Human Rights and Sustainable Development Goals in the Global Governance of New Technologies for Human Health

Derechos Humanos y Objetivos de Desarrollo Sostenible en la Gobernanza Mundial de Nuevas Tecnologías para la Salud Humana

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Abstract

This article focuses on the role of Human Rights (HR) and Sustainable Development Goals (SDGS) in the global governance of new technologies for human health. The first part addresses governance: the process of governing different issues of collective life, including multiple actors and means. The second part discusses the global governance of new technologies: the need, the feasibility and what it should look like. The third part reflects on the global governance of new technologies for human health, analysing the recent WHO plans for global governance of human genome editing and artificial intelligence for health. It concludes that good procedure is insufficient for good governance;

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ethical content is crucial. Special attention to the role of HR and SDGs is recommended. Proactive ethics is proposed throughout the whole process (conceptualisation, design, development, distribution, and use) of new technologies, which requires ethical education for the different stakeholders.

1. Introduction

Global governance of human health is both urgently needed and hard. Two examples are the case of destroyed anti-viral vaccines in Nigeria and the case of devices such as Lumen to monitor metabolism.

It was clear from the start of the COVID-19 that international cooperation was crucial to deal effectively with pandemics. When vaccines became available, countries and international organisations even foresaw the need for vaccine donations to poorer countries. However, in December 2021, Nigeria, Africa's most populous country and one of the continent's laggards in coronavirus vaccination (only 3% of the Nigerian population had received the two doses of COVID-19 vaccine), announced that it would destroy one million doses. Health Minister Osagie Ehanire explained that the donated vaccines arrived in the country only weeks before they were due to expire, leaving little time for transport, distribution and delivery in a health system that was already far from adequate. Following this episode, the government said the expired vaccines would be destroyed, and the country politely rejects all donations of vaccines that have little time left before expiry or those that cannot be delivered on time. Nigeria's case was not isolated. As early as July 2021, the World Health Organisation (WHO) reported that some 450,000 doses had expired in eight African countries before they could be administered due to their short shelf life. And the issue of timing is not the only

problem. Some African countries require these doses to be shipped with additional essential supplies, such as syringes (1).[1]

As for the second case, Lumen is a device that has recently started to be sold on the internet. It tracks metabolism, sleep, nutrition, and fitness data with a simple daily breath. The idea is to help people "take control" of their metabolism. Based on this metabolic data, Lumen provides on the connected phone a personalised daily nutrition plan, as well as other actionable insights on sleep, workouts and meal timing.(Cf. 3) Technologies like this one have the potential to help people and improve their health. Soon there will be competition between similar companies for more customers and access to their biometric data. Lumen is just one example. There are many IOB technologies.

> Within this broader Internet of Things (IOT) lies a growing industry of devices that monitor the human body, collect health and other personal information, and transmit that data over the internet. We refer to these emerging technologies and the data they collect as the Internet of Bodies (IOB) (…) IOB devices come in many forms. Some are already in wide use, such as wristwatch fitness monitors or pacemakers that transmit data about a patient's heart directly to a cardiologist. Other products that are under development or newly on the market may be less familiar, such as ingestible products that collect and send information on a person's gut, microchip implants, brain stimulation devices, and internet-connected toilets.(4)

Phenomena such as medical and reproductive tourism already pose a challenge to good and effective global health governance and highlight the inequality and diversity of laws across countries. And the future seems to hold more challenges, especially given the new technologies that are easily accessible and sold over the internet to people all over the world.

As we can see, the first case is about preventing a global pandemic. The second concerns the self-monitoring of individuals' metabo-

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[1] More information about vaccine inequality can be found on the UN vaccine dashboard (2).

lism and the amount of biometric data that is created, stored, and shared, regardless of country of origin. Both cases have in common the urgent need for good global health governance and the challenges to making it happen.

2. Global governance

Firstly, it is important to clarify the concept of governance and consider its multiple stakeholders and means. The word governance comes from the Greek (*kubernáo* means *to steer*). Governance with the meaning of the process of governing has been used in different texts such as the book *The Governance Of England* by Charles Plummer, published in 1885. However, the word has become popular in political, social, economic, and ethical discourses in the 1990s (5).

In its current meaning, governance can be defined as:

> (…) the process of governing, by formal or informal bodies, including governments; in different frameworks, including hierarchy, market, and network; through different measures, including laws, regulations, norms, money, communication, or exchanges; and over different sorts of aspects of collective human life (5).

