

Ethical Aspects and Laws of Reproduction Cloning in Humans

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Abstract— The original clone that was naturally further evolved into artificial cloning since the end of the 20th century continues to grow rapidly and became a hot issue as ' Dolly the sheep ' sticking up the surface. There are many obstacles, misperceptible and controversies especially for biomolecular researchers and biotechnology. The topic of cloning is very interesting and challenging and is believed to bring benefits to the advancement of humanity, on the other hand cloning directly related to humanity's values, ethics, and the full laws of controversies. Cloning can be utilized as a therapist, reproductively, and a replacement. This article is the result of normative legal research that is based on secondary data. Cloning reproductions produce multicell organisms that are genetically identical without fertilization to form a human clone that removes the unique nature and becomes a burden of immense expectation and environmental acceptance issues also lose Growth period experience. Cloning can be abused as a commodity of goods that can be traded for the benefit of organ transparency, labor, similarity of figures as well as other exploitative acts rather than as a whole person who is feared to be Destroying human dignity so that it is necessary to immediately create strict rules about human cloning.

Keywords: human cloning, legal aspect, Indonesia

I. INTRODUCTION

Development of technology nowadays has been offspring. However, not a little use of technology is misused specifically in cloning. Cloning was first carried out in 1996 by using somatic cell nuclear transfer in sheep, called dolly. According to Elsner [5] from 277 trials were recorded, only 27 embryos could develop in a week and only one could survive to birth with a success rate of 1-4%.

The success of sheep dolly through somatic nuclear transfer gives hope for cloning in humans. Even though it has a small percentage, it is not impossible. In 2001 Dr. Severino Antinori and Dr. Panayiotis Zavos announced their intention to start cloning in humans with

200 volunteers. However, the action received criticism from the public and special attention from world researchers [6]. The development of cloning technology needs special attention because it has a very basic and broad impact on human survival. Especially in aspects of the legal aspects that govern the use of this technology. In this paper, we will discuss further by critically reviewing the problems of the application in human cloning technology and the law in Indonesia that regulates human cloning.

developed in massive way. The role of technology can be directly seen in many lines of science. Particularly in biotechnology field, this development has a role in health, food, and environment.

II. DISCUSSION

A. A Cloning

This development was supported by technique of biochemistry and genetic engineering [1]. Both techniques are necessary to improve the life quality of human in the future.

In health field, biotechnology utilized for in vitro fertilization, stem cell therapy, and also tissue engineering [2]; [3]; [4]. The application of in vitro fertilization had been used since 1978 and helped many parent to get According to World Health Organization (2004) [7] the term “clone” originated from the Greek word for twig, denotes a group of identical entities. Cloning happens in nature; it can occur in organisms that reproduce sexually and those that reproduce asexually. In the field of biotechnology, cloning can also be interpreted into 3 types of definitions, namely 1) cloning gene is the process of copying DNA fragments, 2) reproductive cloning which is the process of transferring somatic cells into an egg cell that has been removed from DNA and then transferred into the uterus. 3) therapeutic cloning or commonly known as embryonic cloning using stem cells which are intended as regenerative medicine. The folded cells will later be formed to differentiate into other cell types. Usually the use of cloning therapy is used to cure diseases such as Alzheimer's or cancer [8]; [9];[10];.

The presence of cloning technology does not always have a negative impact. This technology can be advantageous if: 1) cloning is conducted to multiply plants and animals, 2) cloning can be used to save species that will become extinct, 3) cloning can be the way to multiply genes to replace damaged genes, 4) cloning is used to replace damaged organs. In addition to having a good impact on health, human cloning also has adverse effects, including: 1) cloned organisms will have long-term genetic problems, 2) the more cloned organisms will decrease the genetic diversity that exists in the environment. This allows extinction in the future, 3) emerging diseases such as cancer and premature aging, because the somatic cells used for cloning have mutated so that the organisms born will have genetic conditions similar to their origin [8].

Somatic cell nuclear transfer is a technique used to make cloned organisms. This technique uses somatic cells (body cells) as donors and is transferred into the oocyte which have been removed from the cell nucleus. Somatic cell nuclear transfer has 3 important stages, namely enucleation: oocyte nucleus removal, 2) transfer of somatic cells into the oocyte, 3) activation by electric shock 4) embryos formed then transferred to the recipient mother. According to [11] the use of somatic cells as DNA donors will not produce 100%

identical offspring with donors. This is because first, the presence of mitochondrial DNA and ribosomal DNA in oocytes causes a variation of DNA. 2) the possibility of a DNA mutation in the clone will appear and increase due to the use of electric shock when transferring the nucleus to the oocyte. 4) genomic imprinting caused by the process of methylation in DNA, 5) the phenotypic nature of the seed is influenced both genetically and environmentally from the living organism.

