

## Pests, development and inequalities

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**Abstract** *This article discusses questions concerning the future of humanity in the face of threats to the health of populations, whose impact has been exacerbated in the course of inequalities in all parts of the world, pari passu with global development in the hegemonized model since last century. The COVID-19 pandemic is a good example that illustrates this dissonance between development and inequalities. Questions were formulated to be debated about the construction of the future of world society, based on the understanding of the evolutionary character of life on the planet vis-à-vis the evils that affect large contingents of the population and represent powerful risks for this evolutionary process. These questions call attention to the discussion around social participation in the definition and control of public policies, as opposed to the hegemony of private interests in the formulation and execution of these policies, both in the scenarios of each country and in the international context.*

**Key words** *Development, Evolution, Health and disease, Inequality, Social participation*

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*In the reality of life, things end up with less format, nor do they end. Better that way. Fighting for accuracy is a mistake against us. Don't want to. Living is very dangerous. [...] Living is a reckless pursuit.*  
Guimarães Rosa

## Introduction

This essay discusses some concerns about the future of life on Earth, mixing scientific knowledge, literary references, traditional knowledge, beliefs and values. The intention is to encourage readers from different areas of interest to explore alternatives for preventing, resisting and facing challenges in McLuhan's global village<sup>1</sup>, formulated from the approach of disease as an evolutionary phenomenon of life on Earth.

In *Love in the Time of Cholera*, Gabriel García Márquez<sup>2</sup> tells the saga of a resilient passion during half a century of mismatches and frustrations. Through the admirable lens of fantastic realism, he intersperses this story with memories of the pest that ravaged Cartagena de las Indias, Colombia, at the end of the 19th century. And it is said that when the fullness of that love began, the disease ended.

The coincidence could be interpreted along the lines of the popular belief that "there are evils that come to good" or that "after the storm comes the tranquility", in other words, the hope exercised when suffering spreads sneakily and unexpectedly, with restraint or violence, and leaves indelible marks on the collective conscience, just like pests.

These mentions aim to ask, in a romantic tone: where is love in the times of COVID-19? Can this pandemic motivate the re-signification of the pests that torment humanity? And thus, result in transformations of the painful reality of today into the beneficial reality of tomorrow?

### Which pests?

The term pest encompasses different meanings. The approach adopted here stems from Darwin's understanding<sup>3</sup> of the diversity of life on Earth, interpreting diseases as phenomena that are part of the evolutionary process of all living beings on the planet. Species, including humans, share or compete for resources and means to guarantee and, if possible, extend their permanence in these scenarios, a process that eventually leads to illness or death.

These events constitute evolutionary opportunities, an aspect that will be explored in the course of this essay, starting from Darwin's evolutionary conjecture, which has so far not been refuted, in Popper's sense<sup>4</sup> of the term. The denial of this hypothesis is only categorical among followers of religious beliefs or denialist attitudes towards scientific reason.

Therefore, it is plausible to see diseases as part of this evolution and, by extension, to recognize infectious diseases as exemplary cases of this dynamic of life on Earth.

### Pests in the age of extremes

The period between World War I and the fall of the Berlin Wall was referred to by Hobsbawm<sup>5</sup> as *the Age of Extremes*. However, in the preface to the book, the author admits that: "We do not know what will come next, nor what the second millennium will be like, although we can be sure that it will have been shaped by the brief twentieth century."

In this historical alignment, it is interesting to compare key aspects of the current pandemic with reports of the one that occurred at the end of World War I, nicknamed the Spanish Flu, whose agent was possibly a virus, since at the time it was still impossible to identify these entities; confirmation was much later, based on advanced studies and technologies<sup>6</sup>. The name of the disease had to do with the free dissemination of serious cases in Spain, the only European country that remained neutral in the war and therefore allowed information to be disseminated about the seriousness of the disease and, in particular, a staggering number of deaths. In the other countries, the general hardship aggravated by the disease was not publicized, so as not to expose military weaknesses to the adversaries.

In the period that followed, science and techniques developed at an ever-faster pace, making it possible to identify the agent of the new pest, SARS-COV-2, shortly after the outbreak of the disease, designated by world convention with the acronym COVID-19. In less than a year, it was possible to produce vaccines and shortly afterwards to start scaling up production of this precious resource for containing the disease on a global scale. It is also worth mentioning the fragility or absence of national health systems and international organizations a hundred years ago, in contrast to the availability of these institutional resources today.

