by Jure Zovko

Current Biethical Challenges

A Conversation with Renzong Qiu[1]

1. Dear prof. Renzong Qiu. I would like to open our conversation by referring to the conference of *Institut international de philosophie* in Peking University 15-19 September 2015 "Dimensions of the Human". At that time, you gave a lecture entitled "Dimensions of the Human in Bioethical Context and Beyond / Les dimensions de l'humain dans le contexte bioéthique et au-delà". You were with me in the same session, "Dimensions of the Human in the Light of Human Sciences / Les sciences de l'homme face aux dimensions de l'humain", which was moderated by Herta Nagl-Docekal. I still remember your lecture very well: nine years ago, you applied Marx's famous 11th thesis on Feuerbach to the current bioethical constellations: now it is important for us to preserve our life world in the bioscientific research context. A lot has happened in the field of human genome research since then. I would like to hear your opinion on this area of research, which has not yet been sufficiently clarified?

   There may be two reasons that explain my sensitivity to Karl Marx's unfulfilled wish: Philosophy should change the world. The first is the influence of Confucianism, which I encountered as a schoolboy in the fourth grade of primary school. At this school Confucianism was a required subject. Students were expected to recite passages from two Confucian classics—*Analects of Confucius* (abbreviated as the *Analects*) and *Mencius*—regardless of their understanding. I will forever remember the first two sentences of the Analects:
   学而时习之，不亦说乎？
   What a joy (说 = 悦 yue; it comes from within, from the inner heart) it is to learn and practice constantly!

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有朋自远方来，不亦乐乎？

What a pleasure (乐 le; it comes from outside) it is to meet friends coming from afar!

In contrast to "friends coming from afar," "to learn and practice constantly" holds paramount importance. Thus, Confucianism advocates for philosophical study grounded in real world (or Lebenswelt) experiences, rather than in an abstract, formulized world with which some Chinese philosophers are obsessed.

The second reason stems from my personal experiences witnessing the hardships and sufferings endured by ordinary people when I first encountered philosophy as a senior middle school student while my family was relatively well-off at that time. My father operated a small silk and cotton clothing shop in Suzhou City; however, my mother's two sisters lived under difficult circumstances, sometimes subsisting on little more than porridge. After reading several philosophical texts, an idea emerged in my mind: Can philosophy help us find ways to alleviate or even eliminate the hardships faced by ordinary people? Since then, this notion has stubbornly remained with me. This serves as another reason for my sensitivity toward Marx's aforementioned wish.

I read Marx's famous 11th thesis on Feuerbach while serving as a teaching assistant at Peking Union Medical College. Later I transitioned to the Institute of Philosophy at the Chinese Academy of Social Sciences (CASS). There, I encountered many younger colleagues who had been trained in philosophy departments at prestigious universities. They had grown up in an ivory tower, largely unaware of the hardships and struggles faced by ordinary people. These colleagues adhered to two prevailing dogmas: (1) "Philosophy is the history of philosophy"; and (2) "All problems in the world can be resolved by deducing solutions from a well-structured philosophical theory." They dismissed my work, expressing their disdain to the director of my institute rather than addressing me directly: "What Qiu Renzong does is not philosophy!" However, none of them became the member of IIP, or was awarded with UNESCO Avicenna Prize of Scientific Ethics.

Nevertheless, I remained undeterred by their scornful remarks. Upon joining CASS, I chose Philosophy of Science and Bioethics as my primary research interests. However, the pressing demands

arising from clinical medicine, biomedical research, and public health compelled me to concentrate on bioethics. Despite this shift in focus, I was elected as the Director of the Department of Philosophy of Science at the Institute of Philosophy at CASS and served as both Vice-President and President of the Chinese Society for Philosophy of Science due to my academic achievements in the field of philosophy of science.

I view bioethics as an excellent opportunity to develop a philosophy aimed not merely at interpreting but also transforming the world. In my opinion, bioethics—being a discipline rooted in normative practical ethics—identifies, analyses, and addresses normative issues (substantial and procedural ethical issues) that arise in clinical practices, health-related research, and public health activities through the use of ethical theories, principles, and methodologies. This endeavour seeks to assist professionals—including clinicians, biomedical scientists, and public health workers—as well as regulators in making sound decisions and taking appropriate actions.

An exemplary case is the regulations concerning compulsory sterilization of individuals deemed mentally retarded in Gansu Province. In 1989, upon my return to China from visits to the University of Wisconsin-Madison (invited by Daniel Wikler) and Queen's College, Oxford University (invited by Jonathan Cohen), I learned that the legislature of Gansu Province had promulgated the "Regulation on Prohibiting the Reproduction of Stupid, Foolish, and Idiots (SFIs)." They proudly claimed this initiative as a means to improve the quality of population which is a fundamental national policy of the Chinese government; other provinces soon followed suit.

Chinese philosophers have historically overlooked issues arising from regulations enacted at various levels of government. I felt compelled to take action. One option was to publish an article arguing that this Regulation cannot be ethically justified in an academic journal—a traditional and conventional approach. However, I believed this would be insufficient for a philosopher seeking meaningful change in society (a part of world).

Consequently, I chose another approach: with support from the Ministry of Health, I decided to conduct an on-site visit to Gansu alongside Gu Yuan—an obstetrician and bioethicist who served as my Postdoctoral researcher. We engaged in discussions and debates

with officials responsible for these policies in Gansu Province, consulted geneticists based in Lanzhou—the provincial capital, and visited several villages where we encountered individuals labelled as SFIs.

Through our efforts, we identified five key points:

(1) In Gansu, individuals classified as SFIs primarily consist of patients with Cretinism, which is congenital rather than genetic in nature.

(2) There has been no explanation provided for why an IQ score of 49 serves as the threshold for compulsory sterilization.

(3) The province has a limited number of genetic professionals, raising questions about how to accurately identify mental retardation attributed to genetic factors across such a vast area. The prevailing answer appears to be that it suffices if three generations are identified as SFIs. This rationale echoes Justice Holmes' perspective from the U.S. Supreme Court, who endorsed laws like Virginia's compulsory sterilization for "imbeciles" to prevent the nation from being "swamped with incompetence... Three generations of imbeciles are enough."

