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Transhumanism and genetics, or how to create bespoke babies

Par Annick BOSSU

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Whilst there is an international consensus against the deliberate genetic modification of the human species following the birth *of* the "*CRISPR babies*" in China in 2018, biotechnology companies in Silicon Valley, backed by a group of billionaire investors, are working to create genetically modified or hand-picked babies. This phenomenon, which is no longer the stuff of science fiction, is accompanied by attempts to normalise such modifications to the human species.



Žižkov Television Tower Prague - babies by David ?erný

Inf'OGM *has previously addressed the issue of unnatural genetic modifications in humans. In this article, the issue is examined in its entirety, with a view to providing information on the advances made by certain Silicon Valley start-ups.* Inf'OGM *hopes to document this field in greater depth and on a more regular basis in the coming months.*

For Silicon Valley companies engaged in genetic modification of the human species, the aim is no longer to treat hereditary genetic diseases, but to enhance the performance of the unborn child, which would, after a few generations, lead to the genetic modification of our species. This approach forms part of transhumanism, an ideology and movement aimed at "*improving"* humans (on the pretext that they are no longer suited to today's technological world).

Faced with this transhumanist pressure and the possibility of a relaxation of international conventions, or even the legalisation of genetic modification of the human species, a coalition of organisations and individuals, initiated in the United Kingdom, was formed in 2023 to uphold the current consensus on a ban. For these organisations, there is an urgent need to curb a course of action chosen by a few (trans)humans with no regard for ethical concerns, particularly as the proponents of "*algorithm factories*" are involved in this work[1]. Many companies are involved. Which ones are they? What do these genetic modifications, designed to alter a child's traits, actually entail? From a legal, but above all a philosophical, perspective, do these modifications have the right to exist?

A business incubator behind future "*à la carte*" babies

Numerous press articles have revealed the existence of start-ups, mainly based in Silicon Valley, which make no secret of their transhumanist intentions[2]. The genetic modification of unborn children in Silicon Valley involves around forty companies and "*research*" laboratories. This start-up incubator is the brainchild of Brian Armstrong, CEO of the cryptocurrency firm Coinbase[3]. He founded the start-up Preventive, which aims to genetically modify human beings. To this end, he has joined forces with Lucas Harrington, a former student of Jennifer Doudna and co-founder with her of Mammoth Biosciences[4], and Matt Krisiloff, founder and CEO of Conception, another start-up in the sector that aims to "*create new possibilities for having children*"[5] . Sam Altman, of OpenAI[6] (computer processing misleadingly referred to as "*Artificial Intelligence*"), is also an investor in Preventive[7].

Other start-ups, such as Orchid Health and Nucleus Genomics, openly state that they screen embryos to ensure a baby is free from certain diseases by offering to genetically analyse embryos produced through *in vitro* fertilisation[8]. The latest entrant in this field, Herasight, explicitly offers to select embryos with high IQs – an obsession amongst Silicon Valley engineers[9] .

These companies use algorithms which they claim are capable of analysing specific genetic sequences in the embryo. This approach is already a reality, with the cost to parents ranging from 2,500 to 50,000 dollars (2,230 to 44,700 euros) per embryo[10].

Finally, companies such as Colossal Biosciences – already known for its attempts to de-extinct species[11] – are seeking to develop human embryos *outside the womb.* Similar companies exist, notably in China, and are linked to Silicon Valley start-ups[12].

Eugenic techniques for creating "*à la carte*" babies

Genetic modifications of the human species with a transhumanist aim are centred on four intersecting areas of "*research*".

1 – Genome prediction and embryo selection

Following *in vitro* fertilisation and pre-implantation genetic diagnosis (PGD), embryos possessing certain gene sequences – which are believed to determine the desired characteristics of the unborn child – are selected. The discarded embryos would no longer contribute to future generations, thereby altering the human genome.