It must be recognized that both the identification of the agent and the production of vaccines

against this virus, as well as the improvement of health institutions, resulted from the knowledge and technologies developed in the period between these two pandemics. However, the outbreak and worsening of COVID-19 are just as scandalous as what happened during the Spanish pandemic. One wonders what the war had to do with that event. The current pandemic, which has emerged during a period of the greatest scientific progress and growth in wealth in human history, seems like a macabre celebration as it reveals the association between suffering with the pest and despair with inequalities in this global village. The question must again be asked: are we at war? Who is the enemy?

The knowledge and innovations that would enable preventive measures and containment of the current pandemic phenomenon have not been made available, as a priority, for this purpose. But it has been put to good use by the economic-financial and industrial complex to produce equipment and supplies to be sold at the best price, allegedly under the false samaritanism<sup>7</sup> of collaborating with the effort to combat the disease. An execrable expression of this situation is that even the availability of vaccines was subordinated to this orientation<sup>8</sup>.

We are therefore faced with the association between pest, development and inequality. What is this Siamese link that prevents most of the world's population from accessing the benefits of advances in knowledge and wealth? In the end, who is the enemy in this pandemic – just the virus? And what about inequality? Are we going to wait for the next infectious pandemic to renew our lamentations and continue releasing statements and institutional documents and scientific publications, produced and disseminated on an ever-increasing scale in the age of global communications?

An aggravating factor in this assessment is that it overlooks the long-standing recognition that the benefits of development with regard to infectious diseases must be shared among everyone. Not only under the *aegis* of ethical principles, but also because by not including everyone, as is the case with vaccination, such measures become ineffective or even useless in curbing or controlling these morbid processes. This postulate can be found in the caput of the Constitution of the World Health Organization<sup>9</sup>, approved 75 years ago at the General Assembly of the United Nations (UN): “The results achieved by each State in the promotion and protection of health are of value to all [...]. The inequality of the

various countries in terms of health promotion and disease control, especially communicable diseases, constitutes a common danger.” How can we explain the disregard for these commitments made by the governments of every country in the world?

This disdain for science and the commitments of nations sets up a paradox in the progress of development *vis-à-vis* inequality. But paradoxes are only logical provocations from which it is always possible to escape. In this case, the way out begins with an examination of two key concepts: the first, which sees development as the driving force capable of leading humanity to the enjoyment of increasing well-being; the other, which is based on the belief that the hardships of the present will be overcome with the continuous advance of this development. The next step is to ask: what is this development? The answer would dissolve this paradox by recognizing the collective self-deception established throughout the age of extremes, because the progress underway in the short 20th century, “global development”, has led to a terrible growth in inequalities between peoples. It is, therefore, a collective self-deception, generated by disregarding or neglecting factors that, at the heart of this development, lead to the emergence and worsening of diseases.

The odd coexistence of development and inequality has been dramatically expressed in the Covid-19 pandemic, in the form of afflictions, illnesses and deaths that affect everyone, not just those directly affected by the disease. This is a hindrance that could be largely avoided or mitigated if today's knowledge and technical means were made available for this purpose.

Decisions and measures are usually taken promptly, as warned<sup>10</sup> in the case of Ebola eight years ago, only when these ailments affect the rich world of global development, because there is no point in investing against health problems in poor regions. A similar case is the recent international health emergency declared by the WHO in the face of Monkey Pox, known to be endemic in parts forgotten by global development, which now threatens to affect the world enriched by this type of development.

These concerns sound even more threatening, even though we know a lot about various agents capable of unleashing even more scandalous disorders than those observed during COVID-19, which are localized endemics or health alert episodes that only affect regions far from civilization or neglected by progress, where it is not worth investing against health problems.

It seems that Hobsbawm's era of extremes did not end in the brief 20th century, because "We still don't know what will come next".

### Diseases, alerts and transformations

The future of humanity is worrying in Huxley's<sup>11</sup> prediction, describing a world where everyone is genetically programmed, psychologically conditioned and permanently doped to live in enjoyment, under the control of a power that decides everything. More impressive is Orwell's prediction<sup>12</sup>, when he talks about a place where everyone suffers to a greater or lesser degree, under the heel of an insane, invisible and implacable power. They are, in fact, warnings that foreshadow an era of unhappiness that is sneaking up on humanity, due to the control and, down the line, total domination of knowledge and techniques under regimes that inhibit or eliminate the possibility of their social use, in the sense given to this term by Bourdieu<sup>13</sup>. Situations in which power reigns that can only be explained by and which progressively strengthens itself by disregarding, repressing and finally eliminating the possibility of any individual or collective initiatives that oppose such domination.