(4) No justification has been offered for the use of the discriminatory term SFIs instead of "mentally retarded" in the regulation.

(5) Female patients suffering from Cretinism experience high rates of mortality and complications during childbirth, along with increased risks of birth defects in infants; thus, restricting their reproductive capabilities is expected to be beneficial to them.

(6) There has been no clarification regarding why parental consent is not mandated; however, we have observed that some counties do require parental consent.

In 1992, I organized a National Conference on Ethical and Legal Issues in Limiting and Controlling Reproduction to evaluate whether the sort of regulation could be justified from medical, ethical, and legal perspectives. The conclusion reached was "not." Given that a national survey indicated only 17% of mental retardation cases were attributable to genetic factors—and considering that Cretinism results from iodine deficiency during pregnancy—the conference report (drafted by me) recommends fortifying edible salt with iodine in areas lacking sufficient levels (such as eastern Gansu). Furthermore, any ethically justified sterilizations should involve informed

consent when mentally retarded individuals are still competent or proxy consent when they do not. This report was subsequently forwarded by the Ministry of Health to provincial and municipal health administrations as an administrative recommendation.

Gansu Province subsequently abolished the regulations. The report was published in the journal *Chinese Health Law*, and I delivered a presentation titled "Why Compulsory Sterilization Cannot Be Ethically Justified?" at international conferences held in Rotterdam and Beijing. At the Beijing conference, Professor Alta Charo, former chair of the Human Genome Expert Committee of the US Academies of Science-Medicine-Engineering, was also invited to speak on women's reproductive autonomy. A few years later, Mr. Song Ping, who served as one of the Vice-Premiers of the State Council (central government) and had been Governor of Gansu Province for many years, invited Mr. Qian Xinzhong, the late Minister of Health, a researcher from the Institute of Genetics at the Chinese Academy of Sciences, and me to have a meeting at which I presented my findings on the Gansu case. This meeting took place at the People's Great Hall where we received positive evaluations from Mr. Song and Mr. Qian.

From studying the Gansu case, I have come to understand that for philosophers striving for changing the world, it is essential to protect fundamental rights and interests—particularly those of ordinary people and vulnerable populations. Furthermore, I believe that as philosophers we must remain vigilant when any government attempts to utilize genetic knowledge with aims such as improving the quality of population including enhancing human capabilities beyond *Homo sapiens* has. Consequently, I proposed that bioethicists should not be satisfied merely with publishing academic papers; rather, we must strive to translate our research results into policy recommendations that can improve social decision-making and action. According to rough estimates, our bioethical community has produced publications totaling several million Chinese characters while simultaneously providing policy recommendations to both central and local governments as well as legislative bodies amounting to one million Chinese characters.

He Jiankui is a notorious figure in the scientific community, often referred to as a "Rogue Scientist." After earning his Ph.D. in

biophysics at Rice University under the mentorship of Michael W. Deem, he took up a position at Southern University of Science and Technology. On November 27th, just one day before the Second International Summit on Human Genome Editing held in Hong Kong, He made an unexpected announcement to journalists: he had created the first genetically edited human babies—twin girls born in mid-October 2018, known by their pseudonyms Lulu and Nana (a third CRISPR-edited baby named Amy was later born). While He may have anticipated accolades such as a Nobel Prize for his work, he instead faced widespread condemnation both within China and globally.

Drawing lessons from the He Jiankui incident, I collaborated with three co-authors—Lei Ruipeng, Zhai Xiaomei, and Zhu Wei—to publish a highly influential commentary titled "Reboot Ethics Governance in China" in Nature in May 2019. The concept of "ethics governance" gained traction with the central government's issuance of directives aimed at establishing an ethics governance mechanism. This initiative began with the formation of a National Ethics Committee for Science and Technology; subsequently, this committee developed principles for ethical governance that emphasize that the ultimate goal of advancing science and technology should be human well-being. One of my students (Zhai Xiaomei) serves as a member of this committee. Notably, within these ethical governance principles lies the concept of "Ethics First" (伦理先行), which was developed by Lei Ruipeng and me. Thus, the concept of "ethics governance" has transitioned from academic discourse into an actionable policy for our nation.

Working alongside my colleague Lei Ruipeng as co-author, I published a paper titled "Arguments for Treating CRISPR-Edited Persons as Vulnerable" in the *Annals of Bioethics & Clinical Applications*, 2022; 5(3). In this paper, we argue that germline genome editing is ethically unjustifiable at present due to the unfavorable risk-benefit ratio associated with CRISPR babies.

The current immaturity of gene editing technology often results in off-target effects. Even when edits are made on-target, there can be unwanted, harmful, unexpected, and previously unappreciated changes in genes adjacent to the target site. Genome sequencing has revealed that mosaicism is increasingly common. Furthermore,

several mistakes were made by He Jiankui during his embryo genome editing: his choice of CRISPR for HIV prevention lacks a valid medical indication; an off-target effect was identified on chromosome number one in Lulu; a mutation was discovered in Nana's gene within her placenta; both Lulu and Nana exhibit mosaicism. Additionally, it is crucial to consider what happens to the rest of the genome post-editing—yet He did not examine the complete sequences of Lulu and Nana's genomes for any abnormalities following his interventions.

These genomic alterations resulting from CRISPR editing may pose significant risks not only to these edited individuals but also to their descendants and the future generations. Consequently, we advocated for a moratorium on germline cell genome editing in humans and sought efforts to codify this moratorium into law. Our proposal was accepted by legislators. The Civil Code promulgated in 2020 includes an article prohibiting germline cell genome editing, complementing existing government regulations that already impose such prohibitions.

2. For a long time, the view that science is value-free (Max Weber) was accepted in the philosophy of science. Over time, three criteria of scientific research have become established: *impartiality, neutrality* and *autonomy.* The neutrality of the sciences with regard to values is justified because scientific theories have no value judgments among their logical implications. But, the rapid development of biotechnological science over the last 30 years, has confronted us with the fact that scientific research is intimately tied to ethical questions. The future and destiny of the human species may be endangered by biotechnological research, in particular by gene technology. I ask you, as an internationally recognized expert in ethics and bioethics, for your opinion on these themes?