2 – *In vitro* gametogenesis

This is a technique that enables the artificial creation of gametes (eggs and sperm) from induced pluripotent stem cells (iPS cells). These are body cells, such as skin or blood cells, which have been genetically and chemically "*deprogrammed*" from their specific function and then reprogrammed to become pluripotent stem cells capable of developing into all types of tissue, including oocytes and sperm. The number of oocytes obtained would therefore be very high for future *in vitro* fertilisation procedures. The resulting embryos would also be very numerous and could be screened to create "*designer babies*"[13] . The company Conception Bio, mentioned earlier, specialises in this technique; it states: "*High-throughput genetic screening allows different conditions to be tested, whilst computer vision assesses cell quality, facilitating rapid iterations and large-scale quality control*"[14].

3 – Genetic modification of embryos

This can be carried out using new genetic modification tools, such as CRISPR/Cas or its so-called "*enhanced*" versions. This is what He Jiankui carried out in China in 2018[15]. In effect, cells from early-stage embryos are modified. Such modifications can also be carried out on gametes, oocytes and spermatozoa.

4 – The development of artificial wombs

These are intended to eliminate the risks and constraints associated with pregnancy. The artificial womb does not yet exist, but researchers have already begun conducting trials on animals, in the hope of subsequently developing prototypes suitable for use in humans[16].

All these companies emphasise solving problems of infertility – without questioning the non-genetic causes – or of hereditary genetic diseases. But the real issues lie elsewhere and are clearly explained. Brian Armstrong tells us: "*Lots of work to get there, but this may help with the decline in birth rates. And it would start to accelerate evolution (which, by natural selection, is a very slow process, and only optimizes for survival and replication)*"[17].

Finally, we learn that Columbia University in New York and the Oregon Health & Science University are also supporting these projects and are attempting to patent methods for "*editing*" human embryos, with a clear intention for reproductive use[18].

A global disparity in the legislative framework governing these techniques

With regard to genetic modification techniques, a report in *The Wall Street Journal* cites the company Preventive, which, because the "*editing*" of embryos intended for implantation is banned

in the United States, is exploring jurisdictions in other countries with more lenient regulations in this area[19]. Indeed, despite the majority consensus in favour of an international ban, certain countries [20] or certain self-proclaimed libertarian private islands[21] pay no heed to ethical considerations.

It should be noted here that we are concerned with genetic modifications to germline cells (gametes, gamete precursor cells and embryos), which raise profound concerns due to their irreversible and transgenerational nature. Modifications to so-called "*somatic*" cells in the human body are not covered here. Nor are we discussing genetically modified surplus embryos intended for research and not implanted[22].

Of the 197 countries (recognised by the UN), many do not conduct research in this field. A survey reported by the journal *SAGE* covering 106 countries reveals a disparity in national policies[23]. Thus, 96 countries have regulations or guidelines relating to genetic modification in the germline and in embryos. In 2020, 75 of these 96 countries prohibited the use of genetically modified *in vitro* embryos to initiate a pregnancy, although five countries provided for exceptions to their bans. No country explicitly authorises the heritable modification of the human genome. Finally, 18 countries have no legislation addressing this issue and 3 countries have not yet taken a position.

At the international level, the Oviedo Convention, adopted by the Council of Europe, gives precedence to human rights over the interests of society and science. Article 13 stipulates that "*an intervention seeking to modify the human genome may only be undertaken for preventive, diagnostic or therapeutic purposes and only if its aim is not to introduce any modification in the genome of any descendants*". However, not all countries have ratified this convention – far from it [24].

The WHO, for its part, merely makes recommendations and states that "*human genome editing has the potential to advance our ability to treat and cure disease, but the full impact will only be realized if we deploy it for the benefit of all people [...]*"[25].

The French bioethics law, adopted in 2021, prohibits the transfer of genetically modified embryos into women's wombs[26]. However, it permits the selection of embryos following pre-implantation genetic diagnosis (PGD) solely in cases where there is a risk of "*particularly serious genetic diseases recognised as incurable*"[27]. This law needs to be reviewed, and these provisions could change under the guise of new medical necessities[28]. At international level, legislation concerning PGD, where it exists, varies from country to country.

