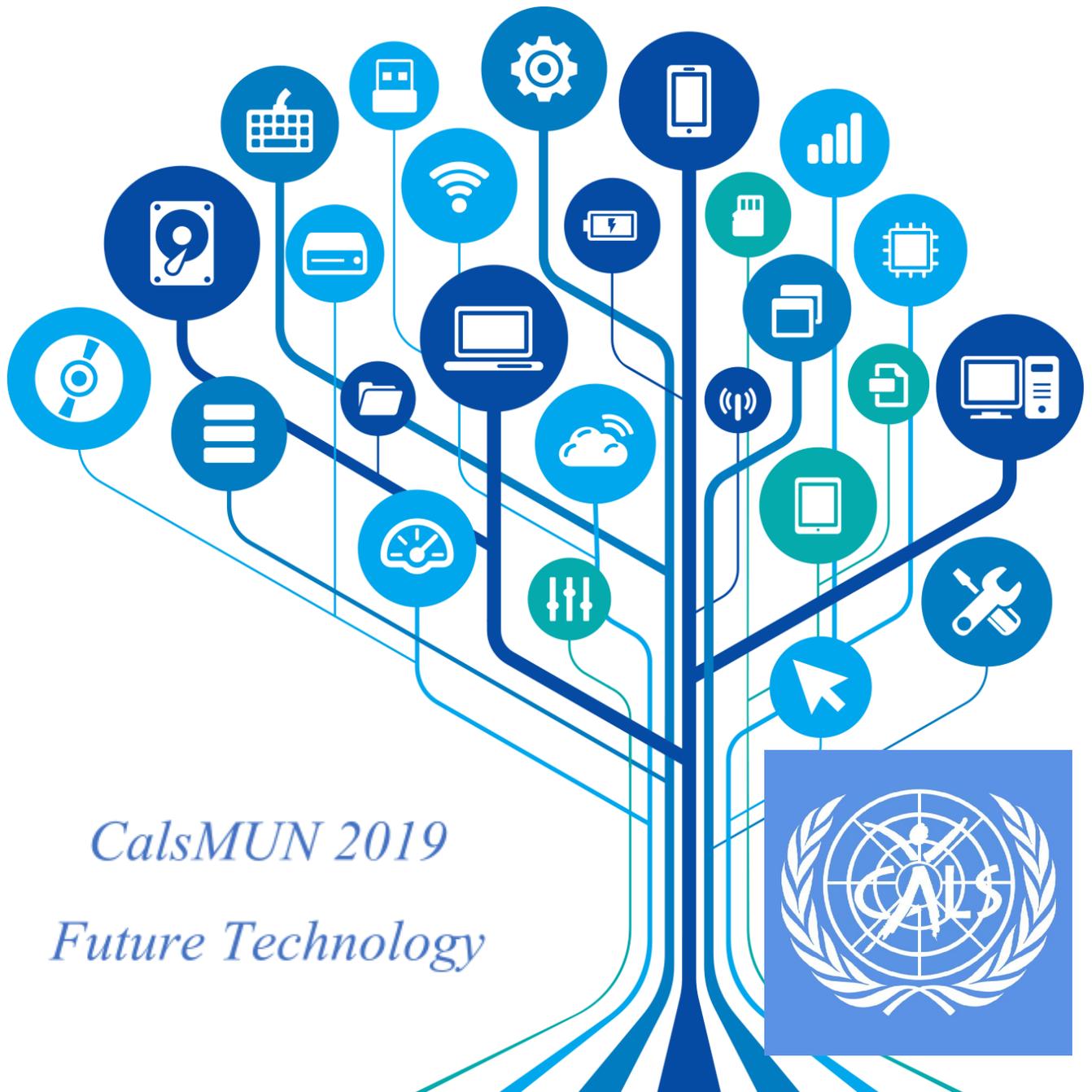




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Future Technology

Research Report

Forum: United Nations Commission on Science and Technology for Development

Issue: Ethics concerning cloning the human species

Chairs: Murron Rison and Lora Lagerweij



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Personal Introduction

Murrion Rison

Dear delegates,

It is with great delight that I may host you as a chair on the conference that once got me started in the wonderful world of Model United Nations. Some time has past since my first MUN and since then I have been fortunate enough to travel for a MUN to Rome! Matching my transition from high school to university, I also started doing university MUN's. As of now I am busy spending my time learning about the human mind and its ways in a bachelor Psychology at the university of Utrecht. Besides that I enjoy a good get together with friends, going to the movies and visiting museums.

