr. Christian Barnard transplanted a beating heart to a person who lived for several months.
- Heart transplantation is different from renal transplantation: only dead people can be the donors
- But not dead in the conventional sense: the heart must be beating.
- Can we consider such a person dead?
- Demands a new way of seeing death.



Again, this is another incident, another very important innovation, which I have briefly mentioned. The transplantation of the heart in 1968 by Dr. Christian Barnard, who transplanted a beating heart to a person, who lived for seven months. This as I mentioned, you know heart transplantation is different from Renal transplantation.

Because, only dead people can be the Donors, here in the case of heart transplantation. The case of kidney, one of your kidneys can be donated and you can still live. And many people, many Donors are living Donors in Renal transplantation. But that is not the case with heart transplantation. You the person, who donate the heart will inevitably die or rather to put it in other words, the person should have been dead, brain dead at least. And the heart has to be taken out as soon as possible and transplanted to another person's body.


So, this makes the situation, the very interesting situation, very paradoxical situation, where you need the heart of a living person. A living person, who is dead, who is brain dead but whose heart is still working. So, in that sense, you know, we can say that, he is not dead in the conventional sense. Sometimes you know people, Scientist even say that the body parts, some of the body parts will be still moving involuntarily, because of certain moments inside the body. And the body still maintains the temperature and blood circulation will be there.

Because, the heart is quite active and in that situation, can you really call that person dead? Can we consider, such a person dead? Demands a new way of seeing Death. So, today the Scientific world has arrived at this new way without much of a trouble. Today, we know that, you know Death means brain Death. We don't associate Death with the stoppage of heart. We normally associated with brain Death as well. And brain Death as the cessation of brain activity.

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Technology and Medicine

- Several issues were raised by the introduction of new technologies into medicine.
- How to choose the beneficiaries of medical technologies?: dignity, justice, rights etc.
- Life Vs. quality of life: right to die, right to dignified life, withdrawal of treatment, consent issues etc.
- Issues related to Death, life and personhood: many advancements questioned traditional views.



Okay, now again, as we have seen several issues were raised by the introduction of new technologies into Medicine. Now the question before us is, how to choose the beneficiaries of medical technologies. Dignity, Justice, Rights all these are the questions, which are raised in this context. Some of the issues, which we have already examined.

The God Committee had encountered this problem. How to make a choice. Dignity needs to be given importance or when it comes to the question of Justice, the right kind of Technology needs to be applied in certain context. So, we need to follow the principle of Justice, but what do you understand, what do you mean by Justice? How do you understand Justice? And in several contexts, the application of such Ethical concepts like Justice and Dignity are not very straight forward. They happened in a very confused environment.

Life versus Quality of Life. This is another problem, which introduction of modern technologies are repandly introducing. Because, there is Life. These technologies are capable of maintaining Life. But, what about the quality of Life? But again, what do you mean by quality? For different people, that is different. But still to some extent, we can say that you know people, who are able to take decisions in their Life are conscious. They maintain some sort of autonomy about their lives. But to some extent alone, but then you know, what you mean by quality of Life, qualitatively better Life. Do people have the right to a qualitatively better Life?

And if such a Life is not possible, do they have the right to die, suicide? These are some of the issues, which again modern societies will have to grapple with. Again, the right to die, right to dignified Life, right to die and write a dignified Life are related concepts. The withdrawal of treatment might create a lot of dilemmas in modern Life, because the patient is unconscious and who is going to decide for the patient. whether it is the physicians or the relatives or the parents or children.

All kinds of emotional, social, economic factors play a role in making decisions. And consent issues, what do you mean by consent because when a sophisticated medical technologies employed. Many of the physicians, do not understand, how this Technology is going to work. They do not understand the various implications of this Technology. For instance, a patient is given a choice between a keyhole surgery and an open surgery. In an open surgery, the patient knows only one thing. That in an open surgery, the physician might cut his body and after surgery, there will be a lot of pain and it will take time for him to recover completely.

In a keyhole surgery, the pain, the amount of pain will be reduced and recovery period also can be significantly reduced. That is fine. But, what about the benefit, what about the effectiveness of the treatment. which surgery is going to be more effective. So, there, the physician might not better than the patient. Now, how can the patient take a decision there. Physician cannot say that it is up to you. The physician is expected to give the patient a picture of the entire scenario. Since, he is supposed to be an expert in the situation and the patient is not. So, these are some of the issues, which Technology again create.

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Technology and Medicine

- Issues related to sexuality and reproduction: prevention of birth, treatment for infertility and manipulation of human embryo, contested parenthood, manipulating human genetic structure, ill-conceived eugenics, cloning etc.
- Stem cell research: isolation of stem cells from human embryos.



And issues related to Death, Life and Personhood. Many advancements questioned traditional views. See, what do you mean by a person again, when I mention some time back about Abortion. I have mention about this concept, whether the fetus can be treated as a person. When do you treat, a person possessing his Personhood?

