Biotechnologies to support humanity

By Frederic Cohen

Current scientific research faces many challenges: environmental imperatives, growth needs and the globalization of trade call for new technologies that are developing very rapidly.

To accompany these transformations, public research must focus its efforts around concrete projects that benefit the greatest number, involving the population in the reflection on its real needs, as well as the means to be implemented to satisfy them. The objective of this document is to present projects with a global impact that stimulate the participation of all actors in society. Methods discussed in consultation should encourage strategic partnerships at all political levels of cooperation.

The COVID-19 crisis has shown the importance of health systems in the resilience of our society. The rapid transmission of the virus has revealed certain weaknesses inherent in the nature of the populations covering the territory. With muscle and nervous fatigue, the wear of the joints has been evident and a related prevention is now necessary. This must be exercised at the cognitive level and be placed in correspondence with existing equipment.

An application process of control over the climate, air and sea, confines the vectors of the disease and limits the pandemic. The urban environment has the particularity of providing accesses that can be controlled rationally. The interaction between transport tools dedicated to energy and the means allocated to human mobility must be implemented in synergy in order to save both human and material resources.

The speed of exchanges also leads to bringing research organizations closer together towards a structure that facilitates participation at international level. Employment linked to services is opening up to new networks that are developing transversally and the implementation of public policies must be discussed by as many people as possible up to the local level, in a supervised and participatory manner.

1. Energy transition, building renovation and infrastructure management

1.1 The living model interacting in urban planning

Human beings can describe themselves schematically as consisting of their skin, bones and muscles. Ergonomics studies on postures have shown the existence of different frames, with particular joints and movements specific to individuals.

The goal of the transition is to keep a complete posture that is straight, that includes the necessary flexibility for the joints, and relieves muscle effort. The symptoms of fatigue encountered on first approach and to be compensated for are those of the camber of the back, the knock-kneed or crow's feet and low shoulders or heavy arms.

The water distribution network and the ventilation of buildings generate a propagation energy that can be usefully developed in support of human mobility. Just as it is more difficult to swim against the current, vibrations in pipes accompany and support human mobility to make tasks easier and less burdensome, such as climbing stairs. The currents produced in the air by the vibrations of materials support the moving body.

Pressure sensors, within complex hydraulic systems of both living and artificial, exchange information that requires coordinated regulation. The hydraulic system, rather than other energy distribution systems included in the urban space, has the advantage of being located in power scales in relation to those of living beings and of offering margins of control adapted to change. It is noted that the presence of air extractors facilitates the fluidity of movements and interactions with the environment. Resonance with the road network also has an influence that can be measured.

If we represent a repetitive movement such as walking in a corridor in the form of a wave function approximated by its limited development, we can assimilate standing to development to order 0, the joints of the limbs at intermediate levels to order 1 and so on up to the phalanges of the toes and improving the accuracy we arrive at the nerve endings or blood vessels. The complex water distribution network makes the system adaptable in beam concentration and allows variable measurements of the quantities to be observed.

Many applications are possible, telepathic communication, telekinetic haptics, regenerative medicine. For example, an experiment shows that it is possible to stimulate the stem cells of the gum so that they start producing enamel for the teeth as during their formation, by means of a phosphorus gel [1,2]. If it is possible to imitate the quantum signature of such a phosphorus molecule by reproducing the vibrations of its surface electronic layer and taking into account the interactions inside the molecule, the electromagnetic signal emitted dispenses with the use of a real phosphorus molecule. We can also understand the interaction of a phosphorus molecule with the stem cells of the gum according to a mechanical key-lock model. The contact of these two elements creates a new conformation to the whole by performing a pressure that releases the ions of the vesicles responsible for the bio-signal and triggers a series of reactions that can cause the tooth to produce enamel again. Infrasound acoustics happens to be an interesting alternative to electromagnetism in vibrations useful to be produced in biochemistry, by engaging pressures of the shape of molecules induced in reagents.

1.2 History of the field of activity and judicial cases in France

Towards the end of the 1990s, the Compagnie Générale des Eaux was transformed into Vivendi under the impetus of a French businessman, Jean-Marie Messier. He considers the pipe device as cables for information [3] that he intends to modulate at his convenience, creating virtual artistic personalities. The aquatic organ that this ensemble represents, leads it to bring this company closer to Universal Music, including in passing, Havas, Canal+ and SFR, and taking advantage of what is then called "the internet bubble". The conglomerate is evolving by suffering accusations of espionage, in repetition of the Water Gate affair, and poisoning when the public

evokes joint blockages or even cancers. He is condemned for manipulating stock market prices when his company presents a superfluous optimism.