It should be noted that, as a governance process, governance is much more than government and laws. It includes many other stakeholders and means. It engages governments but considers other stakeholders such as the market and networks. To be efficient, governance must pay attention to the dynamics of corporations, NGOs, organizations, religious bodies, media, pressure groups, lobbyists, coalitions, civil society actors, activists, and other formal and nonformal role-players (6).

Governance certainly includes laws and regulations, but it also takes into account the key role played by capital, communications, agreements, and exchanges. According to UNESCO: *in a broad sense, governance is about the culture and institutional environment in which citizens*

and stakeholders interact among themselves and participate in public affairs (7). Therefore, governance can be subtle and sometimes not easily observable (7).

Governance exists at the regional, national, or international level. At the latter level, the way in which different actors exercise different types of power to manage various issues is called *global governance* (5). Affairs such as migration, money laundering, terrorism and bioterrorism, pandemics, loss of biodiversity, climate change and genocide go beyond the capacities of individual states to solve (8). These worldwide problems are indeed *problems without passports*, using the expression by former UN secretary-general Kofi Annan (8).

3. Global governance of new technologies

In this second part, we will consider new technologies as a global governance issue. The first step is to check whether this is a global issue. The second is to ask whether international regulation is sufficient. If not, a global governance approach is needed. In this case, the two questions would be: is global governance of new technologies possible? If so, what should good global governance of new technologies look like?

The first step: is the management of new technologies a global issue? Few things are local in a globalised world. This is especially true for knowledge and technology. French chemist and microbiologist Louis Pasteur once said: *La science n'a pas de patrie, parce que le savoir est le patrimoine de l'humanité* (Science has no homeland because knowledge is the heritage of humanity) (9). Some technologies especially tend to be borderless. New technologies might start local and even as a luxury property, but in a relatively short time, it tends to become cheaper and easily available.[2] However, it should be noted that the

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[2] It was the case for eyeglasses, electricity, television, flights, mobiles. For instance, in 2009, twenty-two years after the invention of mobiles, half the world's population already had a personal mobile phone. Half of Africa's one billion people owned a

international presence of new technologies, far from signifying equality, may reflect the problem of inequality that is present across the globe.[3]

In the second step, having recognised that the management of new technologies is a matter of global governance, let us now consider whether international regulation is sufficient to regulate their proper use. To begin with, it is extremely difficult, if not impossible, for international regulations to keep up with the speed of recent inventions. While many existing international regulations apply to new technologies,[4] they should be updated and improved. It has also been suggested that the lack of coherence of some regulations makes it difficult for them to play their key role in effective technology governance (12). However, even in the case of good international laws, experience shows that regulations are certainly important but not sufficient to handle the changes new technologies are bringing about in society. To promote coherence and global application of international regulations, a *framework of principles* and better *international cooperation* are needed (12). Thus, international law is an important element, but it needs the broader context of global governance to be effective.

Conscious of the need for global governance of new technologies, we must now ask whether the desired governance of new technologies is possible. Throughout history, some have argued that technology is fundamentally unmanageable and therefore beyond ethical analysis and political oversight. S. Jasanoff groups these ideas into a t*rio of commonly held but flawed beliefs* (11):

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mobile phone. India's mobile subscribers were almost half of the country in 2010, according to a UN report. Shockingly, in India there were more people who had mobiles than people who had access to proper sanitation facilities, said the report; only about 366 million Indians had a toilet (10).

[3] Technologies might make inequality visible in their design, development, distribution or/and use. They show the different needs, priorities, values, and preferred ways to proceed that exist among different human groups. So, inequality refers to much more than only access to technology (11).

[4] A list of regulations classified by areas of arms control, health and disease control, environmental protection, trade, drugs control, development, social and ethical impacts can be found at reference 12.

- Technological determinism: technology shapes and drives the course of history, therefore, the human role is not expected to be active and protagonist.
- Technocracy: only experts have the competence to govern the advance of technology, so there is no need for a broader concept such as governance.
- Unintended consequences: the damage caused by technology is beyond intention or foresight and therefore not under human control (11).

Jasanoff notes that these beliefs *long impeded systematic thinking about the governance of technology* (11). But because technology is created by an intelligent and free being, it is subject to ethical analysis, like any truly human action. And, if a particular technology becomes a global issue, it is also subject to global governance.