   I concur with your assertion that the perspective of science as value-free, as proposed by Max Weber, warrants reevaluation within the philosophy of science, and that three fundamental values of scientific research—impartiality, neutrality, and autonomy—have been established. Additionally, I would like to propose several other essential values, including integrity, protection of research participants, and friendly consideration for animals and the environment.

The value of "integrity" in scientific research is self-evident; I believe there is little contention surrounding this principle. My remarks are as follows:

First, during Max Weber's era, fully developed sciences were primarily physics and chemistry. Fields such as biology, scientific medicine, psychology, behavioral science, cognitive science, and ecology were still emerging without significant advances. Biological and ecological research involves sentient animals and environmental considerations; however, sociologists at that time lacked an understanding of the moral status and inherent value associated with sentient beings or the integrity of ecosystems—elements crucial to human existence and all living organisms in nature. It is therefore understandable that Max Weber did not incorporate these vital values into his theoretical framework.

Secondly, contemporary scientific inquiry in human biology and medical sciences (in which medicine relies on science rather than on magic or solely doctors' personal experience), psychology, behavioral science, cognitive science necessitates engagement with human subjects. Such research carries potential physical, mental, or social risks to human participants. Many researchers in these fields have overlooked the fact that any study involving humans inevitably generates identifiable personal information which can lead to privacy concerns—risks arising from unauthorized disclosure of personal information when participants are not informed of the disclosure. Drawing lessons from historical abuses perpetrated by Nazi doctors through unethical experiments on humans has led to the establishment of informed consent as a foundational principle in bioethics—a core tenet guiding ethical conduct in research today.

In the minds of Weber and his contemporaries, there was little consideration for critical values such as risk avoidance, harm reduction and minimization in scientific research and informed consent when scientists invite human subjects to participate in their studies.

Thirdly, unlike the science of Weber's era, contemporary science—particularly emerging technologies—has become increasingly complex, with a close interlink between science, technology, and engineering. Fields such as synthetic biology, artificial intelligence, neuroscience, and genetics exemplify this integration. In synthetic biology specifically, microbiology and genetic technology or

engineering are closely intertwined; this synergy enables the production of life-saving medicines or their precursors (such as artemisinin) for millions of malaria patients worldwide. However, it also raises concerns that synthetic biologists could potentially create pathogenic viruses resistant to vaccines that may lead to pandemics resulting in widespread fatalities with millions people.

Fourthly, distinct from the scientific landscape during Max Weber's time is today's context characterized by capitals-markets that compel science-technology companies to pursue maximum profit—a phenomenon described by Karl Marx in his *Das Kapital*. This pursuit often leads to conflicts of interest: the drive for profit can undermine the fundamental goal of advancing science for human wellbeing. Consequently, governments have taken measures to control key scientific and technological programs—including space exploration—to mitigate these conflicts.

3. The quest for perfection of the human being, promoted by sympathizers of enhancement ostensibly aims at progress and improvement in humanity. Representatives of transhumanism in bioethics (Nick Bostrom, Julian Savulescu, Ingmar Persson, Thomas Douglas, Mark Alan Walker) consider it the moral obligation of scientists to carry out scientific research in the field of genetic engineering in order to further the process of evolution, because human beings as they are, are obviously not perfect. Is this idea to engineer the human genome for the purpose of improving or enhancing *Homo sapiens* is like the opening of Pandoras box?

   I would like to emphasize that, first and foremost, gene enhancement—like any form of enhancement, including neuroenhancement or cognitive enhancement—has yet to be proven safe and effective with scientific evidence. Secondly, there is no substantiated evidence indicating that such enhancements have become an urgent necessity for a significant portion of the population either within a country or globally, especially when compared to pressing issues such as poverty. Lastly, what needs to be improved is our society rather than our species, *Homo sapiens* per se.

   First, it is essential to clarify the concept of enhancement and its distinction from improvement. Improvement refers to changes resulting from interventions (such as genome editing) that remain within

the normal range established by a species. For example, while human beings can achieve a maximum running speed of 40 mph—exemplified by Usain Bolt's record of 28 mph—if gene editing enables an individual to run at 38 mph, this constitutes an improvement. In contrast, if the changes induced by gene editing exceed the normal range and surpass the limits set for our species, they are classified as enhancement. For instance, should we be able to run at speeds comparable to those of a cheetah (70 mph) or possess night vision akin to that of cats following genetic modifications, such advancement would be considered enhancement.

This leads us to two critical questions: First is a scientific question: Is enhancement feasible? Second is an ethical question: Is enhancement ethically justifiable?

Several of my philosophical colleagues are overly optimistic about the performance of emerging technologies in the realm of enhancement. They tend to underestimate the complexity, uncertainty, and unknown factors that contribute to the safety and efficacy of current enhancement technologies.

For instance, in the case of gene editing, after many years of research, only one therapy for somatic cell genome editing has been approved for clinical use, with a treatment course costing approximately USD 2 million.

What He Jiankui undertook was germline cell genome editing aimed at the prevention of AIDS, which can be classified as enhancement. However, the scientific community widely condemned He for employing immature gene editing technology that could potentially cause significant harm to these CRISPR-edited infants and the future generations. In light of He's reckless actions, numerous countries reaffirmed their prohibition or imposed a moratorium on germline cell genome editing for preventing diseases and enhancement. This situation underscores the lack of scientific evidence to support the belief in the feasibility of gene enhancement.