CalsMUN has kept a special place in my heart. Not only is the first MUN that I attended, but I also got fortunate enough to be part of the organizing committee in 2018 as the head of press. (The CalsMUN website that you all can enjoy has sprouted from my deputy's and my creativity. I am very proud of it 💎💎) So I am very grateful to return to this wonderful conference. MUN is a place to learn, grow and socialize and I hope that is what you all will be doing in the upcoming weekend.

sincerely,

Murrion Rison, chair of the United Nations Commission on Science and Technology for Development.

Lora Lagerweij

Dear delegates,

My name is Lora and I live in Heemstede in the Netherlands. I'm 15 years old and have been doing MUN conferences for nearly two years now. I've been to six MUN's as a delegate which I enjoyed a lot. This will be my first time chairing and I'm very excited for it. I can't wait to meet you all and debate about the interesting issues of this committee. Good luck preparing!

sincerely,
Lora lagerweij



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Introduction

Many new technologies and inventions are developed every day. We are constantly thinking of new ways to prolong human life. Cloning is one of the ways this could be done. It would have many biological and cultural benefits but at the same time some of the applications of cloning go against the views of multiple religions and as well as reasoned ethical concerns. These ethics are the main reason that research isn't developed as far as it could have been. Many countries have or had a ban on further research on cloning or simply cloning itself. If more research could be done we would have a clearer view on what the effects of cloning humans would be and how this would affect us both medically and culturally.

Cloning can be done in two different ways; by nuclear transfer and by splitting an early stage embryo. Both technologies are not fully developed yet due to a lack of proper research. They have, however, been tested on animals. With success and due to the promising impact on medical advances has put pressure on several countries like the USA to legalise further research on cloning.

Definition of Key Terms

Bio-ethics

Ethical issues raised because of development on the field of Biology and medicine.

Nuclear transfer/ transplantation

The process of creating a genetic replica of a human being by removing the nucleus from a cell of an already existing person and then placing that nucleus in an existing human egg cell, replacing the nucleus in that egg cell, thereby creating a clone.

Stem cells

Stem cells are master cells with potential to develop into any of the body's tissue types. These are the cells that would be taken from a person to create a clone or recreate a part of the body.



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General Overview

The main reason to clone a human are the medical benefits. Clones could be the perfect donors for organs without risking the health of the person receiving the organ, because of the fact that this healthy organ would be genetically identical to the one being replaced. The body would adapt to this change more easily and it decreases the risks of major health problems occurring when receiving a donated organ from a donor who is not genetically identical to you.

The same thing can be done with producing new bone marrow for a patient by creating a clone of them. This would also bring us closer to producing a cure for certain forms of cancer or other illnesses.

Human cloning will also open a door for parents who can't otherwise reproduce because they both have a lethal recessive gene. They can choose to get a child by cloning rather than by taking the risk that their child will die at a young age or even before it's born.

The same can be said for homosexual couples who want a child with their own genes. Cloning would create a second and easier way to create a child of their own.

To achieve such medical possibilities more research would have to be done and this not possible because of the many ethical objections that have lead to laws banning cloning. Such objections are that we don't have a clear view on what effects cloning would have and how exactly it would be used because we simply cannot see into the future.

another issue is the fact that clones could be use only for their bodies, resulting in harvesting their properties and killing them in the process. All without their consent. Using clones for whatever purpose necessary is one of the major benefits. It violates basic human rights considering that clones are still living and breathing human beings.

Another issue with cloning would be that it's impossible to make an exact clone. The way a person looks and acts is hugely influenced by the living environment. So that also takes away the possibility of one of the purposes of cloning: creating an identical copy of someone.

