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A global discussion about our possible futures during the 2021 World Future Day

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ABSTRACT

During the World Future Day on March 1, the Millennium Project (MP) organizes a 24-hour around-the-world conversation for futurists and the public joining at noon to discuss their views about challenges and opportunities for the futures of humanity for building a better future together. The short communication distills the main suggestions and solutions discussed during the 2021 WFD, setting a global agenda for further discussion.

Futurists today do not study one single future but explore multiple futures. Scenario building is only one of the different methods (e. g., [Glenn and Gordon, 2009](#)) we can apply. We called it *Futures Research* in the early days. It has been called futurology, prospective, futuribles, foresight, and future studies, following Barbieri Masini and Dator's works ([Gidley, 2017](#)), with an 's' on future to remind us that there are many possible futures ([Barbieri Masini, 1993](#)).

The field has become complex, as discussed on the 2021 World Futures Day organized on May 1 by the Millennium Project ([The Millennium Project](#),) (MP) in collaboration with the Association of Professional Futurists ([website](#)) (APF), Humanity+([Humanity+](#)) UNESCO Global Futures Literacy Network ([UNESCO](#)), the World Academy of Art and Science ([World Academy of Art and Science](#),), and the World Futures Studies Federation ([World Future Studies Federation](#),) (WFSF). The 24-hour global conversation, this year in its 8th edition, usually begins in Aotearoa-New Zealand at 12 noon their time and moves each hour westward ending 24 h later just west of Hawaii.

The WFD global conversation helps define priority contents related to the global challenges facing humanity ([Glenn & Florescu, 2017](#)) and the field of futures studies evolution in a massive voluntary event where total strangers around the world discuss the future politely and with respect. Many future-oriented suggestions and solutions emerged this year during this discussion among around a

Abbreviations: WFD, World Future Day; MP, The Millennium Project; AI, Artificial Intelligence; ICC, International Criminal Court; AGI, Artificial General Intelligence; ASI, Artificial Super Intelligence; STEM, Science, Technology, Engineering, and Mathematics; STEAM, Science, Technology, Engineering, Arts, and Mathematics; PALEM, Philosophy, Arts, Literature, Ecology, Music; APF, Association of Professional Futurists; WFSF, World Futures Studies Federation; WAAS, World Academy of Art and Science.

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thousand of experts of futures studies, Artificial Intelligence (AI) professionals, economists, policy makers, artists, educators, scientists, engineers, politicians, and the public. The event is open and free in the world with an Internet connection and a microphone. Bridging the misunderstandings and contradictory views among various interests is often part of the discussion.² The relationships are friendly and WFD keeps conflict down and focuses on positive alternative futures, thus showing emerging humanity of humanity.

The following 2021 distillation of solutions³ can be clustered into four main themes, such as Complex solutions for complex problems, A hyper-technological humanity, Education and learning for a better Future, Improving global foresight.

Cluster 1 collects many insights related to complex problems. Particularly about the environment, we should abandon our human-first perspective (Krenak, 2020), and give rivers (Evans, 2020), lakes and oceans legal rights. There should be a Universal Declaration for Rights of Nature and crime against nature should be punishable. Artificial Intelligence (AI) could allow rivers to express themselves (Schroeder, 2019) and a new *Ecocide* (e.g. in Funnel, 2021) law at the International Criminal Court (ICC)'s remit would enable it to investigate and prosecute who damages our biosphere.

We should discuss how technology improves agriculture, food, and animal treatments in terms of quality food and non-intensive agriculture with less workforce and energy in a green environment. While going towards biotech, the green revolution should be a soil revolution. We have many ways to regenerate the planet and to reduce carbon and methane emissions.⁴ Regenerative practices are beneficial for carbon capture, for better quality and diversity of pastures, for improving animal health and quality of meat, and for the water systems by avoiding agrochemicals.

Following the recent recommendations from Bill Gates (Temple, 2021), synthetic meat could be a game changer. Different protein alternatives as food to eat can now be vegetal and animal proteins. For animal proteins, we can differentiate between conventional meat products and cell-based animal meat which is not synthetic nor synthesis but actually animal.

We need shared visions of a future governance and imagine what we could do to make cities liveable in terms of equity, access mobility, gender equality, and environment. We could eventually promote smaller cities, travel less, and define a community of communities. We should *womenize* the economic system, with a *happiness index* driving us, and pursuing partnership-oriented societies (Eisler & Douglas, 2019). Our future human civilization should define an incremental process to emerge as a genderless society and a sort of commission on the quality of life to think about our body well-being.

