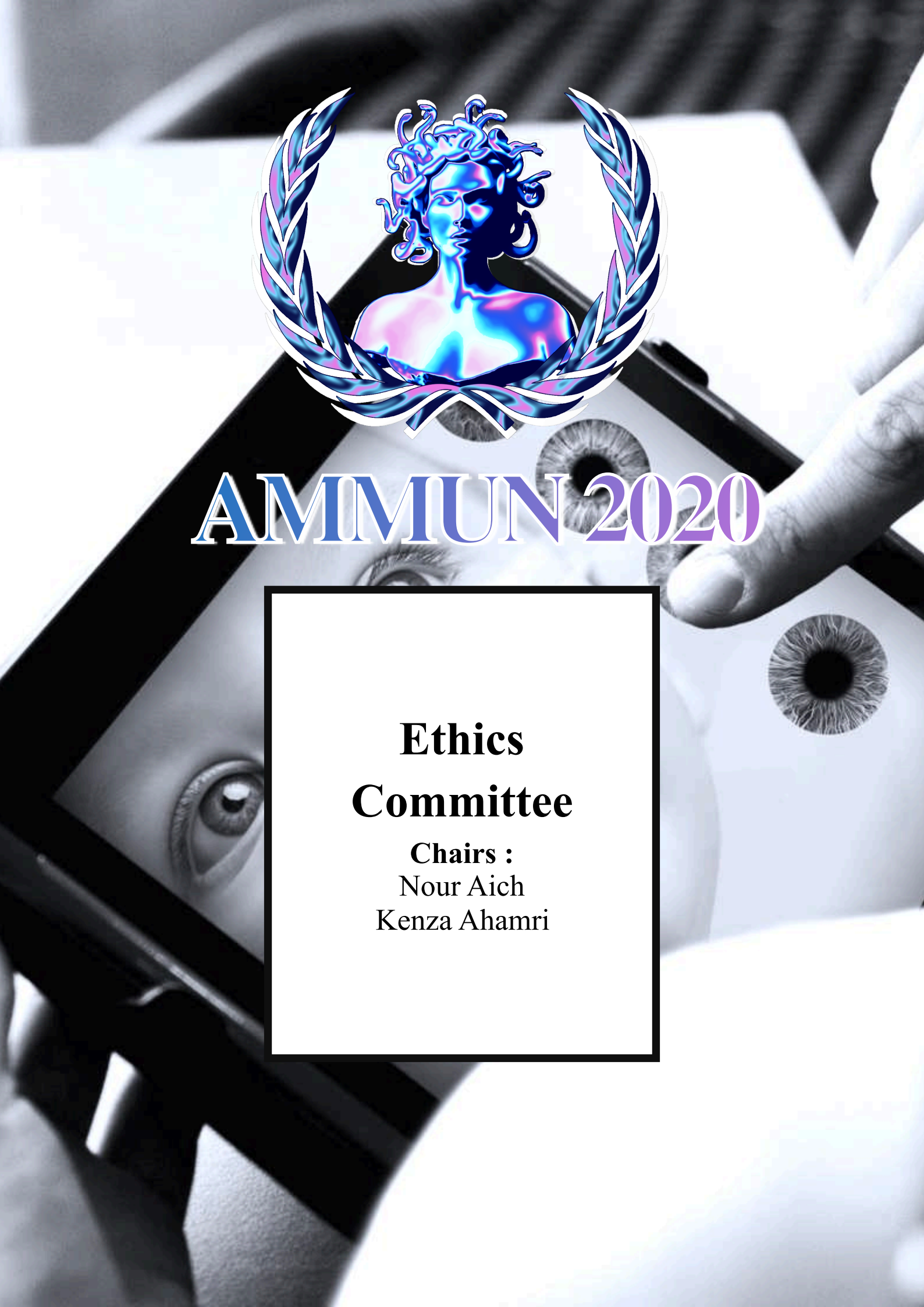


AMMUN 2020

Ethics Committee

Chairs :

Nour Aich

Kenza Ahamri

Which regulatory policies should be adopted concerning the use and the development of AI and robotics technologies?

Background: Computers are 30 thousand times faster and smarter than they were in 2019, with non-human super-intelligence being at its peak. Robots are able to perform all physical tasks that we perform, such as transportation, manufacturing and customer service. Many jobs are replaced by robots, meaning that goods and services will be produced much cheaper. Most people are left out of work and without the ability to support themselves. Mass unemployment is thus a prevailing issue of our world. For example, one third of Americans are unemployed, just as in China.

