

Designer life: Should parents opt for human genetic enhancement in their unborn children?**Tereza Nečasová¹****Abstract**

This article analyzes how parents decide whether to allow gene manipulation in their unborn children. First, it clarifies that editing embryos is presented as not only more convenient but also safer than editing adults. Next, it directly refutes two main arguments against letting parents make these decisions: (1) that parental enhancement could decrease love or establish harmful expectations, and (2) that issues arise when parents seek to share their own defects through enhancement. After addressing these arguments, the article explains why only parents should decide whether to pursue genetic improvements for their children. Finally, it introduces a broader decision-making framework: parents have the ultimate authority; experts play a strictly advisory, informational role; and a neutral state ensures the child's protection.

Keywords: CRISPR/Cas9, decision-making process, designer babies, eugenics, gene modification, genetic enhancement, human enhancement, human genome, parent-child relationship

Introduction

Various methods are currently employed to facilitate self-improvement or enhance children's development. These include cultivating specific habits, such as adhering to a balanced diet and engaging in regular physical exercise, as well as utilizing dental appliances like braces, corrective eyeglasses, and other assistive devices intended to improve physical and mental capacities. Emerging genome-editing technologies may facilitate pre-birth modification of individual characteristics. This development raises pivotal questions: Who ought to decide for the unborn, and is it preferable to pursue modification at the embryonic stage rather than in adulthood?

Embryos or adults

Somatic gene modifications, which apply only to those already born, can be carried out in several ways (Canver, 2009, pp. 1–3). The advantage is that these modifications pose no risk to the genome or future generations because they are not heritable. However, negative consequences for individuals can still occur. Mainly, errors in the transmission of modified genetic information can render therapies ineffective or cause serious health problems.

Embryonic genetic modification in unborn individuals can be done in several ways. One is the modification of stem cells, from which germ cells (gametes) are grown. Another is the modification of germ cells, which results in a zygote. A third way injects editing systems directly into the zygote, which then becomes an embryo (Vassena et al., 2016, p. 411). The embryo spans from the first zygote division to fetus formation. The embryonic genome activates at the embryo's eight-cell stage (Slípka, Nevoral & Tonar, 2022, pp. 31–33). This happens on the third day after fertilization. If an editing system enters the zygote, cell divisions spread the change to all cells, both somatic and germ. The change then becomes heritable. Risks include negative effects like mosaicism, other genomic disorders, or unexpected problems in later generations.

Adult modifications share many features with embryo modifications but differ in keyways. Biologically, the main difference is the method – gene therapy versus CRISPR/Cas9. Health consequences can arise from both. Some are more serious, but the risks are comparable. The

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fundamental biological difference is that germline modifications are hereditary. Even with our extensive knowledge of the genome, we cannot predict all effects (Lanphier, 2015, p. 411). Biologically, this process resembles evolution, but much faster. Procedures are complex and may not be drastic, so it seems unlikely modifications will be fatal. The current genome may respond similarly to spontaneous mutations. For gene enhancement, germline modifications are more advantageous. The organism undergoes normal cell division, so the modification is in all cells as if it were a natural mutation. The child is born with modified traits from the start. Also, mutations can be checked before the embryo develops in the womb (Vassena, 2016, p. 413). Editing the adult genome risks failure or serious problems that cannot be filtered out as they can in embryos.

However, the more salient distinction between adult and embryonic genetic modification concerns moral considerations. Genetic modification of adults typically receives more favorable ethical appraisal, whereas interventions at the embryonic stage are subject to significant criticism. This divide is attributable not only to ongoing debates regarding the moral status of embryos but also to additional ethical issues, including conceptions of human dignity, the child's right to an open future, and matters of autonomy. As unborn individuals, embryos cannot exercise agency in the decision to undergo genetic modification. The decision will, in practice, rest with the prospective parents.

Parental love and big expectations

Arguments against letting parents select traits for future children typically fall into two categories, both tied to parental love. The first asserts that parental genetic selection will negatively change parent-child relationships, leading to less unconditional love. Many believe a child should be loved as a gift, not a product. Critics fear that parents may reject children who do not meet modified standards (Sandel, 2007, pp. 48–49) or may come to see the child in terms of success or failure in meeting expectations. Nevertheless, parental love can act as a corrective, maintaining strong bonds in most cases.

