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Pandemics, global risks and adaptation: Challenges for a changing world[☆]

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ABSTRACT

Uncertainty, insecurity and complexity are some of the terms defining, now and in the future, the development process of the human species on planet Earth. In order to minimize the impact of these challenges on our lives, we need data, studies and directives which allow us to create resilience and adapting strategies over time. However essential those actions may be, we constantly fail in preventing risks. In this sense, the present critical review aims to discuss the impacts originated in the new (COVID-19) pandemic and, simultaneously, the changes caused by this event within the international scenario.

1. The world as we know it is at risk

Flaws occurring in critical infrastructures, cyber attacks, social unrest, failure when mitigating climate changes, involuntary migrations, extreme climatic events and overwhelming inequality. These are only a few of the global risks which, besides becoming a “new normality”, will have to be faced with increased vigour in the coming years, demanding both commitment and collective cooperation actions from most different actors on the international arena (World Economic Forum, 2020).

There is an imperious necessity to find an answer to global risks considering their high complexity, also minding those are considered systemic risks, which means when something partially impacts on an interdependent system, there is a high probability of consequently affecting the whole system, since this is composed by interconnected parts (Kaufman & Scott, 2003). According to Cutter et al. (2015), Engel and Strasser (1998), these risks are also connected to the globalization project and the individualization of human societies, originating an ample and permanent sensation of insecurity and instability.

This critical review is written in a moment when mankind faces the new coronavirus (COVID-19), spread from Wuhan city, Hubei province of China (Li et al., 2020), that has quickly contaminated more than a hundred countries, causing a large number of deaths and registering over a million of confirmed cases of the disease, rising an alert to a probable crisis of public health (World Health Organization, 2020).

The purpose of this critical review is not to collect information about the impact of this disease on public health but approaching a vision about the world to be built after the actual crisis and the ongoing risk management. Our objective is to give a contribution to the academic debate surrounding a recent and relevant issue, searching future scenarios, understanding the status quo changes and helping us to redirect as mankind, in order to achieve more security, resilience and adapting strategies.

2. Global risks today

Risks and disasters are capable to cause enormous suffering and economic loss (Zuo & Wei, 2017). For several years, countless publications, reports and studies have been calling our attention towards scenarios filled with risks and uncertainties. Among the most recent reports, stand out the Global Risks Report, Lloyd's City Risk Index 2015–2025, Global Catastrophic Risks, Cambridge Global Risk Outlook, Emerging Risks in the 21st Century, Natural Disaster Hotspots - A Global Risk Analysis, Global Challenges – Twelve risks that threaten human civilisation and others. In this critical review, we use the definition of global risk set by the World Economic Forum published in the annual Global Risks Report, characterising global risk as events that cause significant negative impacts to countries and industries over a 10 year period (World Economic Forum, 2020). We use the same Report to go deeper into our discussion about this issue.

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According to the Global Risks Report (World Economic Forum), mankind is exposed to risks divided in five categories: economic, environmental, social, geopolitical and technological. Among the thirty global risks, emerge the “rapid and massive spread of infectious diseases”. This risk includes bacteria, viruses, parasites or fungi and the uncontrolled spread of infectious diseases (for instance as a result of resistance to antibiotics, antivirals and other treatments) leading to widespread fatalities and economic disruption. Although this risk has not been permanently present within the five global risks with higher probability of occurring\greater impact in the last 14 reports (except the report rankings published in 2007 and 2008), still the risk is widely discussed by the experts addressed in the report.

The report has repeatedly alerted, during recent years, to the risks of epidemics and catastrophes at a global scale. In the introduction of the 2020 edition, the report signals, in the topic “health systems under new pressures”, new vulnerabilities as a result of changes in the social, demographic, environmental and technological patterns, posing additional risks to the operations of health services and systems. Besides, the report underlines: “progress against pandemics is also being undermined by vaccine hesitancy and drug resistance, making it increasingly difficult to land the final blow against some of humanity’s biggest killers”. The end of the section concludes: “as existing health risks resurge and new ones emerge, humanity’s past successes in overcoming health challenges are no guarantee of future results”.

The sensation of surprise and unpreparedness before the challenges imposed by the new pandemic seems to generate discomfort in the scientific community and among experts, who have been alerting, for a long time, to the possible coming of these events.

3. Possible future scenarios and the changing status quo

Despite being a very recent event, are already countless the studies and analysis produced by experts concerned with the future of mankind after the pandemic. In this section, we selected some comments, publications and studies drawing possible scenarios\predictions about the future.