B. Cloning - religion

Mudzakkir and Widodo [12] states, in the religion of Islam, reproductive cloning that create human is forbidden. But the creation of animals and plants are allowed. Fatwa Musyawarah

Nasional VI Majelis Ulama Indonesia [13] established that cloning of humans in any way is haram and potentially cause negative impacts.

In the Hindu religion, the development in science should not sacrifice and degrade human values, moral, ethics and spiritual.

Science only considered important if it based on all the human values. Buddhism does not forbid the reproductive cloning. The religion believes everything happens for a reason and reincarnation happens to human. Human that have soul is part of this reincarnation process. Christianity, as stated in the Bible also forbid this reproductive cloning act. These prohibitions can be seen in the Genesis 1:26-27 that said God create the mankind in his own image.

C. REGULATION AROUND THE WORLD

In 1990, the German government issued the Act for Protection of Embryos therefore prohibits the reproductive cloning. The offence of this law will cause administrative fines up to imprisonment. The Australian Government has issued the regulation in the *Prohibition of Human Cloning for Reproduction Act 2002*, which prohibits several forms of cloning unless it is authorized by a license. The offence of this law will cause imprisonment up to 15 years. In the Japan Law, Article 1 Act No. 146 of 2000 [14] the Act on Regulation of Human Cloning Techniques, preventing the risk when create an individual with the same gene structure as a certain individual

Other countries that issued the regulation related to

reproductive cloning usually prohibits this act. These prohibitions can be seen in Federal Law of 18 December 1998 issued by Switzerland, Assisted Human Reproduction Act 2004 issued by Canada, Bioethics Law 2003 issued by South Korea and the Law of July 2004 issued by France.

In the report of IBC on Human Cloning and International Governance [15] states for the cloning regulations, these options will be available: total ban on all cloning research, ban on reproductive cloning, ban on reproductive cloning and allow research cloning, d) ban reproductive cloning, allow research cloning for 10 years, replace a moratorium on all cloning research.

D. Regulation in indonesia

In Indonesia, the regulation related to reproductive cloning can be found in the Law No. 36 Year 2014 [16], Health Workers. In the article 67 paragraph 1-2, the practices and researches can be conducted by the health worker on science and technology with intention to health information, technology, technology products, and health information technology to support health development. Other related regulation can be found in the Law No. 36 Year 2009 [17] about Health. Article 70 paragraph 1-2, stem cells can only be used for healing and restoring health purposes. It is prohibited for use in the reproductive purposes. The stem cells may not originate from embryonic stem cells. As addition, in article 127 paragraph 1, states the Pregnancy efforts outside the natural way can only be done by a husband and wife who are legitimate with Conditions: results of fertilization between sperm and ovum from husband and wife, performed by health workers with expertise and authority, and at a certain health care facilities. It can be concluded that the act of reproductive cloning in Indonesia are illegal.

E. Research for cloning - impact

Sandel [18] said most scientists agree that reproductive cloning is unsafe and likely to lead to serious abnormalities and birth defects. But it is possible that one day, producing a baby through cloning were no more risky than natural reproduction. Frankle

[19] While there is a moratorium prohibiting the use of federal funds for human cloning research, current federal legislation banning human cloning research is pending

F. Result of cloning – impact

i. Impact on Society (Ethic, Economy and Law System)

Ali [20] states the invention in the technology causes negative and positive changes in society. This opinion is strengthened by many law experts, such as Manan [21] believes the reproductive cloning will change people's lives in various ways, especially in the law system. In society, the reproductive cloning of human will affect the ethic and law system as it changes the definition and value of human and humanity. Suseno [22] sees ethics as a critical reflection of both normative and ideological claims. Sidharta [23] quoted Bertens' opinion, ethics can be seen as a value system and as part of philosophy that deals with human morality (moral philosophy). Philosophy discusses the attitudes and behavior, attitudes as predisposing behavior or willingness to react to an object or thing with cognitive abilities. Moral is the result of evaluating a person's good and bad as a human being and functioning as a normative standard of evaluation and normative rules of conduct.

