150 THE NEXT FIFTY

TRENDS FOR THE NEXT 50 YEARS

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This report was created under the direction of the IE Center for the Governance of Change

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CENTER FOR THE GOVERNANCE OF CHANGE

150 THE NEXT FIFTY

HIGHLIGHTS

In the next 50 years, the citizens from G20 countries believe that...

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AI

Artificial Intelligence will seamlessly integrate into our daily lives, enhancing productivity in the workplace.

HEALTH CARE BIOTECH NOLOGY

Personalized healthcare, empowered by the advances in biotechnology, will be a beacon of hope.

WEALTH DISTRIBU TION

The population will be richer in the future, but the distribution of wealth will be more unequal.

JOB MARKET

A changing job market with potentially growing unemployment will require enhancing skills and learning new technologies.

CLIMATE CRISIS

The climate crisis will worsen, yet a government-led energy transition may pave the way for a greener future.

COLLABORATING WITH OTHERS

In case of a catastrophic event that puts humanity at risk, citizens would try to counter the threat, mobilizing and collaborating with others.

EDUCATION

Education will play a pivotal role in shaping the future, with AI-led classrooms and emphasis on innovation and entrepreneurship.

HOLISTIC APPROACH

The Humanities will be essential in the future of knowledge, underlining a holistic approach that combines technology with human values.

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INTRODUCTION

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50 years ago, the futurist Alvin Toffler wrote "Future Shock", a book in which he introduced the notion of an acute disorientation caused by experiencing rapid change in a short time span. He theorized that the accelerated pace of technological and societal advancements would leave numerous individuals feeling alienated, leading to severe disorientation and heightened stress. Toffler further argued that many of the societal challenges faced were direct repercussions of this Future Shock[1].

Among Toffler's predictions, one of the most remarkable was the anticipation of the rise of the internet, foreseeing that a knowledge-based economy would eclipse the post-industrial age. This transition is today evident when considering that the digital economy has been growing at an annual rate of over 10%, outpacing the growth of the broader economy[2]. He also foresaw the development of cloning[3].

Nevertheless, not all of Toffler's predictions materialized. For instance, he posited the disintegration of cities. Today, however, about 56% of the global population, or 4.4 billion people, reside in urban areas. Projections suggest that by 2050, this figure will more than double, with nearly seven in ten people living in cities. Toffler also believed that humans would inhabit artificial cities beneath the sea, a vision that remains unrealized.

The decades in which Toffler penned "Future Shock" witnessed the inception of futures thinking and foresight studies. Today, beyond mere predictions of future events, foresight empowers us to proactively shape our responses to the challenges and opportunities of the next 50 years, helping us prepare for an ever-evolving world.

[1] Toffler, A. (1970). Future shock. Random House.
[2] World Bank. (2021). Digital economy overview. World Bank. https://www.worldbank.org/en/topic/digital-economy/overview
[3] Schneider, K. (2016). Alvin Toffler, Author of 'Future Shock,' Dies at 87. The New York Times. https://www.nytimes.com/2016/06/30/books/alvin-toffler-author-of-future-shock-dies-at-87.html

WHAT IS FORESIGHT?

While Toffler did not explicitly refer to foresight, his ideas about "future shock" laid the groundwork for the discipline. The terminology often becomes muddled, with terms like "foresight", “forecast” and "prediction" bandied about interchangeably, though inaccurately.

Forecasting is the science of positing what tomorrow might hold based on the lessons of today. It's an everyday exercise, akin to the familiar sentiment of wishing one had prior knowledge of current events[4].

Foresight, however, is not just a passive glimpse into the future; it's an active exploration of potential tomorrows, where the aim is not just to predict but to prepare. Through a combination of scenarios, narratives, and immersive experiences, foresight seeks to push boundaries, stepping beyond the conventional, and pre-empting both opportunities and pitfalls in our ever-evolving world[5]

[4] Pundhir, A. (2020). Time Series Forecasting. Analytics Vidhya. https://medium.com/analytics-vidhya/time-series-forecasting-c73dec0b7533
[5] Hajizadeh, A., & Valliere, D. (2021). Entrepreneurial foresight: Discovery of future opportunities. Futures, 135, 102876. https://doi.org/10.1016/j.futures.2021.102876

WHY FORESIGHT?

“The future cannot be predicted, but futures can be invented.”

Dennis Garbor (1971 Physics Nobel Prize Laureate).[1]

In the next 50 years, change will be a constant. With the rise of generative AI and numerous disruptive technologies, our world will transform rapidly. To prepare humanity for these changes and ensure we navigate them effectively, it will be essential to engage in foresight exercises collectively, ensuring active participation from all stakeholders.

The quantifiable benefits of foresight are evident in today's landscape, as shown by many examples.

In the last few years, UNICEF has been engaging in strategic foresight work, analyzing five significant megatrends with implications for children's well-being and UNICEF's mission. These trends include global health crises, inequality, evolving conflict dynamics, global migration, and the impact of technology on education and employment. UNICEF's child-centered foresight approach has extended to various country offices, such as India, where key trends have been used to develop contextual scenarios. These efforts have led to the identification of 17 critical themes and the creation of a forward-looking action plan within the context of the country program[6].

[6] Gabor, D. (1963). Inventing the Future (Secker and Warburg, London, 1st ed.). (pp. 184-185).

Another example is Netflix, which initially was primarily a DVD rental company. However, the company noticed the societal shift away from physical media. In 2007, they invested in streaming technology and secured content licensing agreements, launching their online streaming service. By 2013, Netflix had garnered 30 million streaming subscribers[8]. As of 2023, they have 238.39 million subscribers worldwide[9], leading to an annual revenue of 238.39 million in 2022[10]. Foresight allowed Netflix to pivot early and become a dominant force in the entertainment industry.

Academic literature also supports this view. The paper "Corporate foresight and its impact on firm performance: A longitudinal analysis" by Rohrbeck and Kum demonstrated that firms with higher future preparedness significantly outperformed their peers, achieving a 33% higher profitability and 200% higher growth in 2015. Conversely, firms with deficiencies in future preparedness faced a performance discount ranging from 37% to 108%, underscoring the crucial role of strategic foresight in firm performance[11].

[7] School of International Futures (SOIF). (2021). Features of effective systemic foresight in governments around the world - full report (p. 11). Government Office for Science. https://assets.publishing.service.gov.uk/media/609aa813d3bf7f2888d18fe3/effective-systemic-foresight-governments-report.pdf.013

[8] Van der Pijl, P. (2019). How Netflix shift their business model from product to service, from DVD to streaming [LinkedIn post]. LinkedIn. https://www.linkedin.com/pulse/how-netflix-shift-business-model-from-product-service-van-der-pijl/

[9] Statista. (2023). Netflix: number of subscribers worldwide 2023. https://www.statista.com/statistics/250934/quarterly-number-of-netflix-streaming-subscribers-worldwide/

[10] Statista. (2023). Netflix: quarterly revenue 2013-2023. https://www.statista.com/statistics/273883/netflixs-quarterly-revenue/

[11] Rohrbeck, R., & Kum, M. E. (2018). Corporate foresight and its impact on firm performance: A longitudinal analysis. Technological Forecasting and Social Change, 129, 105-116. https://doi.org/10.1016/j.techfore.2017.12.013

WHY IE UNIVERSITY AND ITS CENTER FOR THE GOVERNANCE OF CHANGE?