Stephen M. Walt, the Robert and Renée Belfer professor of international relations at Harvard University, published in *Foreign Policy* a prediction entitled “A World Less Open, Prosperous, and Free” (*Foreign Policy*, 2020), foreseeing the growth of nationalism and the adoption of emergency measures to fight the pandemic by some governments that, in the future, once the crisis is over, will not abdicate of those powers. Walt also believes COVID-19 will accelerate a change of power and influence from West to East, flowing from more effective responses to the pandemic in Asian countries such as South Korea, China and Singapore, in contraposition with Europe and America where the reaction to the COVID-19 challenges came later.

Released by *BBC* (2020), Simon Mair, Research Fellow in Ecological Economics at the University of Surrey, suggests, in his article entitled “How will coronavirus change the World?”, that we all should question which emerging social forms come from an ethic that values care, life and democracy. After pointing the failures and challenges imposed on modern economy, Mair believes in the necessity of a new kind of economy, completely different, capable of building a socially just and ecologically solid future.

Corlett et al. (2020) published, in April 2020, a study entitled “Impacts of the coronavirus pandemic on biodiversity conservation” in the journal *Biological Conservation*, showing his preoccupation about the effects of the pandemic on the World biodiversity and on our ability to protect it. Besides directing questions open to the readers, the authors of the article reached some preliminary conclusions: i) in some locations, biodiversity is benefiting from the reduction of human activities; ii) pandemic interrupted many researches around the World, raising concerns about the formation and training of young scientists; iii) regardless of the impacts on ecosystems and biodiversity, pandemic has already caused an elevated number of fatalities and suffering to persons all over the World; a tragedy that will eventually lead us to rethink the existing connexions between health, resilient ecosystems and the human wellbeing.

To *McKinsey and Company* (2020), Dickon Pinner, Matt Rogers and Hamid Samandari published an article entitled “Addressing climate change

in a post-pandemic world” relating pandemics to climate risk. Here, the authors indicate: i) both represent *physical shocks* (different from financial shocks, mainly conducted by human feeling and generally originate from within the financial system); ii) both are systemic (since their direct and indirect effects display rapidly in an interconnected world; iii) they are *non-stationary* (the probabilities and distribution of occurrences are changing quickly, proving to be inadequate or insufficient for future projections); iv) they are nonlinear (as their social economic impacts grow disproportionately and often catastrophically); v) are risk multipliers (exacerbating vulnerabilities not tested until then, inherent to finance and health systems and to real economy); vi) regressive (affect disproportionately the world’s most vulnerable persons); vii) can’t be considered a “black swan”, as many experts have been consistently alerting about both. After establishing the similarities between climate risk and pandemics, the authors say: “individuals, companies, governments and civil society should use this moment to raise awareness of the impact of a climate crisis, which could ultimately create disruptions of great magnitude and duration”.

In *The Wall Street Journal* (2020), Henry A. Kissinger published the article “The Coronavirus Pandemic Will Forever Alter the World Order” reopening the debate focused on the international relations, foreseeing a possible alteration of the world order and in the balance of power of the international system. Kissinger states the leaders of all the World are engaged in an enormous crisis within their national borders, but they must understand that the disrupting effects of the pandemic know no borders. Consequently, the author understands the urgent need of a global cooperation, while no country has the capacity to overcome the virus thru a purely national effort.

4. Conclusions: in search of a collective conscience and a global coalition

Global challenges demand responses at a global level. In a World full of rapid change in patterns (either economic, environmental social or political), it urges to create measures, tools and strategies able to guarantee more security and stability to people, countries, economy and environment. We believe the time has arrived to start wider and stronger alliances among nations. The gathering of different backgrounds and know-how and the exchange of ideas will constitute essential pillars to support the creation of intelligent and holistic measures adequate to solve complex challenges.

Beyond international cooperation, we consider the importance of increasing the contribution of the scientific and technical communities to promote decisions looking upon the future. A strong interaction among universities, governments, corporations and civil society may be an effective tool to minimize the impacts of future challenges, guaranteeing a better management of risks and adaptation.

Finally, we anticipate the present situation of crisis, risk and insecurity will lead to a profound change of the structures and patterns that compose our lives. We need to find new and different ways of consuming and producing. We will have to revise the current economic and political systems, as well as the way we have been dealing with the environment and the relations among us human beings.

Times of deep crisis generate pain, losses and damages often irreparable. In this sense, we hope to gain the strength to adapt, becoming even more resilient in face of future risks and challenges that will undoubtedly appear.

CRedit authorship contribution statement

Wellyngton Silva de Amorim: Conceptualization, Methodology, Formal analysis, Validation, Investigation, Writing - review & editing. **José Baltazar Salgueirinho Osório de Andrade Guerra:** Conceptualization, Methodology, Formal analysis, Validation, Investigation, Supervision, Project administration, Funding acquisition.

Declaration of competing interest

The authors state that there is no conflict of interests.

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