This mode of exchange is still considered very popular, as shown by Nintendo's *Donkey Kong* and *Super Mario Bros* video games, which feature a gorilla and a plumber. Similarly, the *Hero Wars* Facebook app features fights and quests through pressure relationships between characters through complex and trapped infrastructures.

The Cazeneuve [4,5,6] government has also been the subject of an investigation into irregularities in its management of the energy transition and the PIA. Bouygues' participation in road construction then received criticism in traffic maintenance when the simulation of technical supports that were projected into traffic created large fuel-expensive traffic jams. Also the SNCF, which has high-voltage lines and holds a computer heritage with applications in health and administration management, regularly experiences long strikes.

The COVID-19 crisis then prepares to strike and U.S. President Donald Trump declares at the end of 2019 [7] that the pipes are clogged because there are pressure problems in the flushes that no longer evacuate normally. In early 2021, his successor President Joe Biden is preparing a $2000 billion building renovation plan, representing a 50-year investment [8].

Since 2020 the company Vivendi Universal has seen the entry of the participation of one of the BATHX, the giant Tencent for 10% of its capital [9]. Carried by the current, like a boat on the yellow river is today the trend. His neutrality regarding French domestic policy and his strong investment in the market led him to be invited to arbitrate the distribution of energy via water pipes in France.

The Chinese expression 管理 (Guǎnlǐ) which means to manage or administer has the sign 管 (Guǎn) which also represents a pipework. The law or method is expressed by the character 法 (Fǎ) which represents water and earth on a bowl that is rejected. This same character also represents France.

1.3 Social support and prevention of risky behavior

Communicating with the general public requires pedagogy and an important theme for social cohesion is gender equality. The constitution of a secure path that provides stability is accompanied by reliable signage, that is to say that messages transmitted in an infra-verbal way must be taken into account and understood in a way consistent with the speech stated.

The main difficulty of walking is to keep the balance during the movement. The muscular support that mobility services provide must be accompanied by information that allows people to steer themself correctly. Instrumentation specific to the metrology of movements can be set up inside the current equipment.

Group walking, forced labor and alcoholism are all risky situations that require adequate prevention. A person who hides a bad balance is often recognized by a difficulty in expressing

himself on the body, using a language that rather diverts attention to clothes, having a weight that is not considered or poorly taken into account and showing an image put very forward.

Rehabilitation exercises using physiotherapy and psychology conceive the duality of body and mind according to a network that is available in different activities on a dichotomy of this type:

Work	Sensor	Effector
Communication	Signal	Response
Health	Music	Dance
Sport	Game	Effort
Security	Speech	Walking

The fundamental principles in ergonomics mention that the body has a natural asymmetry given the place of the heart which is unique, where other organs are counted in pairs, and its role in the effort. The static balance is therefore based on the left side and the movement must develop starting on the same side to extend up to the right side.

The limit of possible elongation is characterized essentially by the robustness of the materials of the bones and the skin. Less flexibility at the end of a position takes the form of a change of space. This should not be confused with the pseudo-elasticity which is represented as a variability of movement within a space maintained in the same dimensions. Development must demonstrate a cycle of progress in a so-called *step-by-step* process.

A principle of safety reminds us that bad practices are communicated faster than good ones. That is why faulty behavior that could be misinterpreted should never be presented to the general public. Russia has already expressed interest in information weapons that use artificial intelligence to destabilize and disrupt the population. They disturb the balance, perception and understanding of specific individuals or popular masses, adding harassment and creating jostling. They target primarily political decision-makers but also the military and infrastructure [10,11]. China demonstrates a similar approach in its research and is keen to dominate the competition in this area [12,13].

Some educational activities involve coordination in an assisted approach [14]. This is the case of video games that associate sight with touch by representing space in complex perspectives to be pixelated.

This is also the case with some stereoscopic sound systems that help define space in all its dimensions, marking the rhythm by probing in all directions and focusing partial auditory acoustic beams. Indeed, some emissions are absorbed by the materials that make up the environment, others are reflected or received after diffraction. In all cases it is the air pressure that gives an indication of the position performed.

2. Geospatial information applied to the air and energy domains

With development in space, 5G brings the opportunity to open up the cloud to a greater number of players.

The private sector in the US is involved in commercial activities in tourism and telecommunications, but China invokes the authority of the state. While it launched its last to shape its space program, it was able to quickly catch up, benefiting from its power of influence at the political level to obtain from Russia the transfer of technology necessary for its development and while it had abandoned the work in frontier research in this field.

This strategic alliance between two permanent members of the UN Security Council, which have already concluded a pact of good neighborliness and friendly cooperation, has consequences for the whole world. The dynamic it induces is leading Europe and the United States towards more scientific and political exchanges. The arms race recognizes its leadership and coordination beneficial to all developing countries. Thus, the Silk Belt and Roads initiative at the terrestrial, polar and digital levels is supported by many UN Member States.