The second argument claims that family dynamics could suffer if parents pursue genetic enhancement, potentially shifting their love into a conditional, consumer-like expectation (Green, 2007, pp. 109–110). This argument asserts that if chosen traits are not realized, disappointment will follow. However, considering modern understanding of parental love, these concerns appear less fundamental than asserted.

Critics contend that parental pursuit of genetic perfection through modification could undermine unconditional parental love. Nevertheless, it is not evident that parents intent on engineering an ideal child will inevitably love their offspring less than those who refrain from such interventions. Indeed, ambitious parents often exert significant pressure unrelated to genetic enhancement, such as striving for academic or athletic excellence, which has been associated with adverse mental and physical health outcomes (Murayama et al., 2016, pp. 767–768). These behaviors are comparably coercive to genetic enhancement. Notably, not all parents who impose high expectations lack affection, nor does the availability of genetic enhancement guarantee its misuse. It is conceivable that, with genetic enhancement, some parents might reduce extrinsic pressure, since desirable traits would be innate. Furthermore, extreme cases do not suffice to demonstrate an absence of parental love, which remains a significant emotional bond observable in everyday instances.

For example, some fathers may initially prefer a male firstborn, anticipating greater relational closeness. While rare cases exist in which fathers experience disappointment upon the birth of a daughter, usually, the child's sex proves immaterial to paternal attachment. Another salient illustration involves parents of children with disabilities, many of whom report that their child constitutes the most significant aspect of their lives, providing unique experiences of fulfillment and joy otherwise unattainable. Generalization in this context is

unwarranted; rather, excessive parental strictness is more plausibly attributed to unresolved personal ambitions projected onto their children and to disproportionately high expectations.

Given the above, should this parental expectation issue be taken seriously? Habermas argues yes, stating that parental intent behind genetic selection later becomes binding expectations for the child, who has no chance to revisit or challenge them (Habermas, 2003, p. 51). Still, as noted, strict or ambitious parents have always existed, even without gene editing. Parents' preferences and expectations are influenced by complex social, economic, and familial factors. Thus, it remains difficult to predict which parents will develop excessive expectations. Genetic enhancement could increase the risk of unrealistic goals being projected onto the child, as modifications could be used to reach ambitions previously out of reach.

However, it is possible to look at the whole situation from the other side. Gene manipulations can be corrective or, conversely, strengthen the relationship between parents and children. It is necessary for future parents to fully understand the role of genes in general, i.e., their limited function and the non-negligible influence of external factors, which can hardly be influenced, and to translate these facts into the child's characteristics, which can be modified, but only within certain limits. If the basic mechanisms of genetics are not understood, their exaggerated expectations can lead to unjustified pressure on the child. The remedial nature of genetic manipulations can be somewhere in the middle, in a consensus between parent and child, where both parties agree on specific improvements that can bring the child to the desired level. Of course, the child himself would have to agree to specific improvements, meaning that the parents' expectations and the child's desires would converge. In the case of genetic modification of embryos, any consensus is of course completely impossible; however, another "corrective" modification, already during the child's life, which will be agreed upon with the parents based on evaluated factors, is not excluded. In such a case, not only the mistakes caused by the modification of the embryo itself, but also the child's relationship with the parents, who have unrealistic expectations, could be corrected.

Certainly, it is practically impossible to achieve in this area, so it is necessary to constantly check current developments and ask yourself appropriate questions that can at least outline the future of the relationship between parents and children. Therefore, although enhancement can also have a corrective character, there are cases where its use is reversed. Fear also stems from the possibility of using genetic enhancements as a corrective measure in cases that run counter to our intuitions. What if parents demand that their children be born with the same disabilities they themselves suffer from? Such demands, although based on pure eugenics, can hardly be called eugenic. The goal of eugenics was, and continues to be, to achieve the best possible genetic base of man (Güvercin, 2008, p. 4). The wish for the child to suffer from the same handicap as its parents thus presupposes the use of "eugenic" methods for completely non-eugenic goals and is also contrary to our intuitions. It is a contrary enhancement.