Now we turn to the ethical questions: Is gene editing ethically justifiable? Arguments in favor of gene enhancement that claim to effectively prevent diseases, promote equality in education, or ensure intergenerational justice lack sufficient validity. For instance, there is no objective evidence demonstrating whether avoiding exposure to the sun or utilizing gene enhancement is more effective

in preventing skin cancers. Similarly, there is no data supporting the notion that enhancing innate learning abilities through gene editing surpasses the effectiveness of improving standard educational practices. Moreover, given the significant disparity between wealth and poverty in capitalist societies like the USA and socialist countries such as China, even if gene enhancement interventions are available, they are likely to exacerbate rather than alleviate educational inequities. Lastly, it remains premature to consider gene enhancement a viable method for safeguarding future generations due to a lack of evidence substantiating its efficacy.

For our perspective (my colleagues, including Zhai Xiaomei and Lei Ruipeng, have presented on gene enhancement at various occasions), we believe that the evaluation of decisions or actions related to gene enhancement should be grounded in two fundamental criteria: (1) The risk-benefit ratio associated with the intervention must be favourable; and (2) Patients or research participants must be treated with respect, which includes respecting their autonomy, implementing informed consent, safeguarding privacy, and ensuring equitable treatment.

How do we evaluate interventions involving gene enhancement? In cases of somatic genome editing for therapeutic purposes, we can assess the risk-benefit ratio based on decades of experience with gene therapy and recent preclinical research involving gene editing. Additionally, we can fulfill ethical obligations regarding informed consent by providing potential research participants with comprehensive information about what will occur during the intervention as well as its associated risks and benefits. However, evaluating the risk-benefit ratio in instances of gene enhancement presents significant challenges.

When considering germline genome editing—such as in He Jiankui's case—we face difficulties in adequately assessing this ratio due to numerous complex factors that are uncertain or unknown. Consequently, even if we were to review his protocol beforehand, it would remain impossible to predict outcomes post-editing: Did we successfully edit the genes? In He's case, one baby was not successfully edited resulting in mosaicism. Did our intervention affect normal genes? He only reviewed 80% of normal genes to determine whether there was any interference with them. Will this intervention

pose health risks to these babies and their descendants? Are there potential negative impacts on the health and wellbeing of the future generations?

Furthermore, how do we define benefit? If Lulu and Nana are not infected with HIV, how can we ascertain that this outcome is attributable solely to He's editing rather than other factors?

In the cases where much information remains unavailable even to scientists due to the complexity, uncertainty, and unknown factors involved, how can we adequately inform potential research participants? When sufficient information cannot be disclosed to these candidates, how can they make rational decisions regarding their participation in clinical trials for gene enhancement?

Our conclusion is as follows: Given our limited understanding of the human genome and gene editing technology, gene enhancement cannot currently be ethically justified. The priority order for human genome editing should be:

1. Somatic cell genome editing can be ethically justified.
2. Heritable genome editing (HGE) should face a moratorium on clinical trials; however, basic and preclinical research should remain permissible.
3. Gene enhancement for medical purposes may only be allowed at the stages of basic and preclinical research. The moral significance lies in the distinction between manipulating an embryo with a deficient genome for HGE versus one with a normal genome; thus, gene enhancement for medical purposes must proceed with greater caution than HGE.
4. Gene enhancement for non-medical purposes should not be considered at this time due to its involvement of far more complex, uncertain, and unknown factors.

Therefore, our conclusion is that developing gene enhancement is neither permissible nor morally imperative at present.

Philosophy must closely align with real-world conditions; according to available data, only about 20% of the global population enjoys a standard of living comparable to that of citizens in developed countries. This implies that the majority live under significantly poorer conditions. Most individuals are eager to alleviate poverty and achieve a relatively well-off life rather than pursue enhancement to their own genes or aspire toward transhumanism.

For me, the focus should not be on perfecting *Homo sapiens*, but rather on improving our society.

4. Human beings have not always existed, they came into existence as the result of natural selection. The most prominent transhumanists claim that the purpose of science and technology is to improve human capacities, especially, intelligence, memory, ability to concentrate, and prolonging the period of healthy life. Enormous advances in medical technology, such as, for example, stem cell therapy have resulted in some deadly diseases becoming treatable. Successes like these lead some scientists to wonder why we should limit ourselves to the treatment of the disease, why not continue to improve the countless aspects of human functioning. As philosophers, should we welcome such claims by bioscientists or defend ourselves against them by claiming that the possible negative consequences are unforeseeable?

   In China, we prioritize Beneficence as the foremost principle in bioethics and Promoting Human Wellbeing as the first principle in the ethics of science and technology, while we also place high value on respect for personal autonomy and human dignity. Both perspectives can be ethically justified.
   Over the past eight years, due to relentless efforts, 100 million impoverished individuals (including many of my relatives) have got rid of poverty in China, rather than focusing on enhancement. Similarly, in your country, €550 million was invested in constructing the Pelješac Bridge to facilitate convenient transportation for people instead of channeling funds into enhancement initiatives. I wonder whether we could alleviate poverty by enhancing poor individuals' capabilities to generate income or address transportation issues by improving people's swimming abilities from southeastern Croatia's semi-exclave to the rest of the nation.
   The actions taken by both China and Croatia can be ethically justified and ultimately benefit their respective populations. From a medical and bioethical standpoint, enhancing human capacities beyond *Homo sapiens* is not within our current scope at least for the foreseeable future.
   I would like to reiterate that there are two critical questions regarding enhancement: (1) Is it scientifically feasible to enhance human

capabilities, intelligence, and lifespan beyond those characteristic of *Homo sapiens*? To date, there is no evidence supporting this possibility; (2) Is it ethically justifiable to enhance humans beyond *Homo sapiens*? As yet, such enhancement lacks ethical justification.
And despite the excitement surrounding advanced technologies such as stem cell therapy, gene therapy, gene editing, and brain-computer interface (BCIs), these innovations are often complicated by concerns regarding their safety and efficacy.

5. Advocates of biomedical engineering argue that ethics and consideration of moral principles are in fact a major obstacle to free scientific research. Modern technology and genetic engineering ignore the normative principles that aim to preserve and protect human dignity. At the same time, ethicists have been accused of dubious sanctification of human nature, which in the opinion of genetic research experts threatens freedom of research. Do you have a clear position on this?