Finally, as regards *in vitro* gametogenesis, no regulations currently exist, as this technique is, in reality, still in its infancy in humans. The French publication *La lettre de la biomédecine* states: "*Despite the proof-of-concept results provided […] the complete reconstitution of mature human gametes – fully functional oocytes or spermatozoa – has not yet been achieved. The cells produced still exhibit genetic and epigenetic abnormalities, and the cellular environment necessary for their maturation remains difficult to replicate in the laboratory*"[29]. International monitoring will therefore be essential regarding the possible legalisation of this technique.

Transhumanism and eugenics: a dizzying prospect

When scientists seek to become dealers in bespoke babies, ethical boundaries are shattered. Indeed, the companies in question believe that their ambitions are in line with other Silicon Valley initiatives and are driven by the conviction that the rules do not (or should not) apply to them and ""laws will change" *because they don't like the ones that are there*"[30]!

Thus, because the technology promises it, these start-ups are working to completely mechanise human reproduction. This rejection of nature is a hallmark of transhumanism, but it goes even further since, no doubt driven by their lust for power, these researchers envisage "*altering evolution* ". All of this is mind-boggling, in more ways than one.

Firstly, our understanding of living organisms is still very patchy. Modifying a genetic sequence (a fragment of DNA) with a view to altering a specific trait in an unborn child remains an illusion, as genes are not entities independent of one another. Epigenetics reveals their interactions to be of breathtaking complexity. Thus, modifying the genome – whether in gametes, embryos or the cells from which iPS cells are derived – will lead to changes at every level: genetic, epigenetic, cellular and within the unborn child's organism. Yet we cannot predict these changes, some of which may well be harmful.

It is therefore dizzying to witness the scientific reductionism at work in Silicon Valley: will insufficient scientific knowledge feed into algorithmic machines and claim to bring artificial children into the world?

It is dizzying to contemplate the loss of what defines our history as living beings and as humans: babies would be sold like objects, complete with "*quality control*"! These children would have no generational history, no maternal bond (the importance of which we know) if the artificial womb were to be implemented, manufactured by machines. Do we ever ask ourselves about the lives of these selected children, "*tailored*" to their "*parents*" specifications, who might be born?

Some of the embryos discarded after PGD might have been born, lived and contributed to the evolution of humanity: we are faced with laboratory eugenics, a radical form of eugenics. What are the selection criteria, given that albinism can be a cause of discrimination? Is there a catalogue of " *good*" genes? Who grants themselves the power to define them? What ethical criterion can justify denying a human being the right to exist?

It is also dizzying to contemplate the symbolism of the artificial womb. Might the transhumanists' mad project not be to rid ourselves once and for all of nature and, in that case, of our mammalian animal nature? One dares not think of a rejection of women… given that work on an artificial placenta is also underway!

Another cause for unease: the patentability of human beings. Whether it concerns techniques or genetic sequences, all this research in Silicon Valley is or will be subject to patents, which confer industrial property rights over their "*invention*" on the companies holding them. Are human beings destined to become the property of these companies? This is, or will be, the case for plants, animals and micro-organisms. Currently, a process patent extends its scope to all products produced using that process… except humans, who are not, for the time being, patentable.

Finally, one is left reeling at the boundless arrogance of these transhumanists: human evolution, stemming from the evolution of all living things, has unfolded over millions of years, with a great deal of uncertainty. Accelerating this evolution is inconceivable, unless we are to transform the species into inhuman beings.

In the face of all these potential dangers for the future of humanity, a number of organisations have drafted a declaration, accompanied by a petition, opposing the legalisation of genetic modification of embryos. It is currently circulating internationally at[31]. For these organisations, it is indeed vital that civil society takes these issues into consideration, as what is unthinkable today may well become a reality.

1 "*Algorithm factories*", *"computer calculations*" or "*machines*": these are the terms chosen by *Inf'OGM* to refer to "*artificial intelligence*", which is not intelligence at all, but a collection of increasingly fast electronic computing machines.