The global Appeal to Protect People and the Planet ([Global Appeal to Protect People and the Planet](#)) aims at ending the nuclear threat, abolishing nuclear weapons, and shifting the weapons budgets and investments to other needs. We are in a transition towards a future civilization based on different energy sources and models. Solar energy and other renewables could provide almost a hundred percent of the energy we need in one decade, in a sort of energy singularity or Energularity in 2030 (Cordeiro, 2012).

Addressing the transnational organized crime is another priority we have. A solution (Glenn & Florescu, 2017) could be creating a financial prosecution system as a new international body. It would prepare legal cases, identify suspects' assets to freeze, establish the location of the suspects, assess the local authorities' ability to make an arrest, and send the case to one of the preselected courts. In parallel, prevention ecosystems (Olavarrieta, 2021) should be developed by considering risk factors related to individuals, families, education, relations, and local scopes, and should be defined in collaboration with different actors.

Increasing population could help us breaking through this planet and the *unknown* related to other potential intelligent beings is getting more attention now. If we reached the conclusion that we are alone in the universe, it would change our perspective, as evidence of extraterrestrial life would. We do not really know about that. However, thinking about our place in the cosmos makes us think about our existence.

As discussed within Cluster 2, more specifically focused on our relationship with technology, we have much more information today but most is not pertinent or is fragmented and we are moving from an economy of information to an economy of attention, extracting pertinent information and knowledge with the help of often-biased AI. Technology will influence decision-making and this will have implications on the future of democracy. Two main opposite directions could be manipulating democracy and or supporting it. We should be able to use technology to democratize processes through digital platforms that create communities.

Machines and AI will solve problems that we cannot solve alone; e.g. what Deep Mind's AlphaFold is doing with protein folding (Senior, Jumper, Hassabs, & Kohli, 2020). Some think that humans and hyper-intelligent beings will be partners in the coming Novacene (Lovelock, 2020). A Cyber Minister could balance the relations between robots and humans in the future. The future could belong to hybrid human-machine systems, an enhanced interacting community with task forces brought together by machine-supported environments and humans.

Humans, AI and robots could merge in a potential future and some experiments are already ongoing. (Neuralink.), for instance, will merge us with technology by connecting our brains to the synthetic neocortex. These hybrid models could lead us to a hybrid species. Transhumanists predict the enhancement of the human condition with new technologies giving us more intelligence and longevity,

² According to the 2021 WFD Organizing Committee, various representatives of different points of views were part of the event, such as university researchers, students in futures research, small consulting firms, international bodies and NGOs, politics. Gender balance seems respected. The 2021 WFD was opened with a *karakia* (Maori blessing) by a Maori youth and a Maori elder to launch discussions about the role of indigenous views in futures studies. Younger participants had their parallel events (Dragt, 2021) for sharing thoughts and they could freely join the global conversation when they wanted. Corporate business was a bit underrepresented.

³ Data for the analysis are composed by 8 reports and 8 short summaries from the facilitators, the automatic transcription of many discussions (870,761 characters), and 24 h of chat text (133,344 characters). The Chatham House Rule applies to the WFD: one can quote and use material but cannot cite the source.

⁴ E.g. Paul Hawken, *The 2000 Watts society*, Toffler and Toffler (1995).

unlimited memory, and faster speed of communication (Kurzweil, 2005). We could become post-humans; the human age could end in 2045.

We have to address these possibilities. AI could surpass and replace us in many ways but there is not any potential global governance model for the transition from Artificial Narrow Intelligence (ANI) to Artificial General Intelligence (AGI). If we do not get the initial conditions right, an Artificial Super Intelligence (ASI) could emerge from AGI and threaten our future, as many have warned.⁵ We need to explore an international global governance system for the transition (Glenn, 2019) and focus on how we can reach a consensus about regulations on a global level.

Cluster 3 reports main insights related to education and learning around the world, acknowledging how the conversation seems to be shifting towards skills. There are several possibilities for their futures. One is that formal education will continue in the 10 years, together with non-formal educational sectors that are skill-driven. Another is homeschooling. We should discuss about what could and should happen and also about flexible schools, with the system based on imagination and on nurturing creativity and personality.

We teach STEM (Science, Technology, Engineering, and Mathematics), STEAM (Arts) and English. Some propose ESTEAM (Entrepreneurship) and PALEM (Philosophy, Arts, Literature, Ecology, Music). We should teach the school of life (De Botton, 2019), to be compassionate and empathetic, and to treat nature and human beings with values, ethics and morals. We need critical thinking skills. First-principles thinking helps reverse-engineer complicated problems and release creative possibilities. Futures literacy (Miller, 2005, 2018) develops the individual capacity of imagining and using the future in many different ways. We could make people play with the future through arts, simulations, and immersive theater.