Contrary enhancements

The second group is arguments where parental love, on the contrary, is so strong that parents require something to happen, which I would call the use of contrary enhancement. These are cases where parents consciously require their child to be born with the same disability that they themselves have. Already in 2002, the case of a lesbian couple from California, where both women suffered from congenital deafness and demanded that their children be born with the same defect, reached the media. To be 100% sure that this would happen, they asked for a sperm donation from a man whose congenital hearing loss had been present in the family for five generations (Cordero, 2020, p. 1). From these experiments, two children were born, both deaf, exactly as the mothers wished. Although the case of the lesbian couple from California is controversial, and many do not agree with their intentions, I do not see any significant ethical problem with the actions of the mothers. Both women have the right to reproduce with a partner

of their own choosing. In this case, they chose a man with a multi-generational history of deafness with the expectation that their child would be born with congenital deafness. Likewise, a deaf person can choose a hearing partner to reduce the likelihood of dysfunction in their offspring. However, the cases that generate strong controversy involve couples who want to use PGD in combination with IVF or directly use gene enhancement methods to choose an affected child. This is not only a case of congenital deafness, but people suffering from dwarfism or other bodily dysfunctions (Bělohrad, 2023, p. 15), or people suffering from reduced intellect, can also have the same desires. It is here that we encounter serious moral issues, which the disabled themselves do not consider as issues, and therefore demand the same reproductive rights and the right to select characteristics for their future child within the framework of gene enhancement as other parents would have done.

Do parents have a good reason to believe that their child will do better if they are deaf? Robert Sparrow (2002, p. 14) thinks so for two reasons. The first is a cultural identity that includes not only a strong sense of belonging among members of the deaf community, but also the use of unique sign language, among other things. The fact that most deaf people do not learn to speak or even read or write does not significantly limit them, according to proponents, because their language is very rich; in some ways, it can be considered much richer than the oral form (Cooper, 2007, p. 572). This statement is not very convincing – oral language users have a definite advantage, they can communicate with both cultures without restrictions, because they can learn sign language. Deaf people, on the other hand, although their language is very rich, and I do not deny that in many ways it can really surpass the oral one, they do not have this possibility and are at a disadvantage in communicating with hearing people. The second reason is better future opportunities for the child if he is deaf, as his parents are. Deaf parents do not claim that their culture is more valuable than others', but they believe they can better care for a deaf child because he will be like them and part of their community (Sparrow, 2002, p. 15). I believe that a hearing child has more opportunities and that their parents can adequately care for them, as studies also confirm. Hearing parents have problems communicating with a deaf child because they do not know how to communicate with them. Deaf parents, on the other hand, immediately choose a form of sign language, so communication is completely natural (Horáková, 2011, p. 34). In addition, such a child will naturally become a part of both communities – he will communicate with deaf parents using sign language, with the hearing community using oral language. The child will clearly be at an advantage compared to deaf children. Not only will he be able to establish relationships with people outside the community, but he will also have much wider opportunities in his studies or future employment. The range of opportunities for them increases rapidly with the ability to hear, and there is no reason to believe that parents cannot take care of a healthy child as well as a deaf child. It is not uncommon for a child without a disability to be born into a family with congenital deafness; such children then benefit from the benefits of both communities. The function of the family is not disrupted; there is no emotional deprivation, as in the case of hearing parents with a deaf child. On the contrary, communication is problem-free, and the parents themselves can draw certain benefits from the child's contact with other communities.

I also do not consider the argument that, thanks to the deaf community, children will experience what they could not otherwise, to be strong. I do not deny that this is indeed the case; it will be very difficult for a hearing child to absorb the stimuli of the deaf community if he does not know their communication style. Analogously, we can say that even a deaf child can never experience what we experience, at least not in the same way. We can speculate which community can perceive and experience multiple sensations. However, a deaf child will never hear music, the tone of a voice, the rustling of the wind, the singing of birds, the roar of running water, and other sound stimuli that we value for various reasons.

At the same time, advocates refuse to label deafness as a disability, thus consciously denying

the biological side of the problem. Deafness can also have advantages – deaf people can become more sensitive to vibrations, and they can also have improved vision or other senses that compensate for the function of one missing (Cooper, 2007, p. 571). Although deafness is not an extremely limiting disability, it is not a normal condition and certainly not a trivial problem. The development of a child with a congenital hearing defect is slower; especially, thinking development is more difficult, vocabulary is very limited, speech is significantly impaired, and reading is difficult for deaf children (Skákalová, 2011, pp. 42–46). Children feel deprived due to a lack of perception; they often feel inadequate because they are unable to meet teachers' expectations (Horáková, 2011, pp. 32–34). It is generally much more difficult for deaf people to navigate in space, and they are therefore more prone to accidents. They are limited in crisis situations; they cannot hear, e.g., approaching vehicles, explosions, gunfire, sirens. Deaf people can clearly live a high-quality life, but even though deafness is not among the most serious disabilities and even though the deaf community does not identify itself as disabled, deafness is significantly limiting and can even be fatal for individuals.