2 Emily Glazer, Katherine Long and Amy Dockser Marcus, "Genetically Engineered Babies Are Banned. Tech Titans Are Trying to Make One Anyway", *The Wall Street Journal*, 8 November 2025.

3 Post by Brian Armstrong on X on 2 June 2025.

4 Mammoth Biosciences describes itself as "*a biotechnology company focused on leveraging its proprietary ultracompact CRISPR systems to develop potential long-term curative therapies for patients with life-threatening and debilitating diseases*".

5 Conception website.

6 Sam Altman is president of OpenAI, originally *a "non-profit organisation dedicated as ensuring that artificial general intelligence (AGI) "benefits all of humanity*". Elon Musk was also president of OpenAI at its inception.
Wikipedia contributors, "OpenAI", *Wikipedia, the free encyclopaedia,* page accessed on 12 November 2026.

7 Katie Hasson, "Silicon Valley's race to produce genetically engineered humans", *The Centre for Genetics and Society*, 21 November 2025.

8 Julie Morvan, « La startup Orchid Health promet le bébé idéal grâce à l'IA et la génomique », *Numerama*, 16 September 2025.
« QI, couleurs des yeux, taille… Une société américaine propose aux futurs parents de choisir le « meilleur bébé » », *France Info*, 23 December 2025.

9 Katie Hasson, "A New Eugenics Gold Rush? From designer babies to not-quite-designer jeans", *Centre for Genetics and Society*, 21 August 2025.
« Vers des humains génétiquement modifiés ? », *Inf'OGM*, 24 April 2023.

10 Katie Hasson, "A New Eugenics Gold Rush? From designer babies to not-quite-designer jeans", *Centre for Genetics and Society*, 21 August 2025.

11 « Un mammouth 2.0 pour sauver le climat ? », *Inf'OGM*, 17 September 2025.

12 Katie Hasson, "Silicon Valley's race to produce genetically engineered humans", *The Centre for Genetics and Society*, 21 November 2025.

13 Annick Bossu et Denis Meshaka, « La gamétogenèse in vitro : vers la fin du sexe ? », *Inf'OGM*, 9 May 2023.
Zoé JACQUINOT et Olivier Leduc (OGM Dangers), « Bioéthique : qu'est-ce qui se cache derrière les cellules iPS ? », *Inf'OGM*, 10 February 2020.

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15 Christophe Noisette, « Bébés OGM en Chine : le chercheur en prison mais après ? », *Inf'OGM*, 7 janvier 2020.

16 Allane Madanamoothoo, "The quest for the "artificial womb": between fiction and research advances", *The Conversation*, 13 November 2025.

17 Brian Armstrong's post on X, 1st April 2025.

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19 Rishabh Sharma, "This startup wants to edit embryos, and tech giants are paying for it", *Business Standard*, 9 November 2025.

20 Baylis F, Darnovsky M, Hasson K, Krahn TM, "Human Germline and Heritable Genome Editing: The Global Policy Landscape", *The CRISPR Journal*, 20 October 2020, Volume 3, Issue 5, pp. 365–377.

21 Marco Cremaschi, « Próspera, une enclave libertarienne au cœur des polémiques au Honduras », *The Conversation*, 12 mars 2026.

22 Annick Bossu, « Bioéthique et esprit de la loi : des garde-fous bien fragiles », *Inf'OGM*, 29 juillet 2021.

23 Baylis F, Darnovsky M, Hasson K, Krahn TM, "Human Germline and Heritable Genome Editing: The Global Policy Landscape", *The CRISPR Journal*, 20 October 2020, Volume 3, Issue 5, pp. 365–377.

24 Annick Bossu, « Génome humain : brèche dans l'article 13 de la Convention d'Oviedo », *Inf'OGM*, 14 décembre 2022.
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28 « Nouveau tri génétique in vitro : une proposition de loi affiche un « consensus médical » en s'appuyant sur des études anciennes, restreintes, et même contredites », *Genethique*, 26 October 2026.

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30 Katie Hasson, "Silicon Valley's race to produce genetically engineered humans", *The Centre for Genetics and Society*, 21 November 2025.

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