   The assertion that ethical considerations and moral principles constitute a significant barrier to free scientific research may stem from a misunderstanding of the actual landscape of scientific inquiry, particularly in fields such as biomedical engineering. Since the emergence of contemporary science, which is intricately linked with technology and engineering—especially in areas like emerging technologies—visionary scientists have inadvertently created obstacles to unrestricted research. Unlike the realm of Newtonian science, the outcomes of research in emerging technologies, including gene editing, have immediate implications for patients, research participants, and clients/customers. In the case of He Jiankui, immature gene-editing techniques coupled with his erroneous manipulations could adversely affect the health of CRISPR-edited infants and their descendant. The clients who use ChabotGPT may become victims of privacy violations due to their personal information is stored in the ChatGPT companies, and also face risks related to racial or gender discrimination as well as threats from hackers or deepfakes. Consequently, it is scientists and their organizations such as national academies or international associations who/which develop ethical guidelines—with input from philosophers or ethicists—to serve

as normative frameworks for relevant scientists and technologists in order to regulate their freedom in research.

In biomedical research, the establishment of norms to limit scientists' freedom is particularly crucial. Prior to the Nazi era, scientific researchers in Europe and the United States exploited human subjects through disproportionate risks and lack of informed consent for an extended period (e.g., Walter Reed's Yellow Fever Research in Cuba in June 1900). Nazi physicians conducted inhumane and coercive experiments on victims within concentration camps, resulting in 15,754 documented cases across various nationalities and age groups; however, the actual number is believed to be significantly higher. Many individuals perished during these experiments, while others survived with irreversible disabilities. At the conclusion of the Nuremberg Trials, the presiding judge delivered a final verdict that included a second chapter titled "Permissible Medical Experiments" (later known as the "Nuremberg Code"), which comprises twelve principles—most notably stating that "the voluntary consent of human subjects is absolutely essential" (subsequently developed into what we now refer to as "informed consent") along with other principles addressing harm-benefit assessments. The Nuremberg Code was drafted by Austrian-American neurologist Leo Alexander and American physiologist Andrew Ivy; neither were philosophers or ethicists. Can scientists, philosophers, regulators, and society at large remain indifferent to the risks and harms posed to research participants under the guise of free scientific inquiry? Certainly not. Thus, both the principles outlined in the Nuremberg Code and their more advanced versions have been adopted by all international organizations and countries engaged in biomedical research.

Perhaps we should further inquire: In a society where taxpayers allocate funds to support scientific research, whether sourced from public or private sectors, what is the ultimate goal? Is it for scientists' curiosity, the profits of scientific and technological companies, aspirations for prestigious awards such as the Nobel Prize (as He Jiankui envisioned), or ultimately for human wellbeing? The answer is clear to scientists, philosophers, regulators, and the public in China: it is primarily for human wellbeing. This does not imply that stakeholders cannot pursue curiosity, profits, or accolades; however, when

these objectives conflict with the paramount goal of human well-being, the latter must take precedence over the former.

From the arguments presented above, we can conclude that scientific research should not be entirely unrestricted. It must be conducted within the framework of normative principles. The assertion of free scientific research cannot be ethically justified in many contemporary cases, except when such research is unrelated to humans, sentient animals, or environmental integrity. As bioethicists, it is our responsibility to assist scientists and technologists in adhering to normative principles designed to preserve and protect human dignity, animal welfare, and the environment. Nonetheless, any proposed or specified normative principle for science and technology must be ethically justifiable.

I have presented sufficient reasons to argue that scientific research should be governed by normative principles. However, we reject the notion that our argument is based on human nature. Instead, in my colleagues' and my presentation, we contest Habermas' opposition to genetic engineering grounded in human nature. First, the concept of human nature is both controversial and ambiguous, with various interpretations and accounts. This ambiguity renders it unsuitable as a foundation for argumentation. Secondly, the human genome—whether enhanced or unenhanced—does not solely determine one's identity; rather, personal identity emerges from the interaction between one's genome, body, and environment. Thus, this line of reasoning implies genetic determinism (the belief that genes dictate everything) and gene essentialism ('I am defined by my genes').

Thirdly, from ancient time on philosophers contend whether human nature is good or bad. Probably, in human nature exist both positive and negative aspects. How can it serve as a norm or criterion for evaluating whether our decision or action is good or bad? Human nature informs us about what 'is,' but does not prescribe what we ought to do; therefore, arguments based on human nature fall into the Naturalistic Fallacy: inferring from 'is' to 'ought.'

Philosophers advocating for enhancement often align themselves with gene essentialist views. The book *How Life Works: A User's Guide to the New Biology* by Philip Ball illustrates that each developmental step results from interactions between genes and internal/

external environments; thus, genes cannot be regarded as the blueprint of life.

6. Philosophers have already suggested (e.g. Ronald Dworkin, Thomas Nagel, Jürgen Habermas) that, with regard to the future of human nature, we are prepared to regard gene therapy for birth defects in embryos as acceptable and thus accept a "third decentring of our world view" after the Copernican and Darwinian revolutions. We must bear in mind that only a cultivated sense of responsibility and respect for human dignity can prevent the unscrupulous commercial exploitation of gene therapy and the abuse that could arise if this type of therapy is offered as a consumer good that can be bought on demand "in the genetic supermarket" like any other commodity. Should we try to solve these imminent problems through ethical education of scientists, or do we need the intervention of the state through legislation?

   In response to the first part of this question, I respectfully disagree with those philosophers who contend that we are prepared to accept gene therapy for birth defects in embryos. A birth defect is defined as a physical or biochemical abnormality present at birth, which may be inherited or caused by environmental factors (such as Cretinism). Current research indicates that a significant proportion of birth defects are believed to be caused by a complex interaction of both genetic and environmental factors; and estimates suggest that approximately 20-25% can be attributed solely to genetic causes, while the majority involve more intricate etiologies encompassing both environmental exposures and genetic susceptibility. However, the precise cause of many birth defects remains unknown. These findings indicate that most embryonic birth defects cannot be effectively treated or prevented through gene therapy. Perhaps, only a minority of philosophers consider gene therapy for embryonic birth defects to be "acceptable."