One of the missions of academia is to equip individuals and societies with the skills and mindset to anticipate and adapt to upcoming challenges and opportunities, particularly with regards to technology. By understanding the evolving technological landscape and shifting societal dynamics, academia can empower citizens to imagine the future. By being able to imagine the future, society becomes not just a passive observer, but an active participant, steering the course of technology toward a future that is inclusive, empowering, and aligned with the collective well-being of humanity.

As IE University marks its first half-century of innovative teaching, impact-oriented research, and purposeful social engagement, the whole IE community looks forward to the next 50 years with renewed energy and the same commitment to shape the future of education as a global leader in academia.

To contribute with valuable knowledge to this mission, the Center for the Governance of Change - the applied research institution at IE University that studies the social impact of emerging and disruptive technologies and leverages foresight to advance governance solutions - has used collective intelligence to conduct a foresight exercise that identifies and analyzes some of the big global trends and key drivers of change that will determine how our world will look in the 2070s.

FORESIGHT POWERED BY COLLECTIVE INTELLIGENCE.

“In cases where matters relating to social are considered, the core structure is the public sphere and the most powerful stakeholders are not engineers or inventors, but ordinary people.”

Yuichi Washida (Hitotsubashi University) and Akihisa Yahata (Japan Research Institute).

This report harnesses collective intelligence, as valuable findings often emerge from having diverse groups of people co-develop new ideas or evaluate existing ones as a group. This approach typically involves engaging citizens, experts, companies, international organizations, and other stakeholders in the process of thinking about the future[12][13]. It also transcends the traditional notion of relying solely on a few "gurus" and instead fosters diverse perspectives, encompassing both public opinion and expert insights.

By incorporating the perception of the public and the views of experts, we challenge the foresight ecosystem to be more intentional and inclusive in its practice of the discipline. Data expert Stefaan Verhulst explains that the way in which a question is framed often determines, or at the very least significantly influences, the answers obtained. In an era marked by the exponential growth of information, we have decided not only to use existing data when defining the questions, but also to consider the broader context of public opinion.

[12] Leimeister, J. M. (2010). Collective intelligence. Business & Information Systems Engineering, 2(4), 245–248.
[13] Malone, T., Laubacher, R., & Dellarocas, C. (2010). The collective intelligence genome, MIT Sloan Management Review 51

We hope the insights featured in this report inspire foresight professionals and data scientists to leverage quantitative variables, with public opinion serving as a driver for futures research. This approach can not only enrich the literature of foresight but also enhance the science of forecasting. Moreover, this report offers an opportunity to explore resilience strategies, as foresight allows us to assess how people and communities are getting ready for the future. These insights can guide practical actions by governments, international organizations, and businesses as they identify trends in resilience that might require support.

METHODOLOGY

We opted to use surveys as a means to incorporate collective intelligence into this foresight exercise.

Traditionally, focus groups have been the preferred method to address broader socio-economic, environmental, or cultural themes, rather than surveys[14]. However, there are instances where surveys have been effectively used in foresight studies to address more expansive issues.

Surveys serve as a pivotal instrument to identify shifts in citizens' behavioral patterns[15]. For instance, as electric vehicle production surges, manufacturers use surveys to discern consumer receptivity and anticipate emerging market dynamics.

In Australia, for example, a group of researchers combined traditional scenario planning with public

[14] Chambers, I., et al. (2019). A public opinion survey of four future scenarios for Australia in 2050. Futures, 107, 119-132. https://doi.org/10.1016/j.futures.2018.12.002
[15] Chan, L., & Daim, T. (2012). Exploring the impact of technology foresight studies on innovation: Case of BRIC countries. Futures, 44(6), 618-630.

opinion survey methodologies. Their approach first identified key drivers for Australia's future and then leveraged these drivers to craft four plausible future scenarios for the country by 2050[16].

Similarly, in Japan, researchers Washida and Yahata utilized surveys as part of their horizon scanning efforts, a crucial foresight methodology. Their research aimed to evaluate the predictive accuracy of future scenarios developed through horizon scanning[17].

The Chinese Academy of Sciences has been conducting long-term technology foresight surveys, emphasizing the role of surveys in their foresight activities[18].

In our pursuit of collective intelligence foresight, we have opted for an issue-centered scanning approach, as articulated by Amanatidou et al. (2012)[19], and used a methodology that draws inspiration from Delphi;, one of the most consolidated techniques for harnessing collective intelligence in surveys, as proved by Green, K. C., Armstrong, J. S., & Graefe, A. (2008) [20].

[16] Ibid.
[17] Washida, Y., & Yahata, A. (2020). Predictive value of horizon scanning for future scenarios. Foresight - The journal of future studies, strategic thinking and policy, 23(1), 17-32. https://doi.org/10.1108/FS-05-2020-0047
[18] Dreyer, I., & Stang, G. (2013). Foresight in governments – practices and trends around the world. European Union Institute for Security Studies.
[19]Amanatidou, E., Butter, M., Carabias, V., Könnölä, T., Leis, M., Saritas, O., Schaper-Rinkel, P. and van Rij, V. (2012), "On concepts and methods in horizon scanning: lessons from initiating policy dialogues on emerging issues", Science and Public Policy, Vol. 39 No. 2, pp. 208-221.
[20] Green, K. C., Armstrong, J. S., & Graefe, A. (2008). Methods to Elicit Forecasts from Groups: Delphi and Prediction Markets Compared. http://dx.doi.org/10.2139/ssrn.1153124

OUR PROCESS UNFOLDS OVER THREE ITERATIONS:

1ST ITERATION

CONSOLIDATED SCENARIOS OR FORESIGHT FRAMEWORKS

We initiated our analysis by anchoring it in existing foresight frameworks and specific scenarios. Futures scenarios, in the context of foresight and strategic planning, refer to imaginative and plausible narratives about different potential futures. This foundational step allowed us to build upon established scenarios and frameworks that are explained in each chapter.

2ND ITERATION

SURVEY IN G20 COUNTRIES

Moving into the second iteration, we quantified these scenarios by integrating public opinion. From the scenarios, we derived a set of 17 questions that we posed to a carefully selected sample of 8,000 citizens across 20 countries (the 19 countries comprising the G20, plus Spain): Argentina, Australia, Brazil, Canada, China, France, Germany, India, Indonesia, Italy, Japan, Mexico, South Korea, Russia, Saudi Arabia, South Africa, Spain, Turkey, the United Kingdom, and the United States. This sample size, comprising 400 respondents per country, is designed to be representative, boasting a 95% confidence level and a 5% margin of error. Our sample mirrors the distribution of each country's population in terms of region, age, and gender.

Respondents were part of recurrent panels recruited by Netquest or affiliated companies into panels via social media, direct mailing, or through referrals from other respondents. They received small in-kind incentives for responding to each survey.

In the analysis, responses categorized as ‘don’t know’ or left unanswered were treated as missing data.