Countries: Australia, Saudi Arabia, Mexico, Belgium, Austria, Egypt, morocco, France, Canada, Russia, south Africa, china, USA, India, UK, Brazil, Greece, Italy, The republic of South Korea, Algeria

In 2050: Most of the countries will have known a great evolution in terms of artificial intelligence and the development of robotics technologies which will benefit many of them. However, the countries will be concerned as AI and robotics are taking a huge place in the society and causing new issues. The unemployment issue is the main concern as well as the lack of privacy and the total dependency on the robots. *Some countries are more aware than others and are starting to find some solutions, while others just focus on economic growth and innovations.*

Countries' Positions:

United States of America: On February 11, 2019, US President Donald Trump issue an Executive order launching the "American AI initiative". It was explained that the Federal Government plays an important role not only in facilitating AI research and development, but also in promoting trust, training people for a changing workforce, and protecting national interests, security, and values. And even if this Executive Order emphasizes American leadership in AI, it is also important to note that it stresses that this requires enhancing collaboration with foreign partners and allies.
2050: one of the leading countries in AI and robotics technologies development

China: On July 20, 2017, China released the NGAID (next generation artificial intelligence development plan). It sets forth long-term strategic goals for AI

development in China, concluding in 2030. It contains "guarantee measures," such as developing a regulatory system and strengthening intellectual property protection, in promoting AI development.
China is investing a lot on AI and deploying it on a scale that no other country is doing, as the PRC has announced this year that billions of dollars were used to fund start-ups and companies, as well as to launch programmes and become an attractive country to woo the best researchers from all over the world.
2050: China will be a country where AI will be taking a big place and is becoming a threat to the society.

India: AI has become an important part of India's economy. The Indian AI industry "has seen growth in this period [2012–2017], with a total of $150 million invested in more than 400 companies over the past five years. The last two years, investment nearly doubled from $44 million to $77 million.
Thus, the Indian administration has decided and announced in February 2018 that the government's National Institution for Transforming India (NITI) will start a national program on AI focusing on research and innovation.
India currently has no laws or government-issued guidelines regulating AI.

United Kingdom: Britain's researches are focused on data analytics and artificial intelligence, and are bolstered by a world-leading computer science research ecosystem, which have been a strength for UK's AI development. The government is committed to ensuring that this fertile climate continues to go from strength-to-strength: AI has been included as one of four "Grand Challenges" and backed by significant funding.

Brazil: The Brazilian government has announced it will create a network of eight research facilities focused on artificial intelligence. Developing AI and robotics has become a priority for the government in order to improve their capability's in this specific sector. According to the minister, one of the labs will focused on edge AI technology in areas such as cybersecurity and will involve the Brazilian Army. The other seven centers will work on applied AI.

Australia: The Australian government signed multiple deals for the Australian companies to provide billions of dollars to build a five-year technology service to accelerate the uptake of blockchain, artificial intelligence (AI) and quantum computing in the public sector. The government aims to quickly develop their technology and artificial intelligence to be one of the top three digital governments in the world by 2025.

South Korea: Korea has an advanced robotics industry. In 2008, the National Assembly enacted the Intelligent Robot Development and Promotion Act to establish and promote a policy on the sustainable development of the intelligent robot industry. The Act states that the government "may enact and promulgate the charter on intelligent robot ethics". The South Korean government put more than 800 billion won (US$687 million) toward expanding the country's robotics industry, with autonomous vehicles and social robots for healthcare as their main sectors. In February 2018, the government released a new development strategy for the intelligent robot industry along with four action plans which call for accelerating market expansion with collaborative robots and service robots while enhancing the industry's supply and demand capabilities. The government provides a training program for postgraduate-level AI and robot convergence experts in cooperation with colleges.
In January 2018, the South Korean government issued a report prepared jointly by six governmental entities outlining policies and regulations to promote technological development.

Austria: The Austrian government in its 2017–2022 government program stated that "new digital technologies like AI, robotics, and blockchain will have unforeseeable effects on our society." It envisages the use of AI in public administration and therefore wants to establish a legal framework in order to "use innovative, new business models and technologies for the development of society while simultaneously safeguarding the data autonomy/sovereignty of citizens and consumers."