We know now that the brain functioning can be improved. Some think we should focus more on emotional intelligence (Salovey & Mayer, 1990) than on cognitive intelligence. Others (Glenn, 2019) talk about making increasing intelligence an objective of education. Since we now have the means to get just in time knowledge, the retention of knowledge becomes less important than using the hardware of the brain. Moreover, there are various ways to increase individual intelligence already.

Cluster 4 contains suggestions about how improving global foresight. The future and the past are deeply connected; our ability to imagine the future is dependent or contingent upon what we know. Problems have a lifetime; whatever we look at gets more complex and faster in the future. Similarly to what the Club of Rome (Meadows, Meadows, Randers, & Behrens, 1972) did, forecasting and projections help us be smart about what to expect, select, and engage in inventing the future. Futurists explore possibilities, consequences, and strategies for alternative futures. We have to keep measuring, understanding and modeling to stay on top of these phenomena, redefine our labels. Science is not absolute but it is the best approximation we have to reality. Dealing with uncertainties and with *known unknowables* has become fundamental and we should use the Johari Window (Luft & Ingham, 1955) more in foresight.

The *future* is more random that we think. Small differences in initial conditions can have significantly different effects, as chaos theory postulates. We have more agents, tightly coupled networking connections, and higher degrees of unpredictability than ever. Our culture of “singular fixes” should focus on long-term responsibility. Moreover, an anticipatory governance help govern something that is not there yet before it is too late, like the AGI. We need to fill the gap from foresight to action to solve our threats. This implies understanding how the majority of people can listen to the right voices, use technology, and get information on complex matters. It needs ethics, communication, definitions of filters and of *right voice*, persuasive ways to focus the public on the unknowns. We need a collectivist approach to the planet and cooperation across domains.

Among all the issues we should face, there are long-term challenges that threaten the survival of our species. A single individual could make and deploy a weapon of mass destruction; there could be loss of control of future forms of AI, nuclear proliferation and escalation, uncontrollable global pandemics, catastrophic global warming, asteroids collision, the weakening of the Earth’s magnetic shield, solar gamma-ray burst, malicious nanotechnology, and particle accelerator accidents. There is no single point in the UN that addresses such long-term threats to human survival and no general office work on agreements about what the threats to our species are. We really need global governance systems to face common threats to our species. We could define a UN Office of Strategic Threats, a central point to identify and assess long-range trends and synergies among potential future threats. It would identify our knowledge gaps and coordinate research.

The MP’s WFD global 24-hours conversation that searches to contribute to decision-making in complex problems. The results should not be considered as foregone conclusions or idealistic solutions but as ideas and inputs from nearly a thousand people thinking about our possible futures, all in one place, and as contents for further thinking and discussion. The WFD results will be considered for inclusion in the strategies to address the 15 global challenges facing humanity (Glenn & Florescu, 2017). These are systematically updated by the Millennium Project since 1997. Some discussions have already inspired common actions soon after the event; for example, an open letter to the UN Secretary General for to conduct a feasibility study for a UN Office on Strategic Threats.⁶ Lastly, the first three clusters could input to scenario projects while the fourth can be of help on how to use the previous results.

The COVID-19 global pandemic seems to have really affected how people engage with the future but the outlook is not hopeless. This is a very important message coming out from the 2021 WFD.

⁵ Such as Hawkins (Kharpal, 2017), Gates (Rawlinson 2015), and Musk (Etherington, 2020).

⁶ Following to the WFD, the MP, the WFSF, and the APF launched a call for leaders in business, politics, academia, NGOs, to be signatories to an open letter to the UN Secretary-General, 2021 to conduct a feasibility study of a potential UN Office on Strategic Threats (<https://www.millennium-project.org/5672-2/>). The UN Secretary-General, 2021 responded by setting up a meeting with his staff for collaboration with the proposed off and his report: “Our Common Agenda”.

Data Availability

Data will be made available on request.