None of the arguments mentioned sufficiently convinced me that the targeted selection of affected embryos is defensible, because there are benefits to the child from the disability. Beliefs and intentions of parents can be shaped by many factors; it is understandable that, if parents are part of a community, in this case a minority, their beliefs will align with that community. It is also understandable to worry that they will not be able to adequately care for the child if he does not suffer from the same dysfunction as they do. However, these fears are very easily removed, as evidenced by the experiences of deaf parents with hearing children. Using enhancement, on the other hand, is a very difficult position to defend, because it goes against our basic intuitions and, in this context, it stands directly against improving a person from his definition. Human enhancement is supposed to improve human abilities, increase performance, and move man forward faster than evolution itself. It is understandable that deaf parents want their child to be part of their small community, to know their language, and to appreciate what the hearing community lacks. Because of this, however, it is not necessary to select dysfunctional embryos. Even a completely healthy child can communicate with parents through sign language and with others outside the community through oral language. He will thus be a part of both communities and will be able to take advantage of all the opportunities that come his way without being restricted in any way.

Although these tendencies appear across the issue of human gene enhancement, and there are many of them, I do not consider them a reason why genetic enhancement should not be allowed for parents. Savulescu (Savulescu & Kahane, 2009, pp. 274–290) also disagrees with the ban on editing embryos for disability. In his opinion, this is the same restriction of reproductive freedom that took place under eugenics programs in the last century. If we were to allow gene enhancement, it should probably be allowed for all parents, even those who themselves need to select an affected child. If the parents' right to free reproduction were taken away, it would be possible to label such an action as old eugenics. At the same time, there will continue to be cases like the one in California in 2002, where one parent seeks a suitable partner to increase the likelihood of having an affected individual, with an uncertain outcome. Although cases of enhancement, on the other hand, are incomprehensible to many of us, parents should have the right to choose, whatever it may be. Evolution can handle it. However, the choice as such should not be left to the parents alone. In the following subsection, I will therefore outline what parental choice could look like, and which other components should be involved in it, so that reproductive rights are not restricted, but to at least partially prevent cases of gene enhancement, on the contrary.

Decision-making process

Due to the continuous improvement of the CRISPR/Cas9 system and the elimination of security risks, the process that will probably lead to the use of gene modification methods not only for therapeutic purposes can no longer be stopped. Although parents appear to be the most suitable candidates to make decisions about the manipulation of the genome of unborn children, the question arises whether they should really have unlimited power. The concerns mentioned above may seem exaggerated, but they cannot be ignored because they create a significant space for confronting the advocates of gene enhancement without any restrictions. The origin of the liberal attitude of advocates can be traced to the freedom of citizens, which is rooted in Locke's concept of freedom in civil society, where the state can intervene only to the extent that citizens themselves determine (Locke, 2003, pp. 109–110). The decision whether to improve the embryo and which specific characteristics to adjust should not be subject to state power but should be made exclusively by the parents. Proponents of the new eugenics want the state to remain neutral on these issues. Therefore, to imagine a situation where this would not be the case, we do not need to resort to disturbing novels of the future; we just need to go back to the beginning – to the old eugenics.

The eugenics programs of the USA and Nazi Germany are typical examples of state regulation that were characterized by coercive methods and the complete suppression of free choice. It is highly unlikely that a similar scenario will occur in the future. Above all, this contradicts the current form of scientific research, which is based exclusively on verified facts rather than assumptions or estimates. This is also related to current information about the function of genes in the organism, which excludes genetic determinism and, on the contrary, admits a significant role for chance, provided by the external environment and spontaneous mutations in the genome. If there is no determinism, it cannot be assumed that targeted, widespread, and uniform state interventions in the genome will have the expected effects on the population, or that anyone will attempt them. Any such attempt would be as disastrous as the eugenic measures introduced in the 20th century. This does not mean that the risks are zero; any modern technology can be abused. However, it is necessary to recognize that eugenics was a school of thought of the time that responded to current societal issues in this way. Today's society, although in many ways like the previous one, thinks differently, has more information about the origin of diseases or other defects, there are many movements in support of reproductive freedom, and a number of molecular biologists, geneticists, and doctors are willing to continue research, concretize knowledge, and thus refute arguments referring to eugenic principles. Given these factors, I consider the likelihood of the same misuse of genetics as in the past to be very low, but I cannot say zero.