3RD ITERATION

A PANEL OF FUTURISTS

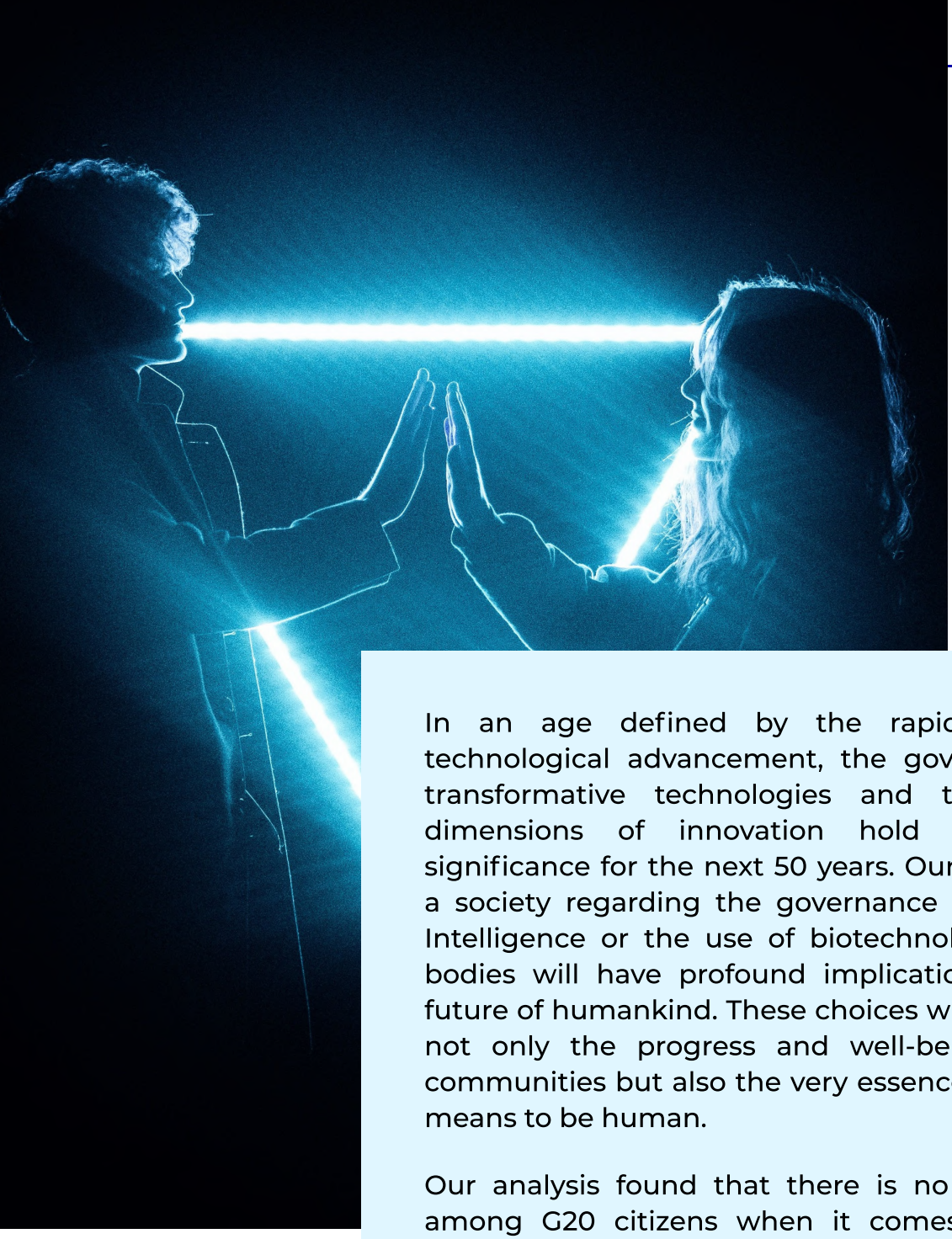
Finally, a panel of nine futurists or subject-matter experts analyzed the findings, commenting on the results, and proposed theories or scenarios they anticipate will shape the next 50 years. They were classified into 5 categories:

- Emerging Technologies, Governance, and Ethics
- Economy and Prosperity
- Environment and Climate Crisis
- Existential Risks
- Education and the Future of Knowledge

Additionally, the Deans of IE University participated in this report by sharing their perspectives on the five key drivers of change for the upcoming five decades.

CHAPTER 1

Emerging Technologies, Governance, and Ethics



In an age defined by the rapid pace of technological advancement, the governance of transformative technologies and the ethical dimensions of innovation hold paramount significance for the next 50 years. Our choices as a society regarding the governance of Artificial Intelligence or the use of biotechnology in our bodies will have profound implications for the future of humankind. These choices will influence not only the progress and well-being of our communities but also the very essence of what it means to be human.

Our analysis found that there is no consensus among G20 citizens when it comes to future technological scenarios. Citizens are split between a future where technology fosters unprecedented societal progress, and a future marked by increased surveillance and ethical dilemmas. However, there is agreement on two key points: the positive role of AI in our societies five decades from now and the urgent need to address the climate crisis as our most significant challenge in the future.

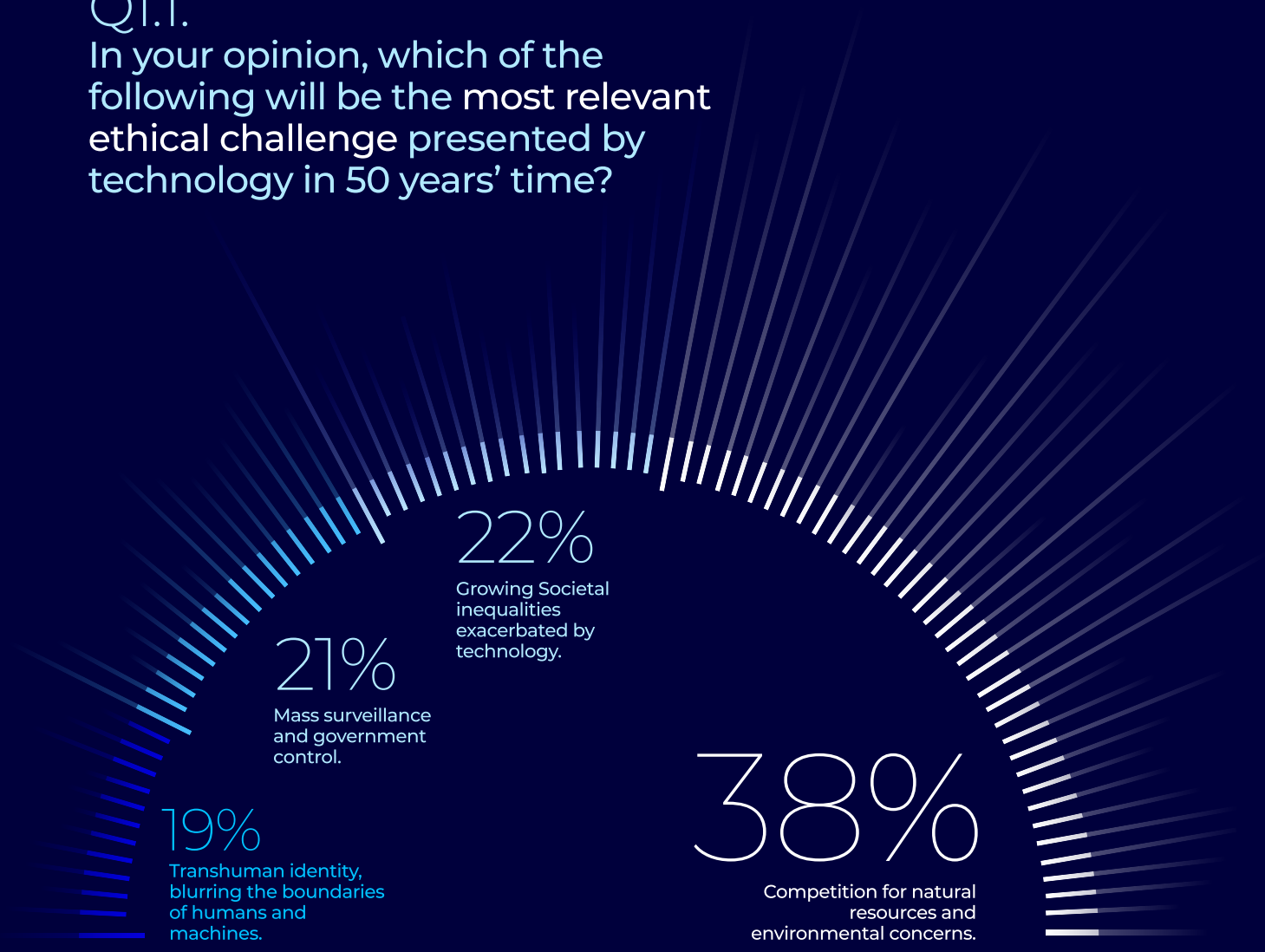
[1] Toffler, A. (1970). Future shock. Random House.
[2] World Bank. (2021). Digital economy overview. World Bank. https://www.worldbank.org/en/topic/digital-economy/overview
[3] Schneider, K. (2016). Alvin Toffler, Author of 'Future Shock,' Dies at 87. The New York Times. https://www.nytimes.com/2016/06/30/books/alvin-toffler-author-of-future-shock-dies-at-87.html