It could be interpreted that the authors were referring to a pest of unhappiness and suffering that threatens the future of humanity, given the current course of development under the domination of private interests and the regressive influence of society's aspirations. It would then be appropriate to recall Berlinguer<sup>14</sup>: "[...] since many diseases originate in improper machinery, housing, materials, products, habits, relationships with the environment and social relations, it must become common sense to start from pathological phenomena in order to transform living conditions"; and, further on: "This collective movement for health can be one of the strongest stimuli for changes in those factors that are not only morbid, but also alienating, or that in some way create obstacles to the development of the community".

The idea of the re-signification of pests in the course of COVID-19 was raised at the beginning of this paper, as an opportunity to trigger transformations in humanity's living conditions through changes in the current course of development that engenders the emergence of factors that progressively strengthen the outbreak of pests in this long-lasting phase of the age of extremes in which we live. This understanding results from the comprehension of diseases as biologi-

cal evolution, as pointed out above, associated with social evolution, which is expressed in the transformation of beliefs, values, behaviors and actions. Evolutionary processes that are not predetermined but can be actively pursued to build a less terrible future, by controlling or eliminating the factors that, present in the current phase of globalized development, inexorably contribute to causing disease on a worldwide scale.

### State and public policies

A relevant question deserves attention in this reflective journey: what does the state have to do with the historical evolution of the situation that has currently emerged with the COVID-19 pandemic? There is much to discuss on this issue. However, we will focus here on just a few aspects relating to the participation of national societies as the driving force behind public policy transformations in the international context.

A peculiar trait of the state's nature identifies it as an instance of power disputed by interests of various origins, through processes that often result in the hegemony of tendencies far removed from the aspirations of society as a whole. The state then becomes the hostage of selfish interests that seek to direct the power that it has established for their exclusive benefit. As a result, the state silently or openly connives in supporting economic projects that systematically become "[...] factors that are not only morbid, but also alienating, or that in some way create obstacles to the development of the community"<sup>14</sup>. This connivance is expressed through inertia, inhibitory or repressive measures in the face of social demands that are contrary to or out of line with the dominant interests within the state apparatus.

Hence the motivation to rethink the pandemic as "[...] the possibility of starting from pathological phenomena to transform living conditions"<sup>14</sup>. Transformation that indispensably implies changes in the actions of public authorities. Huxley's foresight or Orwell's foreboding sound like worrying warnings that foreshadow a world where each and every person is deprived of the right to choose or even think about their destiny, unable to participate in the construction of a global village where scientific and technological development is oriented in the direction that would allow everyone to live longer and better.

During the 20th century, progress in science and technology led to extraordinary growth in world wealth. On the other hand, it has resulted in a deepening of the gulf that separates the few

who have almost everything from the majority who have almost nothing<sup>15</sup>. This phenomenon has a clear tendency to exacerbate itself and thus perpetuate the era of extremes throughout the new millennium. It is development that generates progress and accumulates wealth, but also engenders the emergence of morbid factors for a huge contingent of humanity. By causing suffering and increasing the occurrence of illnesses and deaths, should we treat this disharmony as a kind of pest of modernity that amplifies all the others?

These questions raise long-standing concerns about possibilities that point in opposite directions: building the future in solidarity, based on the progress of wealth and well-being founded on the advancement of the sciences and their social uses; or, on the contrary, enduring the nightmare of inequalities resulting from the unfair distribution of the benefits of progress in all parts of the world. These are choices to be made today, so that the pests of tomorrow are not amplified or even caused by the pest of modernity. Not least because, in the current course of global development, the situation of a new pandemic like COVID-19 could take on Dantesque dimensions.

### ***Quo vadis public health?***

Understanding the pandemic as a wake-up call and an opportunity for transformations that lead, in the words of Santos<sup>16</sup>, to “a human globalization”, results from the correlation between worsening social and economic conditions and the severity of the pandemic. In this sense, it is in line with the reflection on the fight for health as part of the search for an equitable sharing of the benefits of well-being and wealth brought about by development.