Moreover, if governance is the broad reality presented at the beginning of this paper, we can assume that new and globally relevant technologies will be a matter of governance anyway. The most passive act of governance imaginable —doing nothing about something— would already be a decision with its consequences that plays a role in the governance of technologies. So, the ultimate question is not *whether* governance of new technologies should be or not, but *how* it should be. What makes governance *good*?

According to UNESCO, *good governance is expected to be participatory, transparent, accountable, effective and equitable and promotes rule of law* (7). And according to WHO, in its recent report on Global Governance of Human Genome Editing, good governance is an *iterative, ongoing process that includes mechanisms for regular revision in light of technical, practical and ethical developments and changes in societal views and values. Ideally, good governance is proactive, not only reactive* (13). It should be conducted in a transparent and inclusive manner and should hold policymakers accountable. It should engage and empower experts and the public. Finally, good governance should be value-based and principle-driven (13).

It is certainly desirable that all characteristics enlisted above are considered in global governance. However, a good governance process does not ensure good governance. Most of the characteristics described above are related to procedures, except for *value-based and principle-driven* (13), which appears in 2021 WHO's *Human genome editing: a framework for governance.* In addition to being proactive, inclusive, transparent, open to review and other characteristics of the process, content is critical. Therefore, ethical analysis and its translation into principles are crucial for *good* global governance and they deserve as much or more attention than the characteristics of a good global governance procedure.

As the European Group on Ethics in Science and New Technologies has brilliantly put it:

> Values are baked into everything. This implies that one can neither act, govern, manage and administrate, nor innovate, design and intervene without them. No narrative evolves, no decisions are taken, no advice is given, no technologies are developed without values shaping them, whether consciously or unconsciously, explicitly or implicitly. (…) In fact, all policy making and governance, local and global, is about efforts to find shared guiding values, deliberate and come to a common ground (14).

In the context of global governance of new technologies, the main challenges for ethics are probably:

- achieving international consensus on ethical principles,
- being more proactive.

Achieving consensus on ethical principles can be difficult, as there is no universally accepted ethical theory.

> Regardless of whether reasoning begins with theories grounded in utilitarian consequentialism or deontology or virtue ethics, there has emerged over time what some deem "reflective equilibrium." This concept encompasses the use of both inductive and deductive reasoning, incorporating both theory and case-based casuistry, and ac-

cepting the need for reasoning that is understandable to the public, regardless of individual spiritual or religious orientation. It has helped shape influential statements and guidance documents across the globe (9).

It is a delicate and lengthy process. However, efforts to achieve consensus on principles such as human rights have subsequently shaped mindsets around the world and contributed to the acceptance of the use of these concepts and vocabulary in other declarations, regulations, and reports.[5] Achieving international consensus on ethical principles for the global governance of new technologies is, therefore, a necessary and worthwhile challenge.

The challenge to be more proactive is crucial for ethics today. There is a risk that ethics assumes only the role of the voice that says what cannot be done. Ethics is also called to point out ethical paths and help in the creation of proposals of how something can be done in a good and better way for all. It means moving from a comfort zone that just points out the problems, to an approach that goes beyond. Ethics can and should illuminate creativity and seek solutions in a constructive way, hopefully to the point of inspiring new inventions.

The European Group on Ethics in Science and New Technologies recently said that ethics must be ambitious, proactive, and daring. It must ask the hard, painful, or tedious questions. Its aim is not to make decisions 'a bit more ethical' without addressing the larger political, social, and economic factors that give rise to the institutions and processes in the first place. Ethics must address the foundations of the practices and institutions that are responsible

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[5] For example, in the field of gene-editing technologies, see the influence of the Universal Declaration of Human Rights 1948 on the Universal Declaration on the Human Genome and Human Rights 1997 (15), Universal Declaration on Bioethics and Human Rights 2005 (16), national and international governance documents and reports arriving to WHO Human Genome Editing: a framework for governance 2021 (13). In the field of AI, UDHR 1948 influenced Ethics and Governance of Artificial Intelligence for health 2021 (17), and Recommendation on the Ethics of Artificial Intelligence 2022 (18).

for the phenomena that it considers to be problematic (14). Only with a profound and courageous analysis, ethics will be able to become proactive and able to make proposals.

The risk of misuse does not necessarily mean that a particular tool should not be used. Fear and caution may indeed help humanity find ways to avoid real dangers, but it is not the same as not acting at all. The potential benefits of new technologies must be considered, and the potential risks recognised and mitigated. *There is simply no way to unlearn this new knowledge* (19), said the CRISPR-Cas9 co-inventor, referring to this gene-editing technology. A phrase that can be applied to any discovery or invention. But we must also remember that:

> 'knowledge is always positive but its application may not be', when faced with the whole range of new technological possibilities, we should proceed by only applying that knowledge in the right way (an essentially ethical statement) (20).