TECHNOLOGICAL CHALLENGES

Asked to rank four tech-related challenges by how important they will be in 50 years' time, respondents place environmental concerns first. This likely reflects the growing urgency of addressing the climate crisis, evident in record-breaking temperatures, and the recent surge in extreme weather events during this past summer. It can also be a testament to the growing coverage of the climate crisis by the media and the increasingly worrying assessments coming from the scientific community.

There is a tie for the second most significant challenge in 50 years' time. On one hand, there is concern about growing societal inequalities exacerbated by technology, and on the other hand, mass surveillance and government control share this ranking. Transhuman identity (i.e., the blurring of the boundaries between humans and machines) is ranked last.

Q1.1.
In your opinion, which of the following will be the most relevant ethical challenge presented by technology in 50 years' time?



Among the 20 countries surveyed, respondents from China are surprisingly the least concerned about mass surveillance and government control: only 10% rank this as the tech-related challenge that, in their opinion, will be the most relevant in the 2070s. This 10% figure in China contrasts with a global average of 21% and, for instance, 31% in the United States, 24-25% in the United Kingdom and Germany, and 16% in India. At a time when international human rights organizations often criticize China's government for its use of technology to surveil its population on a mass scale, it is remarkable to observe that Chinese citizens themselves appear to be relatively unconcerned about this issue.

One of the most striking trends I found in the survey was the divergence in focus between the Asian and Middle Eastern countries and the rest of the world. These countries seemed to take the potentially futuristic potential and risks of technology much more seriously than did most of the rest of the world, rating the risks of transhumanism, the potential for AI to transform every aspect of human life, the risk of biodisasters and the promise of post-physical existence all much higher on average than other parts of the world.

Whether one agrees with these perspectives or not, it is hard to deny that those who grapple more seriously with potentially transformative futures are those likeliest to shape the future we end up living in. Asians and Middle Easterners seem to be doing this much more than the rest of the world, consistent with those who have predicted that the next century may be an "Asian century". The most vital ideas for the future of democracy I have seen have been emerging from Taipei, and the most coherent example of how AI might be used (for better or worse) to centralize power emanate from China. Many right-wing futurists increasingly gravitate towards India and Israel, rather than the United States. On all sides of the future ideological spectrum, we may expect leadership from Asia.

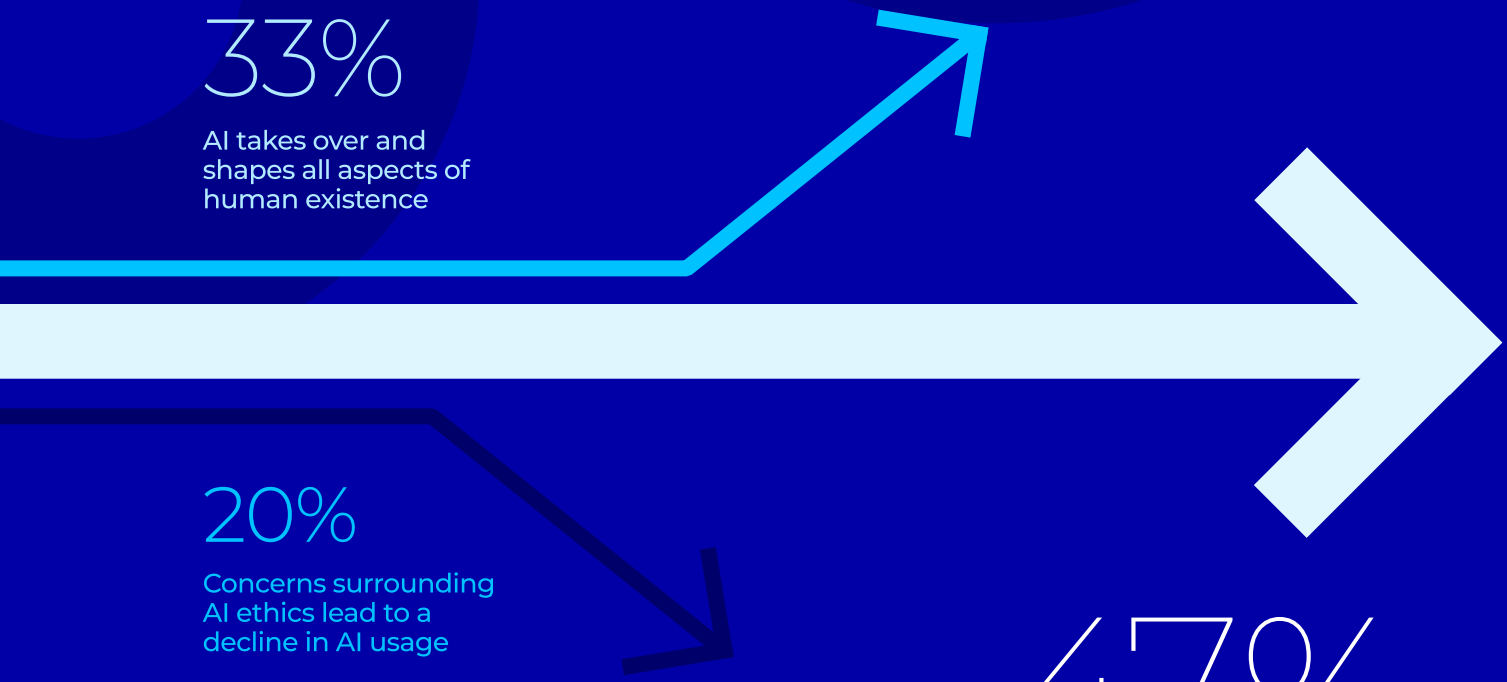
GLEN WEYL
Head of Web3 research at Microsoft
and Founder of RadicalxChange

THE AGE OF AI

The exponential growth of generative AI, with its ability to create human-like text and content, has been a hallmark of recent technological advancement. Its implications for humanity are far-reaching, with the potential of altering how we communicate, learn, and access information. This prompts critical discussions on issues like disinformation, job automation, and the evolving dynamics of human-AI collaboration.

There is a positive global outlook regarding the role of AI in our societies five decades from today: nearly half of the G20 citizens hold a vision of a world where AI's seamless integration into our daily lives enhances our productivity. This optimistic outlook shows that citizens are looking forward to a future where AI is seen as a valuable ally, particularly at work. Increased productivity could potentially translate into higher incomes, paving the way for improved living standards and more leisure time. This aligns with the prevailing consensus regarding the future of AI, which is generally perceived as promising by developers, business leaders, academics, investors, and technologists.