France: France has some of the world's best mathematics and engineering universities, and some of the world's leading data scientists and AI researchers come from the country. France is known for having one of the strongest AI ecosystems in Europe, alongside Germany and the United Kingdom
French President has made it one of his government's priorities to build on these assets and make France a world leader in AI. In this spirit, he has promised to allocate €1.5 billion (approximately US$1.7 billion) in public funding to AI by 2022 "in a bid to reverse a brain drain and catch up with the dominant US and Chinese tech giants."
In parallel, the French government has deployed some efforts towards anticipating the regulatory challenges related to AI.
France is a participating member of the International Organization for Standardization's technical committee on AI.

Italy: Italy reportedly has only twenty-two start-ups researching AI. At the EU level, AI projects are being developed in many industries. In this context, AI

experts in Italy have highlighted the need for the country to deepen its commitment to pan-European AI initiatives by creating or diversifying government, social, and investment programs that would allow access to the larger EU market for Italy-based AI projects. Also, experts note that Italy should put into place stronger conditions to attract foreign AI researchers and entrepreneurs. In July 2018, a group of higher education institutions created the Artificial Intelligence and Intelligent Systems Lab, with the aim of strengthening the country's research in AI.

Russia: According to President Putin the country that masters AI first will become the "ruler of the world". Russia's efforts in the development of AI infrastructure focus on upgrading the country's capabilities in the area of defense. In 2018 and 2019, the Russian government started establishing many organizations and programmes to create laboratories, universities and development plans for AI and robotics technologies researches.

Belgium: Overall, the Belgian government has not been very active on issues related to AI so far. However, it will change in the future as both chambers of the Belgian Parliament currently have working groups studying AI questions. They proposed many solutions to improve the country's implication in the industry. Similarly, the Senate created a working group to write a report on "the fallout, opportunities, potentialities and risks of a digital 'intelligent society', to think about the laws that are needed and the regulations that should be put in place during the new development of AI in Belgium.

Greece: The image of an AI-led future both excites and concerns Greece, as there is an uncertainty and robotics are unfamiliar to us, which makes the majority of the respondents feel confused, unsure or concerned, about what an AI-led future might entail. However, this uncertainty is forgotten by a part of the society due to the positive impact that AI can have. From personal assistants to medical preliminary diagnosis, Greeks see many ways in which AI can improve lives and work for the common good. At the same time, due to the rapid rise of AI, many questions and concerns remain open.

South Africa: South Africa is fully aware of AI and robotics technology's importance. The government must build competencies to participate in an AI-driven future. Yet numerous structural deficiencies remain, hampering South Africa's ability to fully integrate new technologies into the economy. It was declared that rather than replacing humans, AI should make people more productive. And organizations implementing AI solutions should bear the burden of reskilling its workforce. Inclusive economic growth must be a driver. The government is encouraging the adoption and implementation of AI, and is carefully thinking about the regulations to adopt.

Mexico: Mexico is known to be one of the world's most technically advanced and countries, and especially since they launched a national artificial intelligence strategy which made it one of the first ten countries in the world to do so, and the first in Latin America. Mexico has efficiently used their AI strategy to improve the country's economy and society thanks to technological advances.