China's technological involvement makes it a major player in the space partnership negotiations being discussed at the UN. The main regulatory bodies are the International Telecommunication Union for the hardware model and the Internet Governance Forum at the Department of Economic and Social Affairs, whose attention focuses mainly on technological and scientific monitoring topics.

The satellite network has an important plasticity, by the replicability of its elements and allows new agreements to be formed, renewing partnerships or opening them to new actors. The guarantee of international law defended under the auspices of the United Nations provides the necessary legitimacy for the decisions taken by the participants.

2.1 UN STATS presents the modeling platform ARIES for SEEA

Environmental engagement is a predominant issue in discussions at the UN and digital applications for health are numerous. The COVID-19 crisis has shown the need to develop an E-Government capable of connecting states to each other and helping them in their communication effort with populations.

Crowdsourcing provides an important part of the data used by independent researchers and their networks. The distribution of information is carried out by mobile applications or on the websites that host them and present them in their portal. Sources that are verified and analyzed must show information that is secure, fast, editable, scalable, and customizable to a particular environment within a framework that is standardized and integrated.

The United Nations Statistical Commission (UN STATS) [15] project artificial intelligence for environment & sustainability for the system of environmental-economic accounting (ARIES for SEEA) provides a relevant database on environmental quality and partnership in the cloud.

Radar technology applied from space, modeled on mass spectroscopy, provides statistical information on digitized data samples from the environment [16]. They are compared by calibrating the measured quantities taking into account their ferroelectricity and hysteresis cycle.

The conversion of analytical signals in a complex system such as the space satellite network brings significant variability to the systems studied. They are then modeled as single crystals of different structures which are matched by sampling the signals emitted. We then sort the data obtained by the digitization that is made of them and the available quantification algorithms offer great possibilities for intervention.

It would therefore be possible to modify the air quality by making better use of the quantum interference of chemical reactions which would then be more diversified, sometimes including an energy input.

More simply, the materials that make up the air could also be attracted more quickly to other sets existing in the ecosystem with which they could react. Shifting the concentration of carbon monoxide from cities to forests and replacing it with the oxygen produced by trees increases the ability of our ecosystem to regenerate.

A particular research has presented itself, to the call of a certain type of population that has characteristic biomarkers because they produce proteins in the form of elastic rings interlaced [17,18]. This allows them to develop remarkable muscle power. They are historically related to the ancient peoples of the Huns (匈奴 *Xiōngnú* in Chinese) and their leader Attila (阿提拉 *Ātílā* in Chinese) who had conquered a large area in Eurasia and established many Khanates. Today the Shanghai Cooperation Organization (SCO) which extends over a comparable area recalls the historical ties between the peoples of Central Asia [19,20].

Thus, we can detect for example the presence of COVID-19 in the air but also other elements that make up the atmosphere or the oceans, define climate change, or characterize biodiversity. There are many applications, especially in advanced or precision agriculture, because the information system could indicate the content of nutrients in the air around a plantation, which would lead a farmer to adapt his contribution.

Since the will of states has been widely expressed at the political level on this subject, global regulatory actors in China and Europe are regularly coming together to facilitate breakthroughs in the field of research for environmental control.

2.2 A space solar power plant for wireless power on Earth

There are many areas of application of technology in space. If its use in telecommunications is now well understood and taken into account, there is still an important development to be

achieved in the control of the climate. Similarly, wireless power distribution is an opportunity to be exploited.

With ArianeGroup and GeoTracker, the French and European space hub of Les Mureaux, France already uses in space foraging satellites [21], which share energy as they exchange information. Most of them use solar sails and the energy conversion is done autonomously on these devices. Their signal scanning model provides the necessary adaptability for the cubes to perform these different operations.

The Federal Communication Commission of the United States approved on December 26, 2017 the first true wireless charger [22]. Companies Nokia, Motorola, Texas Instruments and many others are developing research on what is called Qi technology [23]. Sony was also able to show prototypes of phones that could charge each other wirelessly.

Current research thus shows a technology based on electromagnetic induction. Other versions that use magnetic resonance, however, offer a greater range for exchanges, as well as larger power scales. In all cases, the transmitted waves are able to stimulate an accumulator that converts the radio signals emitted into electricity. The standardization required for connector compatibility is still under development.

Also, The Chinese researcher Wang Li of the Chinese Academy of Space Technology announced during the sixth China-Russia Engineering Forum in Xiamen in the province of Fujian (south-east), the availability of an electricity service from a space solar power plant, a real energy farm for the world, by 2035. Many joint appeals have since been made in this direction [24].