Society must choose to proceed in such a way that technological advances bring the greatest possible benefits at the lowest possible cost. This risk-benefit approach is not about mere economic or utilitarian factors, but values, rights, and duties, reflecting the kind of society we want to build up. New technologies should improve lives, and never at the expense of others. Neither at the expense of the values we cherish most as humanity, nor at the expense of important resolutions that took the nations many years, dialogues, and efforts to converge upon, such as Human Rights (HR) (21)[6] and Sustainable Development Goals (SDGs) (23).[7]

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[6] In 1948, for the first time, countries agreed on a list of inalienable human rights (UDHR). In 1966, the UN General Assembly adopted two international treaties on the matter: the International Covenant on Economic Social and Cultural Rights (ICESCR), and the International Covenant on Civil and Political Rights (ICCPR). Together, the UDHR and these two Covenants are known as the International Bill of Human Rights (22).

[7] The 2030 Agenda for Sustainable Development contains the 17 SDGs. It was adopted by all United Nations Member States in 2015, build on decades of work by countries and the UN.

It is not the intention here to reduce the ethical analysis to HR and SDGs, but special attention should be paid to the officially shared values. HR and SDGs are concrete international convergences concerning ethical principles, rights, duties, and sustainable actions, so they serve as reference points for validation and for directing creativity in a globalized world. In addition, it is worth remembering that their value is not in being a global agreement, but in humanity itself. It is the value of the human being that inspired the declaration and goals, and that made it possible for very different nations to converge on them.

As reference points, HR and SGDs must be present at the time of ethical discernment and decision. That includes the time of approval or disapproval of new technologies, but not only. HR and the SDGs must also direct creativity during the design and development of new technologies, and then help to keep them on track during their distribution and use. For example, the typical question regarding a new technology for human health would be: is gene editing against the human right to integrity? If not, it passes the filter of this particular right that must be respected. But other questions should be asked: how can gene editing help preserve and promote human integrity? How will the development, distribution and use of gene editing technologies maintain, restore, and promote human integrity? In this scenario, the human right to integrity is the guiding principle from the beginning and throughout the process, not only in the moment of approval or disapproval. Similar questions can be posed to analyse new technologies using the list of HR and SDGs.

From conceptualisation and design, through development, distribution and use of new technologies, the protection and the promotion of human rights and sustainable development must be at the forefront of the minds of all stakeholders. If they are seen simply as conditions for approval, they could be mistakenly seen as obstacles to technological progress. Indeed, progress cannot be achieved at the expense of human rights. But to view the relationship between new technologies and human rights only as a filter would be reductionist. Human rights and sustainable development can serve as references to technology *for* humanity. Inventions must help man

and the environment, to preserve and promote life, integrally and sustainably.

Concluding this part:

- New technologies for human health are a matter of global governance.
- Such global governance is possible.
- Today, governance refers mainly and almost exclusively to the know-how of global governance. However, a good procedure is not enough for good governance. The ethical content is crucial.
- Challenges for ethics in this context: consensus on principles and being more proactive.
- It is recommended to pay special attention to the role of HR and the SDGs, which should be present from the conceptualisation and directing creativity throughout the design, development, distribution, and use of new technologies.
- New technologies *for* humanity are supposed to help man and the environment, preserving, and promoting life in an integral and sustainable way.

4. Global governance of new technologies for human health

This part considers two global governance plans for new technologies affecting human health. In June 2021, WHO published two important documents: one on the topic of global governance of human genome editing (13), which came along with two other documents: a position paper (24) and recommendations (25); and the other on the topic of global governance of artificial intelligence for human health (17).

In line with the idea set out in this paper, to analyse these two plans for the global governance of technologies affecting human health, we are going to check the procedures and ethical principles.

Taking up the characteristics of good global governance quoted by UNESCO (7), (13) and WHO (13), let us see how these two reports

intended to guide towards a *proactive, ongoing process, with regular revision*; ensuring *participation, transparency and accountability, effectivity, equitability, promoting the rule of law,* being *value-based* and *principle-driven.* Throughout the content of both WHO reports, it is possible to observe that they aim to follow the essential features listed above.