Q1.2.
Which of the following **Artificial Intelligence** scenarios do you believe is most likely to occur by 2073?



33%

AI takes over and shapes all aspects of human existence

47%

AI becomes seamlessly integrated into daily life, helping us at work

20%

Concerns surrounding AI ethics lead to a decline in AI usage

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From your perspective, which do you anticipate being the most influential drivers of change over the next 50 years?

In the realm of technology and governance, Artificial Intelligence (AI) stands as the most significant factor in contemporary discussions. Its pervasive influence extends across multiple sectors, including health and energy, primarily because of its ability to sustain business models in these areas. However, it's crucial to approach AI with caution and foresight. Over-regulation, albeit well-intentioned, might inadvertently disadvantage those it seeks to protect. The crux of AI governance lies in delineating the circumstances under which AI can make decisions, taking into account the specific industry and context. Furthermore, it's imperative to avoid excessive technical specificity in regulations. The rapid evolution of technology often outpaces regulatory frameworks, rendering them obsolete if they are overly prescriptive. Thus, a balanced approach is essential to ensure both innovation and public safety.

IKHLAQ SIDHU
Dean of IE School of Science and Technology

Overall, **80% of survey participants think AI will play a key role in our societies by 2073, with 33% envisioning an expanded role for Artificial Intelligence, where AI would significantly influence every aspect of human existence.** While this perspective is not inherently pessimistic, it is important to note that the phrasing used in our survey, suggesting that AI might "take over," carries certain worrisome implications.

Only **20% of participants believe AI use would decrease in fifty years' time.** There is therefore a widespread belief in the growing social importance and influence of AI worldwide.

The countries where respondents have higher expectations regarding the potential for AI to play a key role in our societies by 2073 are Japan (90%), Indonesia (89%), and South Africa (89%). The most skeptical countries in our survey are the United States (72%), the UK (73%), and Australia (74%). This points to a divide between, on the one hand, Asia and Africa and, on the other hand, the Anglo-Saxon sphere, where concerns about AI ethics appear to be more pronounced. In fact, these concerns are prominent enough in the latter regions to lead a relatively large portion of the population to believe that AI utilization will diminish.

From your perspective, which do you anticipate being the most influential drivers of change over the next 50 years?

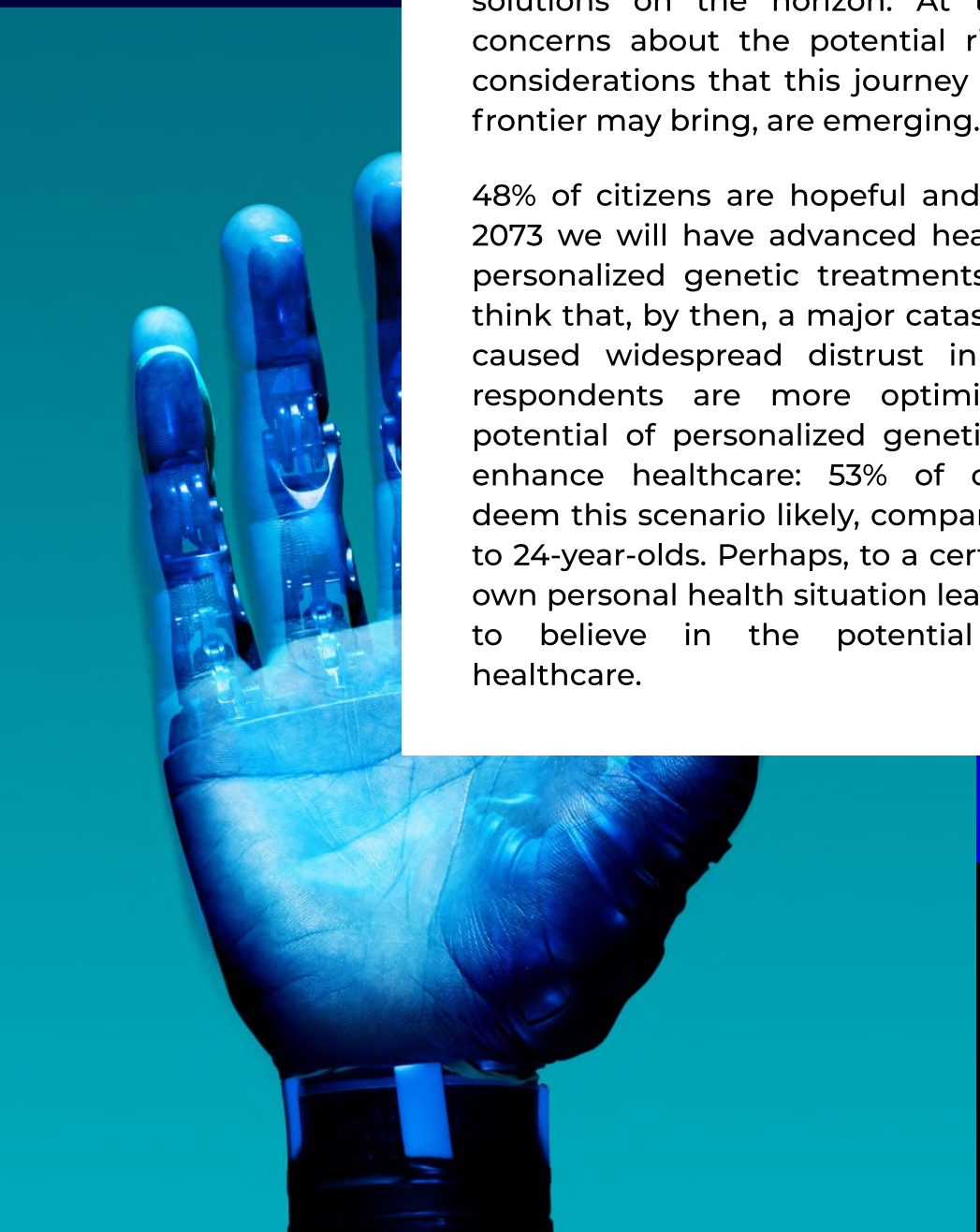
Digital transformation, in particular AI is one of the most influential drivers of change with a particular impact among disciplines such as ethics, governance, and law. Governments, companies, and institutions embracing technology, should go hand in hand with the concern for a more equal society. How can society benefit from the digital transformation while respecting ethical and legal issues in areas such as privacy, data protection, freedom of speech, consumers rights? And how can society use this digital immersion to build a more equal society, to promote the rule of law globally or to offer a broader access to justice worldwide? These are some of the most relevant questions we ask ourselves. The regulation of AI is key to guarantee its correct use, that will allow government, business, and institutions to gain efficiency and to grow and at the same time create a framework to limit the potential risks. Legal professionals will play a key role in creating and implementing the appropriate regulation, that will allow countries and companies to thrive using technology and AI and at the same time guarantee a trusted environment for innovation and change.