Proponents of the new eugenics demand the neutrality of the state apparatus. Their concerns stem from the issues, but the risks to the gene modification market extend beyond state pressure. Specifically, one can imagine the pressure arising from the knowledge that other parents are already improving their children or possibly improving other aspects of their children. Even companies providing enhancement services can apply targeted pressure. Parents' expectations are shaped by many factors – the economic situation, the environment in which they live, the immediate surroundings, the opinions of family or friends – and are also influenced by information published in the media and on social networks, and, finally, by targeted advertising. We live in an information society; thanks to the internet, the work environment and private life are affected by a vast amount of available information, which we receive actively and passively (Arnold, 2023, pp. 1–3), making it very difficult to navigate. Therefore, parents should have the right to improve their child on their own free will, but they should not make the decision entirely on their own. Moreover, although liberal eugenicists believe that the state should be neutral, it is likely to play some role in the overall system.

Research in genetics is constantly evolving. From the point of view of gene modifications

of unborn children, it is therefore necessary to ensure as much information as possible for parents who will request improvements for their child. This includes not only complete information about the function of genes and the process of inheritance, but also an analysis of potential health problems, risks, and consequences. The decision whether they want their future child to undergo the adjustment, made based on all available information, will be free, and they will also be able to choose from a range of possible adjustments the one that most closely matches their ideas and expectations. In the case of any gene manipulation in adults, there must be unreserved agreement between the doctor and the patient; in the case of enhancement of the unborn, there must be a consensus between the doctor and the parents of the embryo. If the idea of the parents does not align with the main principles of genetics, does not consider possible health risks or concerns, or is completely irrational and cannot be fulfilled, their decision should be consulted. The evaluation of a specific situation should be in the hands of a competent doctor or geneticist, who will evaluate all possible risks and consequences for the child, and above all, ensure full information for the parents, who will, thus, could rationally evaluate whether they are willing to expose their future child to the given enhancement.

It is highly likely that private companies will make improvements. I consider it important that someone represents and ensures the control component of the whole process, mainly so that the parents feel safe and are not pressured. It is not necessary to limit parents in the decision to improve their child, nor is it necessary to limit them in choosing specific qualities to improve. However, it is necessary to eliminate any pressure on them and ensure their right to be fully informed about the entire process and its consequences, so that a well-informed and free decision can be made based on the available facts. Parents must come to the decision themselves; they can be helped by the advice and recommendations of experts, as in the case of reproductive technologies. I agree with liberal eugenicists that the state should not regulate parents' decisions in any way, but it should not be neutral; it should take on the role of protector. Since the improvements will be carried out in the private sector, it will be necessary to monitor the conditions under which the improvements are made, whether there are no restrictions on personal rights and freedoms, and whether there are no improvements that can be proven to have a strong negative effect on life or the birth of the child. State authorities could thus take on the role of controller (as in the regulation of research on human embryos) and protect parents' rights to make free decisions. The establishment of special control bodies or commissions within individual companies appears insufficient, as it is very difficult to ensure their independence.

It can be argued that the state's role should remain neutral, and its control function could be carried out by scientists themselves. Self-regulation of scientific research is a very important issue in the field of science, which culminated in the voluntary recommendations issued at the Asilomar conference. When Paul Berg began working with recombinant DNA in the late 1950s, he and his colleagues realized it was a potentially dangerous tool that needed to be handled with great care because it could also be used in human cells (Baskin, 2016, pp. 367–368). The purpose of the Asilomar Conference in 1973 was not only to discuss recombinant DNA, but also to address safety in scientific research more broadly. A list of recommendations was drawn up by the scientists themselves, including, for example, a ban on pipetting by mouth and regular workplace inspections (Berg & Mertz, 2010, p. 13), aimed at ensuring greater safety when working with viral material. Two years later, the Asilomar II conference took place, during which not only biologists but also journalists and lawyers were invited (Mukherjee, 2017, p. 229). Its aim was again to discuss future gene manipulations and their risks, but with a much wider audience in mind. As a result, scientists sought to regulate their own research, which was very unusual for science at the time. Even more unusual may seem the fact that one of the conference's goals was to convey the field of genetic research to the public.