Wasitaatmadja [24] believes the changes should lead towards the improvement of humans life not destruction nor extinction.

The good or bad deeds are everyone's choices, but they cannot be separated from the consequences that arises for their choices. Hariadi [25] states the reproductive cloning as unethical. This process eliminates the role of men in the reproduction process. Muchtar [26] believes the scientists that develop their knowledge have ethical responsibilities to humanity as individuals and citizens

According UNESCO states some ethical issues that arises in the reproductive cloning are technical and

medical safety, undermining the concept of family and reproduction, confusion in personal identity, harming the psychological development, eugenics concerns, human dignity contrary and promoting the trends towards designer babies and human enhancement. These were just

several ethical issues that might arise as the effect of human reproductive cloning.

The ethic and law are inseparable aspects in society. These aspects are important in shaping the society. Nasution [27] sees the meeting point between ethics and law exist in the substance that governs human behavior. Ali [28] states the law function as a social control which the written law is run as a habit from the society. Human behavior will always be connected by the law and ethics that determines the necessities, orders, prohibitions and punishment. Many believe the study of legal aspects is not only in the form of written law but also as unwritten law, the law that exist in society.

In the economy impact, Ali believes the reproductive cloning activity will be an opportunity for big corporations. This opportunity might be contradictory to society, as the corporations usually seek for profit and might ignore the impact on environment, culture and value of the society.

In the unwritten law, society follows the rule in their tradition, culture and values in their place. The creature that is born with the reproductive cloning method will arise several legal issues especially when this creature is seen as human.

Indonesian medical ethics code [29] refused the cloning in humans. Cloning in humans is theoretically possible but the cloned humans do not have father neither mother. This will result in the reduced degree of humans to be equivalent to bacteria.

In Indonesian Criminal Law, the reproductive cloning process can cause various violations. The failure of cloning results can be likened to persecution up to abortion. Article 351 states the persecution can be threatened with the maximum prison sentences of 2 years. The abortion's prohibition can be found in Indonesian Law of Health Article 194 that stated every person who intentionally commits an abortion is punishable by imprisonment for a maximum of 10 years and a maximum fine of 1 billion rupiah.

G. Reproductive cloning's product as a human

Law No.39 Year 1999 of Human Rights [30], defines

human as a creature of God Almighty that carry out the task of managing and maintaining the universe with full devotion and responsibility for the welfare of mankind, by their creators endowed with human rights to

guarantee the existence of dignity and dignity of their own and the harmony of their environment. The creature produced by reproductive cloning cannot be seen as the God's creature as the creatures are created by human with the advance technology.

Anwar [31] states in Indonesia, the concept of human rights is inseparable from theological values that recognize that rights are not something given by world but by God.

The acknowledgment of this creature as a human will arise more legal issues. Basic human rights will include the right for marriage, democracy, protection, sue, and many more. The marriage between cloning human and human or cloning human will affect and even disrupt the evolution. With democracy rights, the cloning human will have the right to vote. These opportunities can be used by the party to gain power and cause chaos. By acknowledging the creatures as human, it will cause unlimited problems.

III. CONCLUSION

Cloning humans is theoretically possible by reproductive cloning, but this action can be seen as decreases towards human dignity. As the cloned result do not have parents and the process is the same as bacteria's reproduction. In most countries, the reproductive cloning is prohibited by the law. The countries that prohibit this action include Japan, German, Australia, Korea, Switzerland and many more. The offence of this action will cause administrative fine or imprisonment. In Indonesia, the act of reproductive cloning is also prohibited. The regulations can be found in Law No. 36 Year 2009 about Health [17] and Law No. 36 Year 2014, Health Workers [16], Health Workers. It is impossible to acknowledge the reproductive cloning as a human as it is a contradictory towards the Law No.39 Year 1999 of Human Rights [29].

The reproductive cloning process will cause various violations in criminal law. This failure of this process

can be seen as persecution in Article 351 of Criminal Law up to abortion in Article 194 of Health Law. The offense of abortion will be punishable by imprisonment for a maximum of 10 years and a maximum fine of 1 billion rupiah.

Based on the report of IBC on Human Cloning and International Governance, to regulate the reproductive cloning it will be necessary to ban all cloning research, ban reproductive cloning, ban reproductive cloning while allow the research cloning, ban reproductive cloning while allow the research cloning for 10 years and place a moratorium on all cloning research.

The government and law enforcers must equate their perceptions, to unite steps, address various

possibilities of the arising from the widespread practice.

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