SOLEDAD ATIENZA BECERRIL
Dean of IE Law School

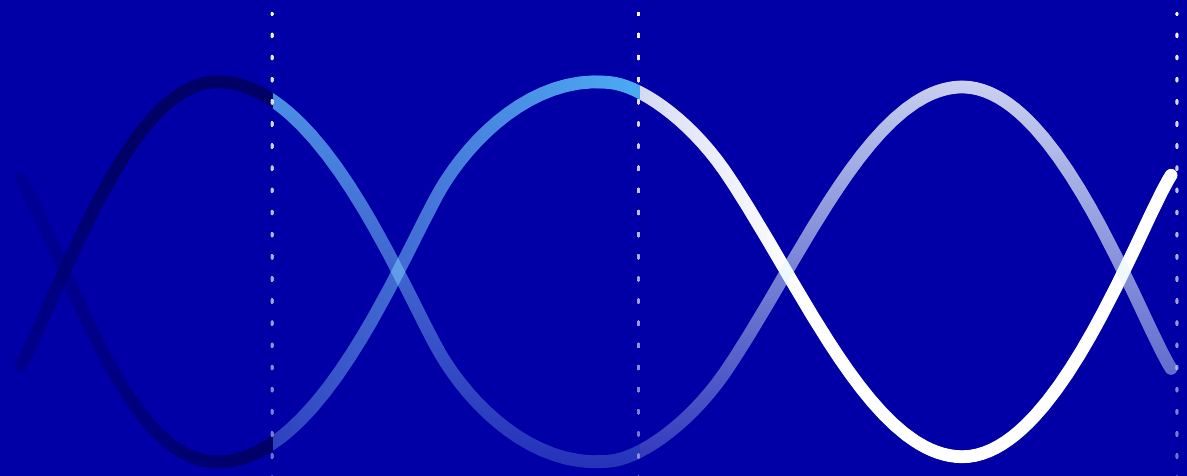
THE FUTURE OF HEALTHCARE

The evolving landscape of biotechnology holds the promise of reshaping not only healthcare but also the very fabric of our existence. The advancements in biotechnology bring high expectations, with the prospect of personalized genetic treatments and innovative medical solutions on the horizon. At the same time, concerns about the potential risks and ethical considerations that this journey into the biotech frontier may bring, are emerging.

48% of citizens are hopeful and believe that by 2073 we will have advanced healthcare through personalized genetic treatments. However, 30% think that, by then, a major catastrophe will have caused widespread distrust in biotech. Older respondents are more optimistic about the potential of personalized genetic treatments to enhance healthcare: 53% of over-65-year-olds deem this scenario likely, compared to 45% of 18- to 24-year-olds. Perhaps, to a certain extent, their own personal health situation leads them to want to believe in the potential for improved healthcare.



Q1.3.
Which of the following Biotechnology scenarios do you believe is most likely to occur by 2073?



22%
Strict regulations safeguard against

31%
A major catastrophe fosters widespread distrust in biotech

48%
Advanced healthcare through personalized genetic treatments

The relatively optimistic view reflected in our survey is, in fact, supported by a number of academic studies. For example, the Journal of Translational Medicine published in 2020 an article[21] that concluded that "the implementation of personalized medicine will result in more efficient and equitable healthcare, access to modern healthcare methods and improved control by individuals of their own health data, as well as economic development in the health sector."

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[21] Vicente, A.M., Ballensiefen, W. & Jönsson, JI. How personalised medicine will transform healthcare by 2030: the ICPerMed vision. J Transl Med 18, 180 (2020).

A DIGITAL AFTERLIFE

In recent years, the concept of a digital afterlife has gained attention as a topic of discussion both online and in popular culture. The idea revolves around the persistence of one's presence or consciousness on the internet after their physical demise. As our lives become increasingly intertwined with the digital realm, the notion of what happens to our online personas and data after we're gone has become a relevant subject of study. In fact, in a research article[22] published in Nature Human Behavior, ethicists from the Oxford Internet Institute argued in favor of treating people's digital "remains" as if they were physical human remains.

31% of citizens of G20 countries would like to have a digital afterlife presence. Considering the novelty, radical nature, and uncertainty of this concept, as well as the challenges in comprehending its implications, the fact that nearly one-third of respondents would accept it speaks volumes about its potential and the readiness of a significant portion of the population to embrace this journey.

[22] Öhman, C., Floridi, L. An ethical framework for the digital afterlife industry. Nat Hum Behav 2, 318–320 (2018).

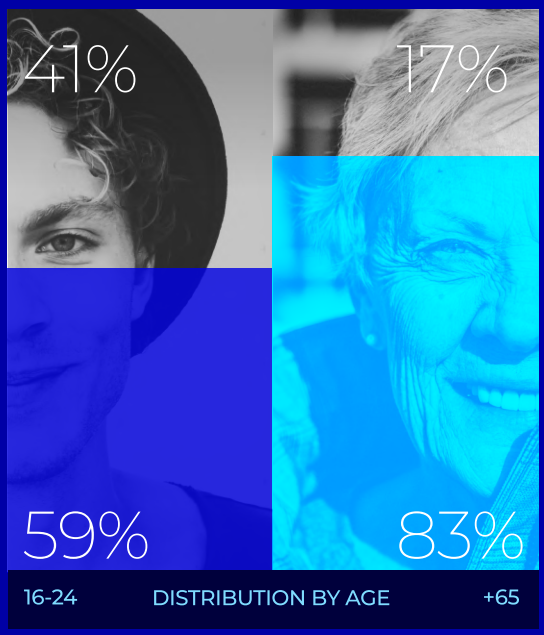
Q1.4.
If you were offered that after your death your presence or consciousness remained on the internet, would you accept?

31%

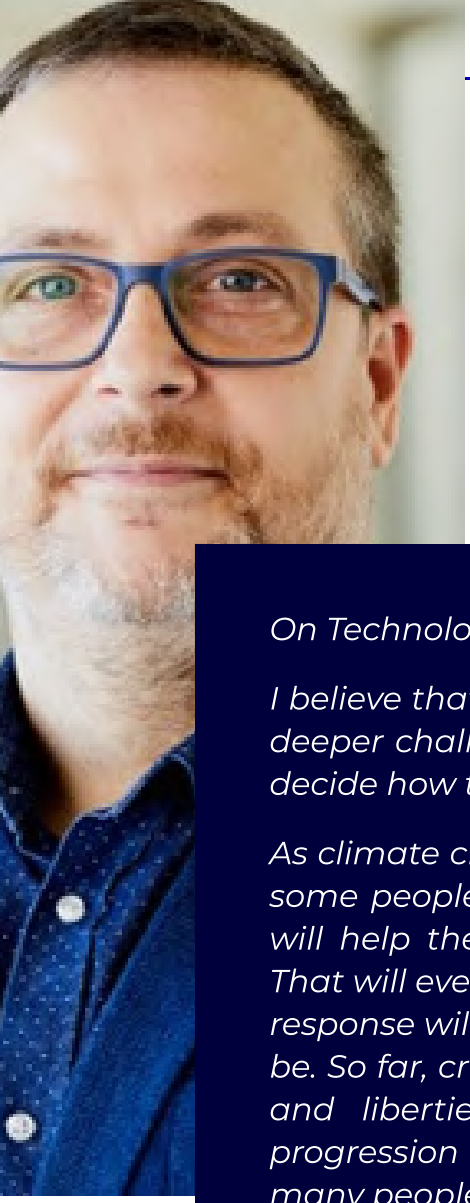
YES, I would like to have a digital afterlife presence.

69%

NO, I prefer not to have a digital presence after death.



The desire for a digital afterlife is particularly pronounced in two countries, China and India, where the majority of respondents express this preference, with figures reaching 64% and 62%, respectively. The countries where this prospect is the least appealing are Germany (only 13% would accept the afterlife option), the United Kingdom (16%), and France (18%). This points to a substantial divide on this matter between Asia and the western world. In terms of age, perhaps predictably, younger respondents are more willing to have their presence or consciousness on the internet after their death. 41% of those aged 18-24 would accept it, compared with only 17% of those aged over 65.



On Technological Challenges:

I believe that the four challenges that you present are facets of a deeper challenge, which is the fact that some people will get to decide how the future is going to be and others won't.