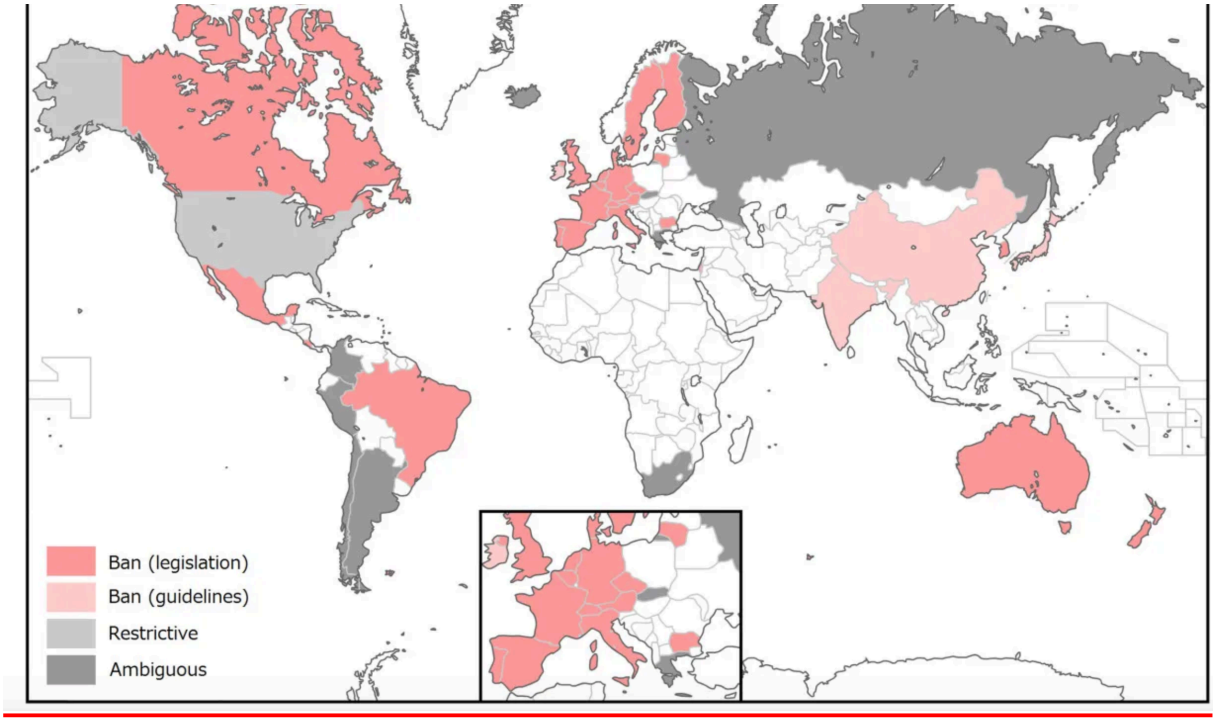
Canada: In 2016-2017, it was announced that over $1.3 billion was given by the government for funding the AI Research & Development. Canada is one of the leading countries in AI and robotics technologies as Montréal has the highest concentration of researchers and students of deep learning in the world, and Toronto has the highest concentration of AI start-ups in the world. Canada is mostly known in AI for its well-developed ecosystems driven by academic research centers located all over the country.The ethical issues were raised multiple times during the past few years and are becoming more and more of a concern and are being taken into account slowly.

Saudi Arabia: Saudi Arabia announced in 2019 its plans to join in on the artificial intelligence (AI) revolution. The king issued a royal decree to establish a National Authority for Data and Artificial Intelligence. It will enable the opening of many centers for AI researches and development. These new initiatives will enhance the country's drive toward technological innovations and the country's growth.

Morocco, Algeria and Egypt: These three countries are realizing the importance of AI and robotics technologies as it will be the biggest factor in the country's economy in the future. That's the reason why they are starting to develop AI faculties and research centers. It is obvious that they will need more time to reach the other countries' level and won't see the issues as soon as them. So in 2050, they won't be as concerned as the more developed countries, instead they will focus more on their advances and growth.

Which measures concerning the democratization of designer babies should be taken in order to avoid its negative effects on society?

Background: The eugenics and embryo's gene modifications were first brought out in the United States in the early 1900's, and since then, great progress has been made and almost every country has realized its importance. Many countries banned the actual modification of the genome for babies and are against the idea of "designer babies", whereas other began thinking of it as a possibility for a better future. In 2050, multiple countries made impressive advances and changed their laws which now permit the gene modifications. Still, the rest of the countries have not changed their minds and fear the consequences of letting "designer babies" be created.



Countries and their positions:

Banned: Australia, Saudi Arabia, Mexico, Switzerland, Austria, Egypt, Morocco, South Korea, Italy, Algeria
Banned but open-minded: France, Canada, Brazil
Allowed: Russia, South Africa, China, USA, India, UK, Germany, Greece

Australia: Currently, Australia bans the use of eugenics on the population. The country prohibits a person from altering the genome of a human embryo in such a way that the alteration is heritable by descendants *and* the person intended this to be so. *Australia clearly prohibits the use of genome editing in reproduction, and it will still be the case in 2050.*

Canada: In Canada, human germline editing is banned. It is criminalized and punishable, however, the government's statements lack a clear regulatory body to oversee its implementation. *In 2050, eugenics will be banned but the country is open to discussing the possibility of lifting the ban.*