   However, the acceptance by a minority of philosophers does not substantiate the scientific validity of gene therapy for the majority of birth defects in embryos. Currently, clinical trials are underway to explore nuclease-based gene therapy for a subset of inherited monogenic diseases, including cystic fibrosis, Duchenne muscular dystrophy, bone marrow disorders, and hemophilia; these trials also

highlight associated challenges and future prospects. Scientists estimate that it will take at least 20 years to address the obstacles facing gene therapy for these monogenic conditions. This implies that we will only know whether gene therapy is scientifically safe and effective for birth defects caused by monogenic diseases two decades from now. Thus far, scientists have not considered employing gene therapy to treat most birth defects due to their more complex etiology involving interactions between environmental exposures and genetic susceptibility. Therefore, my conclusion is that it is premature to accept gene therapy for all birth defects—let alone claim that it represents a "third decentring of our world view" following the Copernican and Darwinian revolutions.

In addressing the second part of this question, I contend that the unscrupulous commercial exploitation of gene therapy and other emerging technologies cannot be adequately addressed solely through ethical education for scientists. As previously mentioned, science and technology are predominantly developed within a capitalistic market context, where the inherent nature of capital—characterized by greed, as noted by Marx—poses significant challenges. In both China and the United States, many scientists simultaneously engage in business ventures, leading to unavoidable conflicts of interest. This issue extends beyond individual scientist-entrepreneurs; it is fundamentally rooted in the broader capital-market system. Therefore, state intervention through legislation is essential.

7. Experiments by brain physiologists since the "Libet experiment" tend to provide evidence that free will does not exist. Even though the results of physiological research suggest that will is a brain-generated sensation rather than an independent entity, there is much for philosophical interference in how we can cultivate our volitional choices through morality. On the other site philosophers claim that freedom of action and freedom of will are the most important determinants of human beings. Should our ethical position be a prerequisite for the free will in the age of globalisation, otherwise we could always look for arguments to justify immoral actions physiologically?

   Regarding the first part of this question, the number of scientists and philosophers challenging the concept of free will has increased

over the decades. In 1929, Albert Einstein was quoted as stating, 'I do not believe in free will.' However, his argument remains unsubstantiated; citation alone does not constitute an argument.

Neuroscientists contend that information regarding decisions is detectable in brain activity several seconds prior to conscious awareness of those decisions. This phenomenon is referred to as "readiness potential". While experiments demonstrating readiness potential are valid, they do not necessarily imply the non-existence of free will. Benjamin Libet's landmark study— which first illustrated the readiness potential effect—indicates that unconscious neural factors may influence a human agent's decision or action without being deterministic (Robert Kane). Libet also observed that although the intention to flex was unconscious, subjects could 'veto' this intention, suggesting that a conscious decision against flexing would prevent such an action. I argue that Libet's experiment does not decisively support the claim negating free will; he conflated proximal desire with proximal intention. There may exist an unconscious desire to flex followed by a conscious intention to do so; these mental processes have causal implications for subsequent actions. As distal intentions allow individuals to plan specific actions for future execution rather than immediate response, even if current actions arise from unconscious neural activities, it does not negate their connection to conscious processes contributing at least partially to long-term planning for those actions. Furthermore, critics assert that studies on readiness potential primarily focus on trivial tasks such as pressing buttons or wrist flexion—actions minimally relevant to our consciousness. Decisions involving significant matters like investing in a company or resigning from a position are less likely subconscious and cannot be adequately explained by 'readiness potential.

According to a report, Uri Maoz's 2019 study examined whether readiness potential can be applied to more significant decision-making processes. In this study, participants were tasked with determining which of two nonprofit organizations should receive a $1,000 donation. The control group was also asked to make a choice but was informed that each nonprofit would receive $500 regardless of their selection. While the control group demonstrated readiness potential, the group making meaningful decisions did not exhibit such effects. Thus, although readiness potential is a valid construct,

it does not negate the existence of free will. Moreover, smaller and trivial tasks—such as locking a door with a key—may sometimes indeed lack elements of free will. Nevertheless, significant decisions are governed by our free will. We exercise our free will in moments of importance. Our lives are distinctly ours because we utilize our free will when it truly matters.

Regarding the second part of the question, I contend that no scientific research has provided compelling evidence to negate the existence of free will; therefore, individuals who commit immoral or criminal acts should be held accountable and liable for their actions. Existing legal frameworks already address crimes committed by individuals with psychiatric illnesses through mechanisms such as declaring an accused person not criminally responsible, incarceration & hospitalization, and commitment to mental health facilities for indeterminate periods. The objective is to balance the patient's right to treatment with the court's obligation to ensure public safety. Should it be determined in the future that certain immoral actions are attributable to abnormal brain structures or functions, we must likewise endeavor to balance the patient's right to treatment with our obligation to ensure public safety, taking into account the roles of both the agent's neuro-psychiatric compulsion and their exercise of free will, this would remain unchanged in the context of globalization.

8. We currently have several ethical currents (virtue ethics, utilitarian ethics, deontological ethics following Kant, metaethics). Moral relativism is also strongly represented in the ethical discourse? Which would you prefer for our time of globalisation? Which ethical worldview dominates the Chinese philosophical discourse?

   I categorize normative ethics into theoretical and practical ethics. The issue of whether metaethics holds normative significance is contentious; therefore, I will set it aside in my response. The theories you mentioned—such as virtue ethics, consequentialist/utilitarian ethics, and deontological ethics—constitute general normative theories, which I refer to as theoretical ethics. These theories aim to develop a comprehensive framework of ethical criteria for evaluating human actions as good or bad. Within these frameworks, consequentialist/utilitarian and deontological ethics are directly

related to human actions and represent the two primary ethical theories employed in bioethics and the ethics of science and technology. However, as Kurt Gödel noted, any system of theory is inherently incomplete. Consequentialist/utilitarian ethics emphasizes an essential value: the consequences of action that must be considered in decision-making processes. Nevertheless, we cannot solely focus on action consequences while disregarding our obligations. Similarly, deontological ethics highlights another crucial value: obligations (such as respect for persons) that must also be factored into decision-making processes; yet we cannot ignore the consequences of those actions either. Some proponents of both consequentialist/utilitarianism and deontology acknowledge their respective theories' limitations and attempt to address them through rule-consequentialism and Ross's version of deontological ethics; however, these approaches contain inherent contradictions indicative of not ideal theories. In integrating both values—the consequences of action and obligations—bioethics and the ethics of science and technology must establish a foundational set of principles that incorporate both values effectively. Consequently, within this foundational framework there principles such as non-maleficence/beneficence, well-being, respect for persons, justice, humane treatment of animals and the environment, solidarity and other pertinent values are incorporated into.