As climate crisis progresses and some resources become scarcer, some people (not everyone) will have access to technology that will help them to adapt better to the new worsening context. That will eventually trigger more social unrest and the most likely response will be an escalation in repression from the powers that be. So far, crises have been overwhelmingly used to curtail rights and liberties and, in more than a few cases, when this progression has been presented as a freedom for security trade many people have gone for security.

Ashis Nandy said long ago that the only fight left that is worth fighting, is the fight to keep the future free and open. So, for me the priority is to expand the future awareness as a starting point from which to deal with the rest.

Finally, I'm not totally convinced that we can discern future moral problems using current ethical parameters.

On Artificial Intelligence

I think that AI will be integrated in most aspects of our ordinary life long before 2073. If we analyze how fast the internet has changed our lives in 30 years, we must expect a similar situation for AI, even more so, given the hype and the high expectations we have of it.

One of the main traits of postnormal times is perplexity. Most of us do not have a clue about what is happening. And AI, in many senses, is a kind of 'great white hope' for many people to save the day. Its deployment will be problematic, and mistakes will occur frequently, but if the learning capacity of AI is true, it will be able to improve its performance enough to be widely accepted.

This does not preclude that it could be a tool for further social control. But I still believe that many people will be relieved that AI is at the wheel.

On the Future of Healthcare

I believe that the first and the second answers are not exclusive. It is possible that some kind of disaster may occur, but it's also possible that such an occurrence may just be a boost for biotechnology. In many senses, this is what happened with Covid. Right now, a great effort is being poured into personalized treatment, and it has a huge potential for diseases like cancer. Not only that, but these kind of treatments also open a big window of opportunity for prevention. In the process the need for new regulations may also emerge. But it is unlikely that it will really stop and, even if it does in areas like the EU, it will only mean that the research will move to other places.

On Digital Afterlife

There has been research on how to prolong our life for quite some time already, or, as in this case, to upload our personality to some sort of digital environment. At this point I think that this is just another concern for rich people. When so many people struggle to make ends meet, this seems a bit sarcastic, doesn't it? In other regards, it also makes me think of a sort of 'religion 2.0' development. Instead of going to paradise we can live in a tailored digital space. This, of course, raises the question of who takes care of the digital personas, under what conditions and for what price? At the end of the day, it is another form of future colonisation.

JORDI SERRA DEL PINO
Deputy Director at the Centre for Postnormal Policy & Futures Studies

CHAPTER 2

Economy and Prosperity

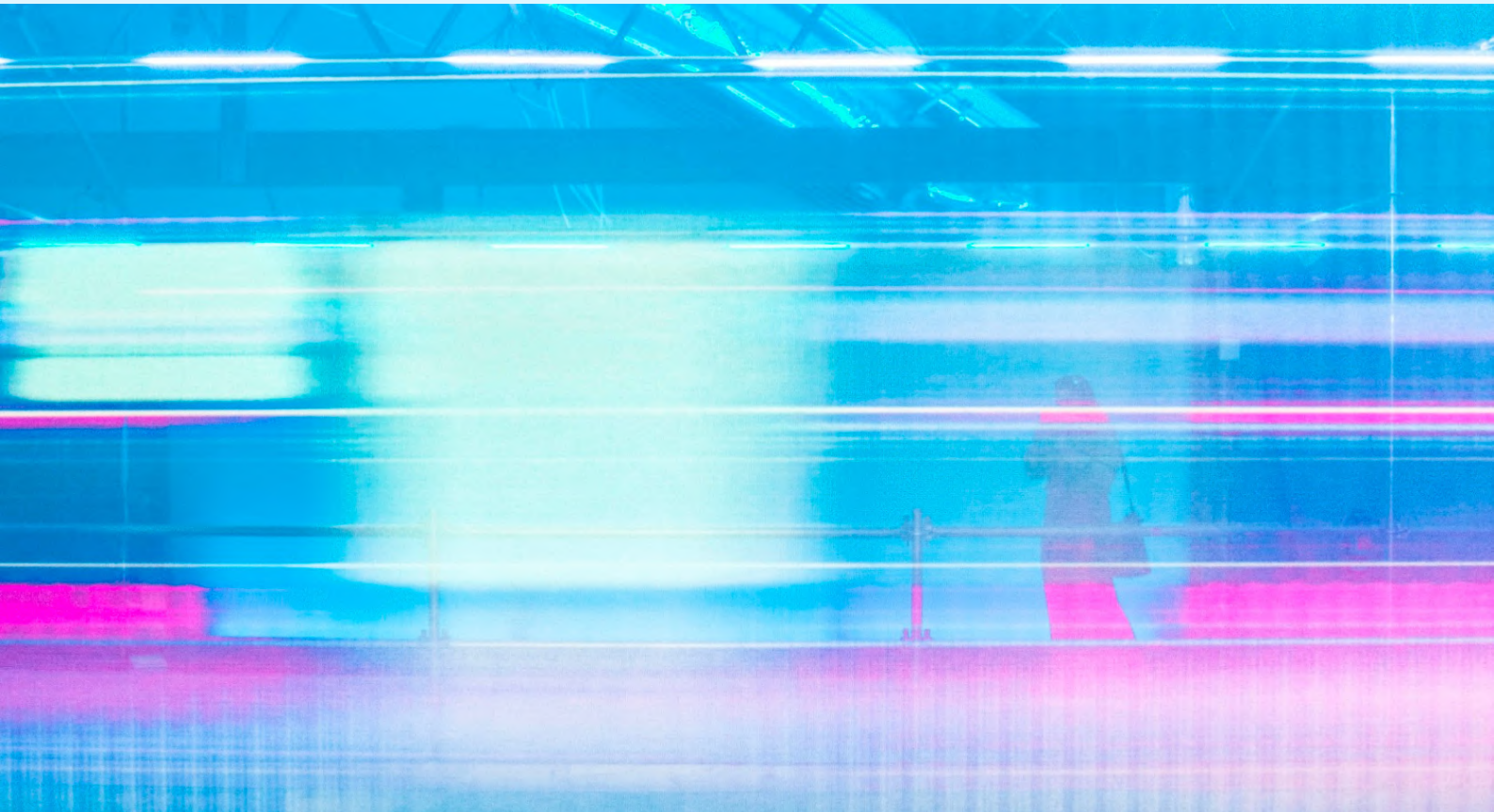
In the next 50 years, the G20 economies will undergo a profound transformation, one in which technology will play a pivotal role. This section explores various dimensions of this economic future, encompassing wealth distribution, financial prospects, and the evolving nature of work. It offers a glimpse into the potential geopolitical shifts that lie ahead, painting a picture of the technology-driven economic landscape that awaits future generations.

A substantial percentage of G20 citizens envisions a more prosperous future for themselves and their country, yet a noticeable North-South divide emerges, with the latter showing greater optimism. Amidst increasing disparity in wealth distribution across many G20 countries, there is a prevailing consensus among citizens that the economy will become even more unequal over the next five decades. To navigate these uncertainties, citizens are considering different resilience strategies, such as learning new skills and increased technological literacy.