When a group of scientists led by Jennifer Doudna and David Baltimore wrote a request for

a moratorium on human gene manipulation in 2015, they believed that other scientists would share their concerns and follow the recommendations presented. In the same year, Junjiu Huang published the results of his genetic research on embryos (Cyranoski & Reardon, 2015, p. 1), the sole aim of which was to cause controversy. It was clear to the watching scientists that China would not comply with the moratorium, and the Western world began to fear that if they did not start the same experiments now, they would never catch up with China. In 2018, He Jiankui also published the results of his experiment on human embryos (Greely, 2019, pp. 111–183). As in the previous case, the scientific community was stunned, but in this experiment, Jiankui went further than Huang, leaving the edited embryos to continue developing in the mother's womb, and genetically modified twins were born. A second moratorium was called for in 2019, after the results of a Chinese experiment were published; some scientists were not too keen on its proposals. A moratorium has been proposed for the next 5 years, during which the CRISPR/Cas9 system will be further tested and its potential uses and risks considered, while creating space for the public to decide whether they support gene manipulation. However, scientists feared that some states would incorporate the moratorium into their legal systems, so that, upon its expiration, states would be bound by their laws and block permitted gene manipulations (Weintraub, 2019). However, self-regulation of scientific research has already failed several times. So, can scientists really be trusted to serve as an unbiased control component in the field of gene enhancement to protect not only parents but future children?

Considering past events, the state's control role and the scientists' own role appear problematic. The biologists participating in the Asilomar conference did not trust the state apparatus for understandable reasons – the events of the Second World War were still very fresh, and the risk that some scientists still held eugenic ideas was real. However, scientists' mistrust of political power stemmed from specific historical events and experiences, as well as from the thinking of the previous era. The two Chinese experiments over the last 10 years that ignored conventions and recommendations reflect a disregard for the concerns of the scientific community and are driven by the desire to prove what no one else has ever achieved. Are the actions of Chinese scientists a reflection of current thinking? I don't agree that other people should be held responsible for the mistakes of others, but I also don't recommend that gene enhancement be supervised by scientists, because their reliability cannot be guaranteed. Scientists should have the main say in the concrete process of improvement, in all technical, biological, and medical requirements. At the same time, they should serve as advisers to parents before their final decision, supervise the observance of ethical principles, and not be alone. In my opinion, the state should not regulate gene enhancement; it should protect its participants together with scientists.

Conclusion

So, who should be involved in the decision-making process, i.e., genetic improvement? The whole process was supposed to contain three components. Despite all the objections, parents should be the main component. They should have the right to make a free decision about whether they want to improve their child, and if they do, they should be allowed to do so. Parents want (at least most of them, we agree) the best for their children, but their views of what is best may differ from those of other parents. Therefore, they should also have the right to choose specific traits to enhance based on the direction they want their offspring to take. Their reasons for choosing properties may vary and are likely to be a combination of many factors and information from multiple sources. Therefore, relevant experts – doctors, geneticists, and others – should also be part of the entire decision-making process. They will provide parents with complete information about enhancements, technical requirements, biological laws, health risks, etc. Experts should not put pressure on parents but should be able to correct their demands if they seem unrealistic, significantly contradict basic intuitions, or are completely impossible

from a genetic or medical perspective. The third component should be the legal apparatus, whose enforceability will be ensured by the state. The latter, through its bodies, should primarily ensure the safety of participants in the improvement process, i.e., the parents. It should have a control function, supervising whether everything is carried out in accordance with the established ethical standards and ensuring that there is no pressure on parents from private companies or other participants in the process. It should also ensure that all available information is presented to parents and that none is concealed. Its function should be strictly safety; it should not in any way regulate gene enhancement or further research in this area. Here, the powers should remain in the hands of scientists. The three-component hierarchy of the decision-making process should, among other things, ensure that the same human rights violations that occurred in the 20th century, such as eugenics, do not recur.

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