Another aspect of normative ethics is practical ethics, often referred to as "applied ethics". I prefer the term "practical ethics", which emphasizes our focus on identifying, analyzing, and addressing ethical issues in the practices across various fields. The designation "applied ethics" may convey a misleading implication that the application is deducing the conclusion solely from a theory which is incomplete. The resolution of ethical issues closely associated with decision-making and action-taking does not depend on deduction from a singular ethical theory but rather involves weighing different values. In domains such as bioethics and the ethics of science and technology, relevant ethicists assist scientists, physicians, public health professionals, technologists, engineers, and regulators in navigating normative issues—specifically substantial ethical issues (what we ought to do) and procedural ethical issues (how we ought to act)—to arrive at decisions or actions that are both good (yielding positive

consequences) and right (fulfilling certain obligations). It is impractical for us to adhere strictly to one theoretical framework; no single theory suffices for addressing the normative issues encountered in practice. As Deng Xiaoping famously stated: 'The cat is good insofar as it catches mice regardless of whether its color is black or white. During an international meeting (in Pakistan) and in a published article, I proposed the thesis of 和而不同 (He Er Bu Tong), which can translate to "Harmonious but not identical". It is impractical to identify a singular ethical theory applying to all countries disregarding social, historical, experiential, and cultural differences. Nevertheless, we should establish a core set of values that all nations commit to—such as beneficence/nonmaleficence, respect for persons, and justice. These values are deeply rooted in Confucian tradition; for instance, Mencius stated that nonmaleficence embodies the art of *ren* (仁), while Xunzi emphasized that individuals possessing *ren* must show respect for others. *Ren* serves as the central tenet of Confucianism: caring for, and doing good to others. While there may be variations in prioritizing these principles—we are often favoring beneficence/nonmaleficence over respect for persons based on our understanding of individual-community relationship—there are also peripheral differences surrounding this core set of values; for example, the role of family in medical decision-making can vary significantly across different cultural contexts or different regions in a same cultural context. This approach enables us to avoid ethical relativism and ethical imperialism both.

9. I would also like to ask you about the philosophical foundation of human rights, which have been proclaimed in Paris since the UN Declaration of 1948 (*Universal Declaration of Human* Rights) and have been adopted by many states in their constitutions. Since the "Cairo Declaration on Human Rights in Islam" (1990), Islamic states have presented an Islamic model of universal human rights („All the rights and freedoms stipulated in this Declaration are subject to the Islamic Shari'ah" - Article 24). Do you think that China, because of its different civilisation and tradition, should also present its own model of human rights, which should be an expression of Chinese civilisation? Or do you see things differently

and think that China's model of human rights is in line with the Western model?

The issue of human rights that you raised is of paramount importance and warrants serious scrutiny from us as philosophers. Between 2001 and 2010, I organized five conferences on political philosophy in China with my colleagues under the sponsorship by our Academy and the Ford Foundation. The topics addressed at these conferences included justice, liberty, equality, democracy, rule of law, good governance, and human rights. The collected papers from these conferences have been published in a first volume titled *An Introduction to Political Philosophy* (2016), while the second volume entitled *Special Issues in Political Philosophy* has been postponed due to the COVID-19 pandemic and other challenges; however, it is anticipated to be published this year. In my view, the Islamic model of universal human rights should be both respected and welcomed as it aligns with the principle of "He er bu tong." I emphasize that it "should be respected" because differing interpretations of human rights across cultures reflect the autonomy of people who embrace their own cultural frameworks—regardless of whether we may disagree with their belief systems. Furthermore, the representatives outside Western culture have effectively challenged the liberal model of human rights that many philosophers take for granted. I believe that announcing an Islamic model of human rights would encourage the acceptance of the list of human rights among Islamic communities and promote their implementation within Islamic countries; concurrently, any potential deficiencies within this model may later be identified and improved upon during its practical application by Islamic peoples, communities and countries. Human rights can manifest through various means; for example, helping 100 million individuals alleviate poverty in China stands as one of humanity's greatest achievements concerning human rights globally—yet this was accomplished not under a banner proclaiming human rights but rather through the guidance provided by Chairman Mao and President Xu. Similarly, Islamic peoples may exercise their human rights under Allah's directives. Ultimately significant is how people enact their own human rights; noble objectives can indeed be achieved through diverse pathways.

Due to length constraints, I cannot provide a detailed account of human rights. However, I would like to make several key points:

(1) The list of human rights articulated in the UN Declaration represents an ideal for human life across all nations, informed by the lessons learned from Nazi rule. This framework emerged as a result of seeking common ground while respecting differences among countries after World War II, encompassing Western European and American nations alongside numerous Asian, African, and Latin American countries. It does not imply that the concept of human rights is synonymous with the dominant liberal model or its applications which emerged in the West. Furthermore, it is unrealistic to expect all countries—each at different stages of economic development and possessing diverse cultural values—to achieve these ideals uniformly within a short time frame or in a same way. Even in the most developed countries there are also serious human rights issues affecting indigenous peoples, minority groups, disadvantaged women, homeless people, and other vulnerable populations.