Concerning human genome editing (somatic, germline and heritable gene editing), the corresponding report recognises that the technology goes beyond national borders and has many social effects, acknowledging the need for global action (13). Following the idea of good global governance, the report enlists twelve sets of *tools, institutions and processes* outlining who may need to be involved with the governance of human genome editing. These range from laws and regulations, patents and licenses, research funding, professional self-regulation and the role of professional bodies, to collaboration with publishers and the role of public advocacy and activism (13).

The report presents a set of principles to be considered to inform *how* decisions are made: Openness, Transparency, Honesty and Accountability, Responsible regulatory stewardship, Responsible stewardship of science, and Responsible stewardship of research resources. And a set of principles to inform *what* decisions are made: *Inclusiveness, Caution, Fairness, Social justice, Non-discrimination, Equal moral worth, Respect for persons, Solidarity, and Global health justice* (13). In the end, the report foresees mechanisms for transparency and accountability and asks for a review and update after three years (13).

In the case of the report on the Global Governance of AI for health, and within the context of the COVID-19 pandemic, the report states that:

> governance in health covers a range of steering and rule-making functions of governments and other decision-makers, including international health agencies, for the achievement of national health policy objectives conducive to universal health coverage (17).

It discusses various governance frameworks that are developing or have already matured, such as data governance, control and bene-

fit-sharing, private sector governance, public sector governance, regulatory considerations, the role of a policy observatory and model legislation, and global governance of AI (17).

This report recognises the principles already published for the development and use of AI, as well as some under-represented principles.

> An estimated 100 proposals for AI principles have been published in the past decade, and studies have been conducted to identify which principles are most cited. In one study of mapping and analysis of current principles and guidelines for ethical use of AI, convergence was found on transparency, justice, fairness, non-maleficence and responsibility, while other principles such as privacy, solidarity, human dignity and sustainability were under-represented (17).

Moving forward, the report presents its own list of six ethical principles (17):

- Protecting human autonomy: humans should remain in control of healthcare systems and decisions. It is necessary to ensure that providers have the necessary information to make safe and effective use of AI and that people understand the role it plays in their care. It requires the protection of privacy and valid informed consent.
- Promoting human well-being and safety and the public interest: need to meet the requirements of safety, accuracy and efficacy for well-defined use cases or indications. It requires quality control and quality improvement measures.
- Ensuring transparency, explainability and intelligibility: AI technologies must be intelligible or understandable to developers, medical professionals, patients, users and regulators. It should be explainable according to the capacity of those to whom they are explained.
- Fostering responsibility and accountability: AI should be used under appropriate conditions and by appropriately trained people. The "human warranty" requires the application of

regulatory principles upstream and downstream of the algorithm by establishing points of human supervision.

- Ensuring inclusiveness and equity: encourage the widest possible, appropriate, equitable use and access. In addition, AI systems should be monitored and evaluated to identify disproportionate effects on specific groups of people.
- Promoting AI that is responsive and sustainable: AI should respond adequately and in accordance with what is communicated. It needs to be consistent with the wider promotion of the sustainability of health systems, environments, and workplaces. For example, AI should be designed to minimize its environmental consequences and increase energy efficiency and anticipated disruptions in the workplace, including training for healthcare workers to adapt to the use of AI systems, and potential job losses.

In the end, the report gives five recommendations (17) to different groups, recognizing that Global Governance of AI requires a coordinated action:

- Governments were asked to support the global governance of AI for health to ensure that the development and diffusion of AI technologies are in accordance with the full spectrum of ethical norms, human rights, and legal obligations.
- Global health bodies such as WHO, Gavi, the Vaccines Alliance, the Global Fund to Fight AIDS, Tuberculosis and Malaria, Unitaid and major foundations should ensure their adherence to human rights obligations, legal safeguards, and ethical standards.
- International agencies, such as the Council of Europe, OECD, UNESCO and WHO should develop a common plan to address the ethical challenges and the opportunities of using AI for health.
- Governments and international agencies should engage non-governmental and community organizations, particularly for marginalized groups, to provide diverse insights.

- Civil society should participate in the design and use of AI technologies for health as early as possible.

As for review and updates, the report does not set a specific time, as did the report on human genome editing, but it says that *WHO may consider specific guidance for additional tools and applications and periodically update this guidance to keep pace with this rapidly changing field* (17).

Both reports are important steps for good global governance of technologies that affect human health. In the future, they will probably be updated and improved. But at least now they give frameworks for global governance, in an attempt to be proactive more than reactive. However, the reports are not the global governance *per se*. They are rather plans for global governance. As the WHO expert advisory committee stated, an expert committee *encourages but cannot mandate a coordinated global approach* (13).