Quammen<sup>17</sup> reports on a series of studies that point to the risk of new pests emerging or old ones recurring. Studies that systematically refer to the correction of these risks with the accelerated process of intervention in ecosystems where beings live and evolve that, when interacting with human populations, can trigger pandemic processes. In a way, they reveal concerns similar to those of Huxley and Orwell about a future of alienation and unhappiness exquisitely characterized by terrible and inescapable pests. On the other hand, they represent valuable contributions to reorienting the public policies currently in force around the world.

The question is how to sensitize, influence or condition decisions in the direction of these reorientations in the interest of the peoples of all

nations, when these decisions, led by the most powerful countries, are always made in the interests of the business and financial conglomerates that operate in the field of health and, therefore, the policies of this sector.

The participation of national societies on this world stage presupposes the willingness of citizens to remain attentive and proactive with regard to these issues and the ways in which they can be dealt with in this dual scenario, since it is impossible to act in the field of international relations without the support of militancy in national environments. In this sense, it is worth remembering Granda<sup>18</sup>: *En este momento no tenemos una idea clara del futuro, pero si sabemos que la construcción del mismo se basa en las potencialidades del acuerdo que logremos las resistencias globalizadas alrededor de alternativas democráticas y diferentes de la perspectiva globalista.*

However, social participation in the international context requires caution in several respects. The availability of the goods and services needed to preserve health and treat illnesses depends on the actions of public authorities and private organizations that have long been intensely involved in defending and expanding their interests. This is a field of disputes in which public health policies often become hostage to the decisions and actions of the various branches of private business involved, directly or indirectly, in the production and supply of these goods and services. In this arena, interests are projected that must be mutually adjusted, as well as others that are irreconcilable. Hence the difficulties in balancing the interests of the producers and providers of health goods and services, on the one hand, and the beneficiaries of access to these goods and services, on the other. These difficulties are exacerbated by the diversification of beneficiaries' interests, due to economic factors, beliefs and values, political choices and forms of activism and other various circumstances.

These arguments demonstrate the importance of the obstacles to the participation of society in the formulation, execution and evaluation of public policies in the field of health, both in the context of each country and in the context of international relations. Social participation in each country takes place according to multiple factors, including the institutions of public power, which interfere by stimulating or restraining this participation. In the sphere of international relations, this participation is generally dependent on the legitimacy of their rulers, who have a mandate to conduct public policies that reflect the interests

of national societies or contradict them. These are valuable considerations, since the actions of governments in national contexts and in the United Nations are based on interests that go beyond those of the national societies that give them their mandate, since they involve private interests from both the countries themselves and powerful transnational conglomerates.

Raising the debate on this topic in the face of the COVID-19 pandemic is justified by the seriousness of this disease, which has spread rapidly and continues to pest humanity, in the face of which government measures have been disparate between countries and regions of the world. There is a disconnect between policies and actions that sometimes border on negligence or historical and health-related ignorance of ancient and even more recent pests. This ignorance is sometimes expressed in the form of a morbid attraction to disqualify the measures recommended to prevent or reduce the various impacts of pandemics.

It is unpostponable to recognize the pandemic situation as an opportunity to broaden the willingness to fight for health, to the point of effectively influencing the reorientation of public policies, which are now in tune with the logic of ongoing global development. This willingness is strengthened by recognizing that a certain form of participation by society is already taking place, through admirable community initiatives in all parts of the world, to support and help the most vulnerable contingents of the population. Initiatives that have always existed in other times of crisis and will continue, after the pandemic, to focus on other social and economic needs, despite or on the margins of public power.

The contrast pointed out between the fragility of social participation in public policies and its strong presence in the form of community solidarity may be the key to undoing the paradoxical knot cited by Fonseca<sup>19</sup>: “Nobody accepts it, nobody can take it anymore: none of us agrees with the sea of mud, the debauchery and shame of our public and community life. The problem is that, at the same time, the result of all of us together is precisely all of this!”

Intolerance with the *status quo* of public affairs at the beginning of the new millennium is not enough. É We need to take sides in the fight for health as part of the fight for democracy. A good start could result from the virtuous synergy between intolerance proclaimed individually and the practice of solidarity exercised by many by many in their daily lives. Otherwise, the pan-

demic will pass and come another, and we will continue to be divided between proclaimers of our own intolerance and so many others who, without proclamations, share a daily struggle on behalf of their more unfortunate peers.