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References

- Barbieri Masini, E. (1993). *Why futures studies?* Grey Seal Books.
- Cordeiro, J. L. (2012). The "energenerality". In *Lifeboat*. (<https://lifeboat.com/ex/the.energenerality#overview>).
- De Botton, A. (2019). *The school of life: an emotional education*. Hamish Hamilton,.
- Dragt E. (2021). Young Voices on World Future Day 2021. In: Teach the future. April 21. (<https://www.teachthefuture.org/blog/2021/4/8/young-voices-on-world-future-day-2021>).
- Eisler, R., & Douglas, P. F. (2019). *Nurturing our humanity*. Oxford University Press.
- Etherington D. (2020). Elon Musk says all advanced AI development should be regulated, including at Tesla. In: *techcrunch.com*. February 18. (<https://techcrunch.com/2020/02/18/elon-musk-says-all-advanced-ai-development-should-be-regulated-including-at-tesla/?guccounter=1>).
- Evans K. (2020). The New Zealand river that became a legal person. In: *Bbc.com*. March 20, 2020. (<http://www.bbc.com/travel/story/20200319-the-new-zealand-river-that-became-a-legal-person#:~:text=If%20there%20is%20any%20kind,since%20at%20least%20the%201970s>).
- Funnel, A. (2021). 'Ecocide' proposal aiming to make environmental destruction an international crime". In: *abc.net*. February 12. (<https://www.abc.net.au/news/2021-02-13/will-ecocide-become-an-international-crime/13136912>).
- Gidley, J. (2017). *The future: a very short introduction*. Oxford University Press.
- Glenn, J. (2019). *Work/Tech 2050. scenarios and actions*. The Millennium Project.
- Glenn, J. C., & Gordon, T. J. (2009). *Futures Research Methodology* (third ed.). The Millennium Project, Humanity+.
- Glenn, J. C., & Florescu, E. (2017). *State of the future 19.1*. Library of Congress, Association of Professional Futurists.
- Global Appeal to Protect People and the Planet: (<https://www.unfoldzero.org/protect-people-and-the-planet-appeal-for-a-nuclear-weapon-free-world/>).
- J. Luft , H. Ingham , The Johari window, a graphic model of interpersonal awareness" *Proceedings of the Western Training Laboratory in Group Development* 1955 University of California, Los Angeles.
- Kharpal A. (2017). Stephen Hawking says A.I. could be 'worst event in the history of our civilization'. In: *cnbc.com*. November 6. (<https://www.cnbc.com/2017/11/06/stephen-hawking-ai-could-be-worst-event-in-civilization.html>).
- Krenak, A. (2020). *Ideas to post-poner the end of the world*. House of Anansi Press.
- Kurzweil, R. (2005). *The singularity is near: when humans transcend biology*. Viking.
- Lovelock, J. (2020). *Novacene: the coming age of hyperintelligence*. Penguin.
- Meadows, D. H., Meadows, D. L., Randers, J., & Behrens, W. W., III (1972). The limits to growth. A report for the Club of Rome's Project on the predicament of mankind. *Potomac Associates*.
- Miller, R. (2005). Futures literacy: A hybrid strategic scenario method. *Futures*, 39(4), 341–362.
- Miller, R. (2018). *Transforming the future; anticipation in the 21st century*. Routledge.
- Neuralink: (<https://neuralink.com/>).
- Olavarrieta, C. (2021). Prevention Ecosystem vs. Transnational Organized Crime. Presentation.
- P. Hawken: (<https://paulhawken.com/>).
- Rawlinson, K. (2015). Microsoft's Bill Gates insists AI is a threat. In *bbc.com*. January 29. (<https://www.bbc.com/news/31047780>).
- Salovey, P., & Mayer, J. D. (1990). Emotional Intelligence. *Imagination, Cognition and Personality*, 9(3), 185–211.
- Schroeder, K. (2019). *Stealing worlds*. Tor Books.
- Senior, A., Jumper, J., Hassabs, D., Kohli, P. (2020). AlphaFold: Using AI for scientific Discovery. Ed: deepmind. January 15. (<https://deepmind.com/blog/article/AlphaFold-Using-AI-for-scientific-discovery>).
- Temple, J. (2021). Bill Gates: Rich nations should shift entirely to synthetic beef. *Technological Review*. (<https://www.technologyreview.com/2021/02/14/1018296/bill-gates-climate-change-beef-trees-microsoft/>).
- The 2000 Watts society: (<https://ourworld.unu.edu/en/2000-watt-society>).
- The Millennium Project: (<http://www.millennium-project.org/>).
- Toffler A., Toffler H. (1995). *Creating a new civilization: the politics of the third wave*. Turner Pub.
- UN Secretary-General (2021). *Our Common Agenda - Report of the Secretary-General*. United Nations.
- UNESCO Global Futures Literacy Network: (<https://en.unesco.org/themes/futures-literacy>).
- World Academy of Art and Science: (<http://www.worldacademy.org/>).
- World Future Studies Federation: (<https://wfsf.org/>).