To use HR and SDGs as reference points, Table 1 shows the rights and goals directly related to the decision principles presented in the WHO global governance reports for Human Genome editing (HGE) (13) and Artificial Intelligence (AI) (17) for human health.

Table 1. WHO Decision principles, HR and SDGs.

Decision principles	Rights and Duties	Goals
HGE 2021	**UDHR 1948**	**SDGs 2015**
Inclusiveness, Caution, Fairness, Social justice, Non-discrimination, Equal moral worth, Respect for persons, Solidarity, Global health justice	(1) Right to Equality, (2) Freedom from Discrimination, (3) Right to Life, Liberty, Personal Security, (5) Freedom from Torture and Degrading Treatment	(1) No Poverty, (2) Zero Hunger, (3) Good Health and Well-being, (5) Gender Equality, (10) Reduced Inequality
AI 2021	**UDHR 1948**	**SDGs 2015**
Protecting human autonomy	(3) Right to Life, Liberty, Personal Security	

Promoting human well-being and safety and the public interest	(5) Freedom from Torture and Degrading Treatment	(1) No Poverty, (2) Zero Hunger, (3) Good Health and Well-being
Ensuring transparency, explainability and intelligibility		(4) Quality Education
Fostering responsibility and accountability	(6) Right to Recognition as a Person before the Law	(12) Responsible Consumption and Production, (16) Peace, Justice, and Strong Institutions
Ensuring inclusiveness and equity	(1) Right to Equality, (2) Freedom from Discrimination	(5) Gender Equality, (10) Reduced Inequality
Promoting AI that is responsive and sustainable		(6) Clean Water and Sanitation, (7) Affordable and Clean Energy, (8) Decent Work and Economic Growth, (11) Sustainable Cities and Communities, (13) Climate Action

Source: prepared by the author.

Each one of the rights and goals serves as a reference that must be considered throughout the conceptualisation, design, development, distribution and use of these two new technologies.

The WHO reports were published and HGE and AI technologies continue to evolve. Therefore, the answers to how each technique can preserve and promote these rights and objectives may reshape the design of these technologies. For example: How can gene editing be done in a way that passes the filter of the right to (2) non-discrimination? How can gene-editing technology help the right to (2) non-discrimination? What needs to be done for gene editing to keep this right safe and stronger when gene editing is made available to the public? Or regarding AI for human health and one of the SDGs: how to ensure that AI for health does not increase poverty? How can AI help the goal of (1) non-poverty during its development, distribution, and use?

This approach makes the ethical principles more concrete in their application and more useful for the global governance of new

technologies for human health. It also involves the following suggestions:

- To be proactive and anticipate thinking to the onset of new technologies.
- To improve ethics education for the different stakeholders, not only for the policymakers who will approve or disapprove of new technologies, but also for the creators, investors, publishers, and users.

5. Conclusion

This article aimed to analyse the global governance of new technologies for human health. In the beginning, two cases were exposed to show the need for global governance. Then, this paper addressed the concept of global governance as the process of governing matters of worldwide reach, including the multiple stakeholders and means of global governance.

The paper then addressed the global governance of new technologies, the necessity, feasibility and how it should be. It draws attention to the fact that now governance refers mostly to the know-how. However, a good procedure is not enough for good governance. Ethical content is crucial. At the same time, there is awareness of the challenges ethics is dealing with: the difficulty of international consensus on principles and the need to be more propositional. It is recommended to pay more attention to the role of HR and SDGs, both concrete international convergences. Usually, HR and SDGs are reference points at the time of approval or disapproval of new technologies. But, as reference points, they also should be present from the conceptualization and directing creativity throughout the design, development, distribution, and use of new technologies. Technologies *for* humanity are supposed to help man, preserve, and promote life integrally and sustainably. Considering HR and SGDs as reference points is harmonious with this view.

In the last part, the paper focused on the global governance of new technologies for human health including the analysis of the WHO documents on the governance of human genome editing and AI. As suggested, the analysis included the procedure and the ethical principles. HR and SDGs were considered concerning the decision principles given in each of the WHO governance plans, giving examples of some questions that can be used, in the hope of making these principles more concrete and more useful. Finally, this paper suggests proactivity from the start of new technologies and an improved ethics education for the different stakeholders such as inventors, investors, publishers, and users.

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