Whether a patient, who has completely unable to take proper right decision can be treated as a person? So, in that the absence of that ability to take decision, someone else has to take decisions for him. So, can we say that his Personhood is withdrawn from him or taken away from him. So, all such complicated issues, we have to tackle with. So, basically again issues related to sexuality and reproduction.

This is another extremely complicated and sophisticated domain, where Technology plays very crucial roles in Human Life. Sexuality and Reproduction, Prevention of Birth, Treatment for Infertility and manipulation of Human Embryo and contested Parenthood, manipulating Human Genetic structure, ill-conceived Eugenics, Cloning etc.

These are a host of problems, which will be discussing in detail, some of them later. But, you know today with the available Technology, we can prevent birth from happening, which causes a lot of confusion, which a lot of conflicts with the Theologians. Because, Theologians would not

agree with this idea of prevention of birth. For them, this is something, which is given by god. So, a strong set of values are contested, when a new Technology is introduced.

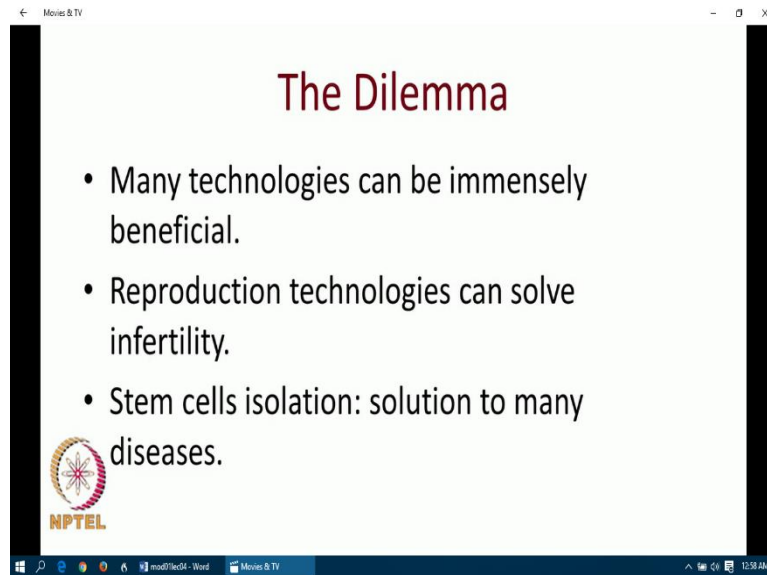
Again, treatment of infertility, that is actually gives a lot of possibilities, like a lot of people can become parents now. Because, there is treatment of infertility possible, are available with the new technologies. But, on the other hand, these technologies now integrate with them. The possibility of manipulating Human Embryo. They can now choose the best, the better child, the healthier fetus can be selected. All such new possibilities have generated.

Again, questions of, who makes the selection. Whether it is God or Nature or Man or Parents or Physicians, all such issues come into picture. Then contested parenthood, this is another possibility, which modern Technology is creating. Because, in modern, with the help of Technology, today surrogacy has become a possibility.

So, virtually a child can have three parents. Like the child, can have a father and a mother, who is the child's biological mother and the surrogate mother. So, who is the real parent of the child. Whether the surrogate mother or the real mother. Host of problems arise from that context. Then, manipulating human genetic structure, ill-consumed Eugenics, I have already mentioned about all this and Cloning is another area. Cloning has come during the 1990s as a major possibility, a technological possibility, which created a lot of issues.

Another extremely important area is Stem Cell research, where Scientists have isolated, Stem Cells from human embryos, which can actually grow in to any organs, which can potentially solve many problems, which many health problems, which humankind encounters. But at the same time, generates a lot of Ethical challenges.

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And the real dilemma is, as I have been underlined. Many technologies can be immensely beneficial. Reproduction technologies can solve infertility. Stem Cells isolation can solve many diseases. But, the humanity has to strike a balance. And only with the correct Ethical deliberations, this balance can be arrived at. How do you conduct this Ethical deliberation. That is a question. Because, we are living in a society, in even in India itself.

Ours is a multicultural society. In a multicultural society like ours, people advocate or people subscribe to different Ethical frameworks, different moral frameworks. Some people consider, Abortion as wrong, some people consider it as right. And, there are many things, when it comes to the application of technologies. Different people have different views about it. How do you arrive at the right view. What do you mean by the right quote unquote right view in this context.

So, it is extremely complex. Each situation is quite unique and complex. And, we have to negotiate with many factors, before we really decide in today's world, before we really come with a final solution, arrive at a final solution, we have to really negotiate with various factors. Each factor is very important. There are Scientific, Technological, Economic, Political, Social, Religious, Cultural factors.

And Bioethicist in the modern age, should be sensitive to all these factors, that play important roles in shaping Ethical values and principles in modern societies. Modern society itself is a very complex phenomenon. So, you need to have the ability to negotiate with that complexity. So, that is the where you can effectively tackle Technology. So, we will wind up this lecture now. The next lecture will see the whole idea of Frenetic Bioethics, which we are trying to arrive at. Thank You.