### Pests and international relations

Relations between the member states of the United Nations<sup>20</sup>, which are constantly realigning geopolitically, often project invisible barriers in the direction of the objectives set by this inter-governmental organization. In this context, the altruism of health is escorted by the realism of diplomacy, to the point where conditionalities inherent to the interests of national states are established, permanently or eventually, for international cooperation processes<sup>21</sup>.

The inaugural assembly of the United Nations, almost eight decades ago, approved only one specialized technical entity, the WHO, postponing other initiatives of this kind to future meetings. A plausible interpretation is that at that time, practically every country was experiencing the calamitous state of health services and the widespread anguish over the scarcity of these resources, which had been exacerbated during World War II. This situation could have been better dealt with through the exchange of knowledge and techniques, or, in many cases, through aid from industrialized or developed countries to poorer ones. In addition, other factors may have corroborated this decision: the evident popular expectation in all countries; and the caution arising from the knowledge, established since the 19th century, that infectious diseases are a risk for all countries, including the most developed, i.e., it was a matter related to the security of all nations, including the richest.

It seems that the fundamental argument is that the main purpose of that founding assembly of the United Nations – to maintain peace and security in the world – included the ideal of promoting health and preventing disease, which could have been strengthened by technological advances. However, the use of these advances in the globalization scenario “[...] depends on what we do with national policies and what international agreements we establish”, according to Chang’s analysis<sup>7</sup>, when countering the falsehood of the bad Samaritans who proclaim the inevitability of the “[...] neoliberal globalization that is happening today”.

This brief historical review adds to arguments about the validity and expansion of social parti-

icipation in the international health context, as well as in the countries themselves, since they are related arenas where different actors representing their respective social, economic, political and scientific backgrounds face off and seek consensus. Consensus is often achieved without any alignment of government positions with the demands of social movements.

### **Social participation and public policies in times of pests**

Studies on the occurrence of pests in different social and geopolitical contexts<sup>22,23</sup> point to two common aspects that deserve attention: on the one hand, the observation that the victimized populations generally do not influence the measures adopted by the public authorities; on the other hand, that these measures are generally delayed and insufficient or, worse still, carried out negligently, both in terms of preventive measures of a collective nature and those capable of alleviating the suffering of those affected, as in the harsh times of the current pandemic.

It is worth emphasizing that this evaluation concerns public management, since solidarity initiatives generated and sustained at community level can be observed as in the past, in all parts of the world. Initiatives that replace or make more profitable those adopted by the public authorities.

What is striking is the contrast between the past, when nothing, or almost nothing, was known about the causes and progress of pestilential episodes, and the current era, when it is possible to identify biological causes and triggering factors, indicate measures capable of reducing the impacts, and also provide means to extend the control and even the extinction of such evils.

It would be absurd to attribute this result to intrinsic flaws in science, since its primary function is to find ways of making nature's own resources available to tackle specific problems, in addition to those that come from artificial means. The issue implicit in the origin of these flaws concerns the deliberations on the use of these resources which depend on personal, corporate or power decisions made on behalf of society. These failures are interpreted by Mahoney & Morel<sup>24</sup> based on the triple involvement of science, the market and the government, who mainly attribute to the market and the government the vices that restrict the use of these resources by the majority of populations in all parts of the world.

The argument here is that this failure, in its threefold configuration, revolves around one

axis, social participation, which, being sidelined by greater powers, is unable to redirect the direction of the political processes that generate this effect. Ultimately, it is a flaw that has more to do with the progressive remodeling of state action in this long era of extremes, which tends to delimit or atrophy social participation.

This line of thinking admits that both science and government suffer from dominant market influences and that, therefore, under this hegemony, they are unable to reorient themselves, as a priority, towards the interests of society. It is fair to acknowledge that many of the players in the scientific and governmental fields are aware of this situation and even adopt attitudes and initiatives that go against it, but their influence is becoming weaker in the face of the dominant interests of the market.

This strengthens the conviction that the potential transformations stimulated by the pandemic will only materialize in the direction of social interests, through an insurrection in the field of public power instituted from the struggle for health as part of that for democracy.