The idea had been popularized by science fiction author Isaac Asimov in 1941. In 1968, the American aerospace engineer Peter Glaser drafted an official proposal in this direction. China listed solar space energy as a key research program in 2008 and has since proposed various solar capture solutions and demonstrated significant advances in wireless power transmission.

Germany and Europe stress the importance of such an opportunity, which takes into account environmental issues, the ecological impact of fossil fuels and the nuclear sector, while its deterrent effect is eroding in a long-term vision of global change.

Space presents an inexhaustible reserve of solar energy that has yet to be exploited in a consumer service. Satellite space coverage is a network of devices that can provide information and energy. The modulation of amplitudes and frequencies makes it possible to achieve this conversion in both directions. Algorithms that are not yet discovered today should experience a particular development in the coming years.

2.3 A defense system against depleted uranium munitions

The Russian Armata-type tank showed a new defense system called Afghanit capable of eliminating repeated anti-armor missiles with depleted uranium. This active protection system comprises radars with phase-controlled network antennas, a device composed of digital subsystems [25].

This device opens up new perspectives in the search for radiation defense. The radioactive particle traps used in the tokamaks could be installed on another scale to defend the territory. The equipment existing in space can be programmed in a variable way, using terrestrial relays, so as to capture harmful emissions, deflect the trajectory of particles, cancel the energy of vibrations.

To function, these algorithms need to know the waves produced during the explosion of a uranium nucleus, and then to calculate an appropriate modulation to neutralize radioactive weapons. The composition of the signals includes a state superposition for wavefunctions opposed to radiation from nuclear bombs and anticipates its environmental impact by imposing a wave sheath on these emissions.

Research in nuclear physics has already shown materials for the confinement of high-energy particles. These can find other uses and be installed on flight aircraft or to make the shells of tanks, for example. The transmission of this data for space is an expected continuation of this research at the global level and can be reused in many different ways to defend the planet.

Non-proliferation is also a solution for Africa, whose subsoil would be better respected, while many countries are abusively looking for uranium on that continent.

References :

[1] Self-healing gel developed in China, 02/09/2019, Sputnik France

[2] These stem cells that naturally repair our teeth, 05/03/2015, Futura-Sciences

[3] Jean-Marie Messier#Vivendi, Wikipédia

[4] Cazeneuve, Le Drian and Royal suspected of budgetary irregularities, 25/01/2017, 20 Minutes

[5] Bernard Cazeneuve, Jean-Yves Le Drian and Ségolène Royal suspected of budget irregularities 01/26/207 RT France

[6] Xi Jinping envoie une lettre de félicitations à la Conférence judiciaire mondiale sur l'environnement, 26/05/2021, RCI

[7] Donald Trump has a new anti-green fight: the toilet flushes 12/09/019 The HuffPost

[8] Biden proposes an investment plan that America will remember "in 50 years" 04/01/2021 RFI

[9] Vivendi has signed its agreement with Tencent, which takes 10% of UMG 12/31/2019 Les Echos

[10] Genetics and geophysics at the service of the weapons of the future? 02/10/2015, Sputnik France

[11] The tests of a "Russian hallucinatory weapon" captured on video 03/10/2019 Sputnik international

[12] Chinese Foreign Minister stresses importance of stable Sino-Russian relations in turbulent world 12/23/2020 RCI

[13] China uses microwave secret weapon on Indian soldiers 11/18/2020 Cnews

[14] The French intelligence service (DGSE) wants to monitor exchanges between WoW players, 07/01/2019, JudgeHype

[15] Artificial intelligence saving the natural world, UN DESA

[16] Launch in China of the H2, both smartphone and food scanner, 02/20/2017, Sciences et Avenir

[17] Jean-Pierre Sauvage, Nobel Prize for molecular machines, 05/10/2016, CNRS Le Journal

[18] In chemistry, the 2016 Nobel Prize goes to molecular machines, 05/10/2016, La Recherche

[19] China unveils top ten scientific breakthroughs for 2020, 28/02/2021, RCI

[20] A latent conflict between China and Mongolia leads to the postponement ... of an exhibition on Genghis Khan in Nantes, 13/10/2020, Breizh Info

[21] France wants to protect itself against spy satellites, 12/15/2017, RFI

[22] The first true wireless and contactless charger now exists, 12/28/2017, France 24

[23] File: All you need to know about Qi wireless charging technology, 04/17/2013, FrAndroid

[24] China to build space solar power plant by 2035, 12/02/2019, RCI

[25] Depleted uranium munitions no longer scare the Russian Armata tank, 22/09/2016, Sputnik France