Many religions oppose cloning too. The jewish view for example it that creation was done by god and that humans should not take on the role of god by creating cones. And while the Christian view is the same, Islam seems to have a completely different idea about human cloning. They believe that humans participated in the act of creation with god and therefore that they should promote human welfare, and thus cloning. There are some objections though. If cloning would interfere with the notion of family or if clones would be treated differently from humans, Islam would oppose cloning.



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Major Parties Involved

Countries

United Kingdom

The UK authorised the creation of clonal embryos for medical research in 2001 and are one of the very few countries to have legalised this. They also established agencies responsible for monitoring and licensing research facilities that work with human embryos.

China

Scientists in this country were the first to carry out gene editing on human embryos in 2015. And earlier in 2018, Chinese scientists unveiled monkeys that were cloned using the same technique that produced Dolly the Sheep (the first successfully cloned sheep and one of the first cloned animals) two decades ago. They managed to clone no less than 20 different breeds of dogs successfully. The next logical step for them would be cloning human embryos which they have started doing research for.

South Korea

South Korea is fairly developed on the field of human cloning. Many research teams have made attempts to clone animals and humans alike, and with success. They claim to have cloned multiple human embryos and many animals, but not all of these claims are true. South



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Korea has been in the news a lot for having made fake claims about certain achievements they made on the field of cloning. They are, however, doing a lot of stem cell research to improve their cloning technologies.

Timeline of Key Events

Date	Description of Event
<i>1996</i>	Dolly the first cloned sheep was born.
<i>1998</i>	Nations in Europe began passing laws to outlaw research on human clones and some immediately banned human cloning itself.
<i>19 November 1998</i>	United Nations Commission on Human Rights approved the Universal Declaration on the Human Genome and Human Rights declaring worldwide opposition to research on cloning.
<i>19 November 2007</i>	<u>UN report calls for worldwide ban on human cloning</u>
<i>2005</i>	The first dog was cloned.
<i>2013</i>	A team successfully created a human cell line by using somatic cell nuclear transfer
<i>2018</i>	Chinese scientists clone monkeys.



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Previous Attempts to Resolve the Issue

As previously stated many countries have banned cloning or forms of it and while this can be seen as a solution it prevents the medical world from expanding on this area. Which is why any legalisation of cloning or further research can be seen as an attempt to resolve this issue.

Examples like dolly the sheep, the first cloned sheep, snuppy, the first cloned dog, and CC the first cloned cat, are all part of a bigger solution. If this type of research could be done on humans we would be so much closer to creating human clones than we are now. They also show that cloning is possible and can give us many medical opportunities which can help us with the decision if we should or shouldn't clone human beings.

Bans or strict rules can on the other hand also be seen as solution because of the disadvantages that cloning brings. They make sure that no human rights are violated and that all religions are respected. Such strict guidelines or bans can help us keep cloning safe.

Possible Solutions

Overall the main concern about human cloning is about the rights of the clone or the embryo used to create the clone. In some ways it violates human rights and is not agreeable with a lot of religions. These concerns would be taken away if cloning would be done in a different way: by only creating organs or tissues instead of whole clones and using cells from a grown human being to do so. This process is called Therapeutic cloning. It's a form of somatic cell nuclear transfer which was also used on dolly the sheep. But dolly was created by reproductive cloning which doesn't take away as many disadvantages as therapeutic cloning.

For therapeutic cloning a somatic cell is taken from the body of a grown person and then the nucleus is placed in the egg cell of a female donor without nucleus. This new cell is reprogrammed to form the right tissue or organ and then gets an electrical shock to start dividing into this tissue or organ.

To use a somatic cell for this it has to be converted to an induced pluripotent stem cell (iPSC). To do so the cell is reprogrammed so it doesn't have a specific differentiation anymore so it can later be programmed to have a new one. Some iPSCs can be generated directly from the human body.

This form of cloning is currently the main focus of stem cell research since it's perfect for curing multiple diseases. Therefore it's already used in multiple countries like the USA and the UK.

This technology, like many other technologies used for cloning still has its problems because of the lack of proper, worldwide research. If we want to start using these kind of technologies



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in the medical world more research should be done and more governments should invest in doing so.

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