The progress that fuels the growth of world wealth *pari passu* with the worsening of inequalities has become the most serious pest of modern times. Let's remember what happened during the current pandemic: the virus was quickly identified and measures to contain its spread and prevent or reduce the effects of the disease or its most serious forms were established in surprising time. However, more than three years on from the first case of the disease, a huge proportion of humanity is still suffering and taking risks as a result of this pandemic. In addition, it is clear that, unlike this unassisted majority, those who are more privileged in the distribution of the world's wealth enjoy most or all of the benefits of the progress available to ease the burden of living with the disease, both in terms of prevention and treatment of the illness, as well as the conditions that indirectly contribute in the same direction, such as housing, transportation, work, food and general well-being.

Covid-19 is therefore an opportunity to rethink, reinvigorate and thus reorient and strengthen the democratic practice of social participation on the national and international stage, in order to reorient all public policies that directly or indirectly have to do with health.

In light of these considerations, three questions arise: how do we deal with the interests of the large business and financial corporations that hold power over the processes inherent in globalized development? How do we promote the

collective interest, differentiated into multiple segments that act on the basis of the rich diversity of their cultural traditions and customs? How can these conflicts be resolved, both in different national contexts and on a global scale?

A good start in tackling these issues would be to look at the guidelines for health emergencies issued by different bodies: scientific communities, corporate bodies, political or religious organizations and government institutions in each country. These initiatives are misaligned and sometimes conflict with scientific recommendations, which are regularly disseminated, but are also disseminated in a way that is inattentive or even detrimental to the circumstances of the different social segments.

All this contributes, among other undesirable results, to the intensification of disputes between groups with divergent interests, both in the scientific field and in government policies. This also explains the pandemonium that spread through the population during the pandemic. Both effects are aggravated by the intense dissemination via social networks (inducing exacerbated concerns) and antisocial networks (generating fake news) that make up the phenomenon known as the infodemic. This is a critical point to consider, as the scientific and technological development of communication systems in the global village is dominated by business and financial entities that thus promote their exclusive interests.

In this respect, it is worth highlighting the regrettable uncritical use of this global media network, which is subservient to interests other than those of individual citizens and of society as a whole, including representatives of scientific or professional organizations<sup>25,26</sup> and even international health bodies.

This raises the question that closes the agenda of challenges outlined in this essay: how can we interact with modern media to drive transformations in favor of society in times of pests?

### **Final comment**

Resilience in the quest to build the future persists despite humanity's difficult experience throughout history. Certainly, because the ideal of hu-

man solidarity resists the selfishness of those who enjoy the achievements of the civilization process without the slightest concern for the needs of so many others.

Life is a dangerous experience, because it leads towards the future, which is uncertain by nature. Surviving implies shaping a future that makes it possible for this experience to continue, with resilient hope in the face of past setbacks and in the direction of beneficial times to come.

At the turn of the millennium, two factors allowed for an optimistic outlook for the times ahead: the explosion of scientific and technological progress in the final decades of the millennium that was ending and the revived hope for the social uses of this progress, due to social movements and governments committed to this goal in many countries at the time. It was, therefore, a certain idea of the future filled with favorable expectations from world society, expressed in the Millennium Declaration approved by the United Nations General Assembly<sup>27</sup>. However, by the end of the first decade of the millennium, these expectations had declined. Today, two decades later and just a few years after the outbreak of the pandemic whose effects are still in force, another declaration like that would not be credible.

However, the present must not allow itself to be dominated by despair in the face of the past that is projected into the future; rather, it must take heart and persist in facing up to the unavoidable uncertainties inherent in the future.

The intention stated at the beginning of this essay was to highlight some of the aspects to be considered in relation to the future of human life on the planet, based on rethinking the disease, in this case the Covid-19 pandemic, as a stimulus for the transformation of health policies that evolve interactively in the contexts of each country and on a global scale.

Rather than concluding, this text invites debate on the paths to be taken by world societies at this crucial moment in history. The reflections presented here aim to persevere in the hope of promoting the construction of the future, not only from within the state's institutional framework, but based on democratic alternatives that direct and exercise social control over the state in order to fulfill its duties.



## Collaborations

JFNP Santana: coordinated the project, from conception and design to writing the article and approving the version to be published. JAA Silva, GO Penna, RP Nogueira, CA Lopes, EH Carmo and RF Campos: contributed to the critical review of the written work. MA Amorim: contributed to the critical review of the written work and was responsible for the foreign language translation. RF Campos: contributed to the critical review of the written work. RSGA Morais: contributed to the critical review of the written work and provided technical support during the work and in the process of submitting the manuscript.