(2) Many conceptual issues remain inadequately addressed. What do "human" and "right" mean in the context of human rights? For instance, what does "human" refer to? Is it merely a member of *Homo sapiens* or does it denote a "modern person" shaped by historical movements such as Reformation, Renaissance, Enlightenment, and Industrial Revolution? How can specific human rights that arose under particular historical and cultural conditions in Europe possess universal applicability when promoted in societies with distinct histories and cultures? Even if we consider "human" as referring to members of *Homo sapiens* species broadly; how can these rights be relevant for primitive cave dwellers or tribal people in deep Amazon forests living under entirely different social conditions? If we define it as pertaining to "modern person"—given that nearly all capitalist societies or societies that utilize capital to industrialize (such as China, in a less degree) generate stark inequalities between rich and poor—how can those listed rights be equally enjoyed by every societal member?

(3) The UN list of human rights reflects consensus among countries with varying histories and cultures; thus requiring them to share

identical foundations is problematic—a form of foundationalism. Different nations may accept human rights based on differing foundations.

(4) The liberal model of human rights prevalent in Western contexts arises from specific historical circumstances; therefore it should serve only as a reference for Asian, African, and Latin American countries with their unique backgrounds rather than being imposed universally upon disparate nations—a requirement lacking ethical justification.

(5) Within the UN list of human rights may exist conflicts depending on contextual factors. Each country retains both the right and authority to prioritize certain listed human rights over others—including those not explicitly mentioned in the list—and this prioritization will vary from one nation to another.

(6) Is "human rights" primarily understood as a legal concept, a moral principle or political ideology? What distinguishes "human" rights from ordinary ones (these rights are human too), and why has "human" rights become akin to a trump card used strategically like playing cards? Why have Western powers consistently exploited this "trump card" politically/ideologically for intervening into independent states' internal affairs while simultaneously expanding their hegemony—even amidst glaring domestic violations? Notably, every intervening states has been historically colonialists whilst most affected are developing or/and once colonized states—is this simply an extension thereof? Interventions often yield catastrophic outcomes resulting the death of millions of people and humanitarian catastrophes without alleviating existing local challenges in human rights, but rather exacerbating them further, since genuine resolution necessitates collaboration amongst citizens, civil society & government within each nation itself.

(7) Increasingly evident double standards regarding adherence towards human rights held by western powers raises questions about inherent deficits embedded within the liberal model itself.

(8) How might United Nations reconcile apparent tension between the commitment made towards "supremacy" of human rights versus the principle advocating non-interference into sovereign matters abroad? Historical evidence suggests harms inflicted through external meddling far exceed any potential violations

occurring internally. It saddens me greatly seeing esteemed scholars such Rawls/Raz justifying interventions in the internal affairs of another country undertaken under the guise of safeguarding human rights. In reality, such interventions often revive the infamous thesis that 'might makes right.' Powerful nations have historically intervened in weaker countries under the pretext of safeguarding human rights. However, could these weaker nations justify intervention against a powerful country when fundamental human rights—such as personal safety—are threatened by issues like gun violence? I contend that no nation possesses both the willingness and capability to undertake such action.

10. You were a very active member of the IIP, unlike other colleagues who have emeritus status. How do you rate the IIP's international activity? Is the IIP still too Eurocentric? American colleagues, apart from the recently deceased Charles Parsons, were not active. Do you think that the number of Chinese members in the IIP should be increased?

    I hope that the annual meeting of IIP would be more focused on philosophical (including ethical) issues in the real world, rather than issues in a Platonic idea world or formalized world. American colleagues, as I know in the communication, are more interested in philosophical issues in the real world. Professor Hintikka encouraged me to recommend more Chinese members into IIP, eventually I only successfully recommend one, Professor Chen Bo. The problem is that Chinese colleagues are not interested in publish their papers in English. I wish I could be able to make efforts further.

11. You have a fascinating academic biography and bibliography, you have a long life with many political turbulences behind you, among Chinese colleagues you are an academic authority. Do you have a recipe or a formula for success that you could offer others? What role do you think philosophy should play in the age of globalisation?

    I do not believe there is a universal recipe or formula for living a relatively healthy and long life applicable to everyone. In fact, I often reflect on what I should do to improve my own life. It is unexpected that I have a longevity while maintaining normal physical and intellectual capacities. I may have genetic predispositions that make me vulnerable to gastrointestinal cancers—conditions that claimed the

lives of my father, mother, and an uncle. However, I attribute some of my wellbeing to my lifestyle choices, which include limited red meat consumption (but elderly still needs sufficient proteins) and increased intake of vegetables, fruits, nuts, as well as regular exercise; currently, I walk between 3,000 and 5,000 steps a day.

One crucial aspect is that older adults should continue engaging in both physical and intellectual activities. This includes reading and writing as well as performing household chores. In my childhood, I was a shy boy; however, after enduring a number of hardships and tribulations over the years, I became not only willing but also adept at articulating my thoughts on policy issues and concerns that affect ordinary people.

I maintain a public account on WeChat titled *Bioethics Review*, where I publish blogs addressing topics related to bioethics and ethics of science and technology, the readers are philosophers or ethicists, workers in science and technology, regulators, graduate students in the fields of the humanities and social sciences. Additionally, I contribute columns for a private on-line media such as *Headlines* where I've written about social reform, education, left-behind children, cute stories of cats, films/TV series—even international affairs, the readers are ordinary people.

Generally speaking, I work during the mornings and evenings; after lunch, I take a nap followed by walks in public gardens, historical sites or museums. It's vital to keep oneself engaged, and learn to forget the sufferings brought about by hardships along with personal grievances. By the way, I live with two cats, who understand their mission in accompanying humans. They are very attached to me and needs my affection. They are both cute and intelligent, and I consider them to be my true non-human children.

Currently, I am reading Hubert Dreyfus' book *What AI Still Can't Do*. The text illustrates what we—as philosophers, including those who study European Continental Philosophy—can contribute in this era characterized by emerging technologies. As previously noted, I began my engagement with philosophy driven by the desire to address the sufferings of ordinary people. In the age of globalisation, philosophers must never lose sight of these people—especially the vulnerable—and should actively strive to take actions that alleviate their suffering and improve their human existence. The concern for vulnerable animals and the environment should also be included. This represents a vital step toward meaningfully changing the world.