France: The French Criminal Code defines eugenic and reproductive cloning as crimes against humanity, setting out that the implementation of an eugenic practice for the organization of the selection of persons is punishable by thirty years imprisonment. It is prohibiting all manipulation of the genome resulting in changes to the genome of offspring. As well as the development of research on genome editing, including work on germline cells and human embryos, so long as the edited embryos are not transferred to the uterus under the current state of knowledge and legislation. *In 2050, gene modifications on an embryo will be illegal and prohibited, but researches on the subject have been done and France is open to discussion.*

Saudi Arabia, Egypt, Morocco and Algeria:

In 2050, it will still be completely banned due to moral and ethical aspects (religious policies: the legislation being based on Islam, selecting genes will never be approved of).

Mexico: The country's general law on health prohibits the fertilization of human eggs for any purposes other than procreation. This means prohibiting the use of embryos for research, including genome editing. *In 2050, it is still illegal and Mexico is strongly against the idea of manipulating genes.*

Austria: In Austria, genetic modifications for babies are completely banned with no exceptions, and nothing will change in 2050.

United Kingdom: The UK's approach to germ line gene editing has been more open than rest of the world. It is lawful in the UK to create and use genome edited human embryos, sperm or eggs in research, under strict licensing

conditions However, it is still illegal to use gene edited human embryos in assisted reproduction. *In 2050 gene modification will be legal.*

China: According to the "Guidelines on human assisted reproductive technologies", China prohibits the "manipulation of the genes in human gametes, zygotes or embryos for the purpose of reproduction". But it is not part of the national Chinese legislation so studies and experiments can be done to a certain extent. It is known that it's one of the most advanced countries regarding gene modification, and the first country to actually modify the genome of twins to make them HIV resistant.
In 2050, eugenics and gene modification will be legal but certain safety measures were taken.

United States of America: USA is currently trying to lift the ban on genetically modified embryos, to advance in their scientific discoveries and make progress, but it's still prohibited. *In 2050, USA will be one of the most advanced countries in this subject and genetically modifying babies will be legal.*

India: India does not have any specific law that explicitly prohibits genetic editing of germ lines. However, the Indian government published a National Ethical which prohibited "eugenic genetic engineering for changing genetics and creating designer babies. The Indian scientists are allowed to research upon the possibility of modifying an embryo's genome, but no manipulation should actually be done on a baby. To the extent that genome modification is permitted, such modification can only be done through in vitro studies (outside the human body) and requires thorough review by the government. *In 2050, thanks to the results of the multiple researches, gene modification will be completely legal.*

Russia: Russia has a law that prohibits genetic engineering in most circumstances, but it is unclear whether or how the rules would be enforced in relation to gene editing in an embryo. And Russia's regulations on assisted reproduction do not explicitly refer to gene editing. *In 2050, it will be legal, and actively researched.*

South Africa: In South Africa, researchers are allowed to experiment on human embryos up to two weeks old. After 14 days, the embryos have to be destroyed.

The country is conducting a consensus study, looking at the ethical, legal and social implications in human genetics and genomics. *By 2050 eugenics will be fully approved of and legal.*

South Korea: In the Republic of Korea, laws prohibit genetic experimentation as well as modification of human embryos, including any product that alters genes. However teams of scientists from the USA and South Korea have often and actively worked on embryos development (even if they stopped the experiment after a few days).Even if south Korea is researching, the ethical aspect is too important *so in 2050, eugenics will not be approved and designer babies are illegal.*

Brazil: Brazil addresses gene editing in its Biosafety Law, in which it's said that eugenics and embryo modifications are banned, although it shows that the country is implicitly permitting at least some somatic gene-editing research in humans. As Brazil is actively researching and interested in this issue but makes the embryo modification totally illegal*, in 2050, it will still be banned in the laws but the country will be weighing the pros and cons and open to discussing the matter.*

Belgium: As Belgium is actively researching on genes and its development, *in 2050 eugenics in the country will be completely legal and totally approved of as it will be considered an important factor for the population's health.*

Greece: Greece allows many medical procedures and experiments on gene modifications that are illegal and banned in multiple countries. Scientists are researching and the government supports the idea. *In 2050 it will be completely legal and embryo modification will be done in Greece.*

Italy: Italy bans clinical researches using germline modification technologies which means that experimenting on human embryos is illegal. *In 2050, it will still be illegal and banned.*