## References

1. McLuhan M. *A galáxia de Gutenberg: a formação do homem tipográfico*. São Paulo: Companhia Editora Nacional; 1972.
2. Márquez GG. *O amor nos tempos do cólera*. Rio de Janeiro: Record; 2019.
3. Darwin C. *A origem das espécies*. São Paulo: Martin Claret; 2014.
4. Popper K. *Conjecturas e refutações*. Lisboa: Edições 70; 2018.
5. Hobsbawm E. *Era dos extremos – o breve século XX: 1914-1991*. São Paulo: Companhia das Letras; 1995.
6. Taubenberger JK, Hultin JV, Morens DM. Discovery and characterization of the 1918 pandemic influenza virus in historical context. *Antivir Ther* 2007 12 (4 Pt B):581-591.
7. Chang HJ. *Maus samaritanos: o mito do livre comércio e a história secreta do capitalismo*. Rio de Janeiro: Elsevier; 2008.
8. Swaminathan S, Swaminathan S, Pécoul B, Abdullah H, Christou C, Gray G, IJsselmuiden C, Kieny MP, Mazzucato M, von Messling V, Ogutu B, Reeder J, Røttingen JA, Swarup R, Tanner M, Trindade Lima N, Childs M, Harris A, Torrele E, Moon S. Reboot biomedical R&D in the global public interest. *Nature* 602(7896):207-210.
9. Organização Mundial da Saúde (OMS). Constituição [Internet]. 1948. [acessado 2022 jul 13]. Disponível em: <https://www.who.int/about/governance/constitution>
10. Silva JAA. 2014. Ebola, omissão e negligência [Internet]. 2014. [acessado 2022 jul 20]. Disponível em: <https://bioeticaediplomacia.org/ebola-omissao-e-negligencia/>
11. Huxley AL. *Admirável mundo novo*. São Paulo: Globo; 2014.
12. Orwell G. *1984*. São Paulo: Companhia das Letras; 2009.
13. Bourdieu P. *Os usos sociais da ciência: por uma sociologia clínica do campo científico*. São Paulo: Editora Unesp; 1997.
14. Berlinguer G. *A doença*. São Paulo: Cebes-Hucitec; 1988.
15. Landes D. *A riqueza e a pobreza das nações*. Rio de Janeiro: Elsevier; 1998.
16. Santos M. Por uma globalização mais humana. In: Santos M, organizador. *O país distorcido: o Brasil, a globalização e a cidadania*. São Paulo: Publifolha; 2002.
17. Quammen D. *Contágio: infecções de origem animal e a evolução das pandemias*. São Paulo: Companhia das Letras; 2020.
18. Granda E. ¿Quo Vadis Saúde Pública? [Internet]. 2004. [acessado 2022 jul 19]. Disponível em: [https://www.observatoriorh.org/sites/default/files/webfiles/fulltext/saludyvida\\_vol3.pdf](https://www.observatoriorh.org/sites/default/files/webfiles/fulltext/saludyvida_vol3.pdf)
19. Fonseca EG. *Vícios privados, benefícios públicos? A ética na riqueza das nações*. São Paulo: Companhia das Letras; 2001.
20. Organização das Nações Unidas (ONU). A Carta das Nações Unidas [Internet]. 1945. [acessado 2022 jul 19]. Disponível em: <https://brasil.un.org/pt-br/91220-carta-das-nacoes-unidas>
21. Santana JFNP. *Cooperação sul-sul na área da saúde: dimensões bioéticas* [tese]. Brasília: Universidade de Brasília; 2012.
22. Schwarcz L, Starling SHM. *A bailarina da morte: a gripe espanhola no Brasil*. São Paulo: Companhia das Letras; 2020.
23. Romero LCP. *Saúde & política – a doença como protagonista da história*. Brasília: Outubro Edições; 2019.
24. Mahoney RT, Morel CM. A global health innovation system (GHIS). *Innovation Strategy Today* 2006; 2(1):1-12.
25. Rubin R. When physicians spread unscientific information about COVID-19. *JAMA* 2022; 327(10):904-906.
26. Guimarães R. Vacinas: da saúde pública ao big business. *Cien Saude Colet* 2021; 26(5):1847-1852.
27. Organização das Nações Unidas (ONU). *Declaração do milênio*. Nova York: ONU; 2000.

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