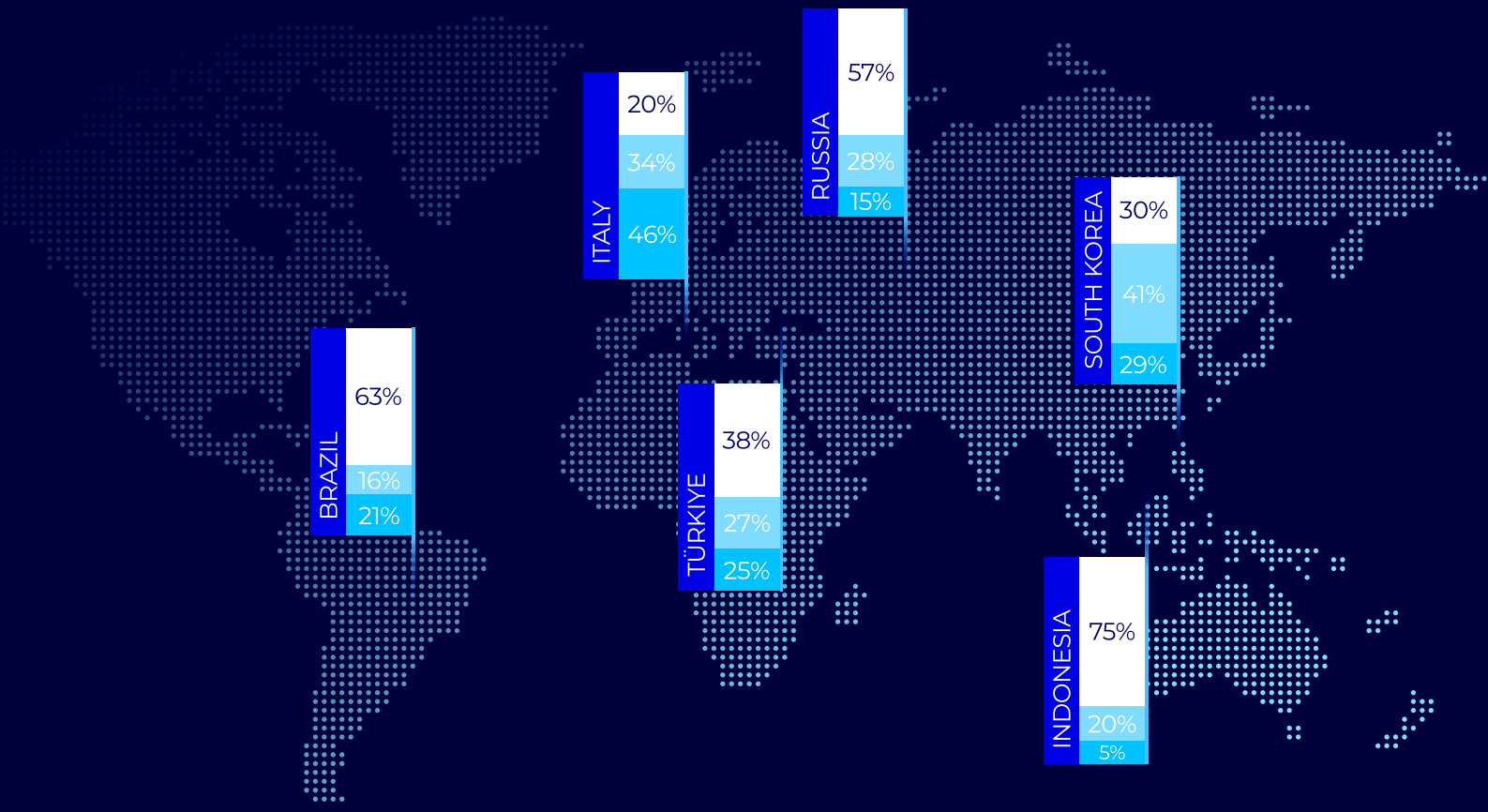
FINANCIAL FUTURES

The financial aspirations and projected personal scenarios of citizens can profoundly influence the economic trajectory of a nation; these perceptions guide behaviors such as investment, saving, and consumption. We observe a relatively optimistic outlook, especially among BRICS citizens, within the G20 nations.

A larger proportion of citizens (39%) hold the belief that they and their descendants will be richer in the next 50 years, surpassing the number of citizens (25%) who anticipate a decline in their financial well-being. Notably, Indonesians are the most optimistic about their financial future, with 75% sharing this positive view. In contrast, nearly half of both French (47%) and Italians (46 %), along with 41% of Spanish respondents, anticipate a decline in their financial well-being.



Q1.2.
How do you think the financial situation will change for you and your descendants by 2073?



Richer

Remains similar

Poorer

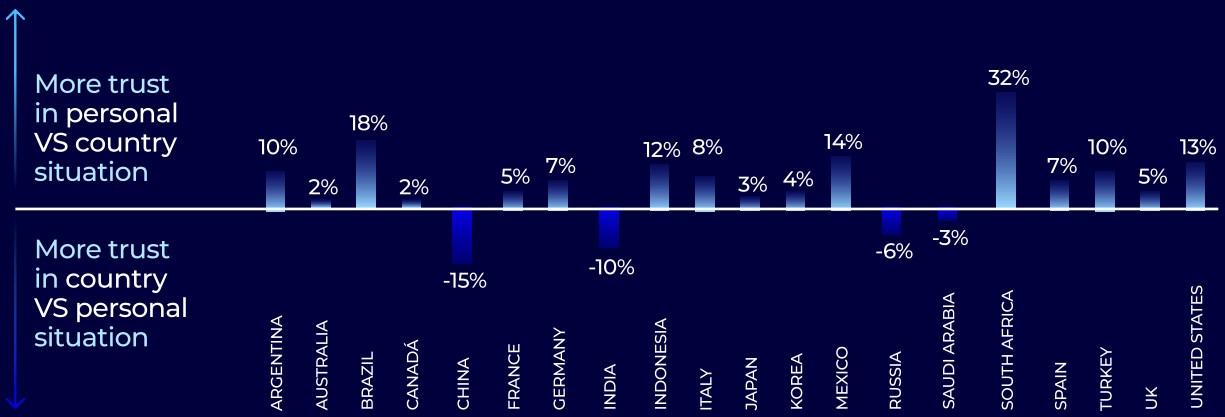
These figures are somewhat linked to the current economic situation of their countries: we found a moderate positive correlation between citizens' financial optimism and the projected economic growth of their nations. We compared the percentage of citizens who believe they or their descendants will be wealthier in the next 50 years with the International Monetary Fund's (IMF) projected annual growth rate for 2023. The Spearman's Rank Correlation coefficient was found to be approximately 0.5667[23].

However, the perception of one's personal economic future and that of their country can sometimes diverge significantly, as seen in the contrasting views of

Chinese citizens are optimistic about their nation's economic trajectory, with 82% believing that China will be wealthier by 2073. However, when it comes to their personal financial outlook, fewer (67%) anticipate an improvement. This suggests confidence in the nation's macroeconomic policies and growth potential, but reservations about individual prosperity. Conversely, in South Africa, there's a stronger belief in personal or familial economic advancement than in the nation's overall economic future.

[23] In this analysis, Spearman's rank correlation coefficient (ρ) was computed using the formula:
$\rho = 1 - 6\Sigma d^2 / [n(n^2 - 1)]$, where d represents squared differences between ranked values, and n is the number of countries (20 in this case). The resulting ρ was approximately 0.5667, indicating a moderate correlation between citizens' optimism and IMF's 2023 projected growth rates. To assess its significance, ρ was converted into a t-value using the formula: $t = (\rho\sqrt{[n-2]}) / \sqrt{(1-\rho^2)}$. With 18 degrees of freedom, the calculated t-value (2.404) exceeded the critical value (approximately 2.101), confirming a statistically significant correlation between public sentiment and economic projections for the surveyed countries.
[DG1]In the 29 footnote, make sure that formulas are not cut in different lines.

Difference between the % of citizens who think that they will be richer and the % of citizens who think that their country will be richer



In this graph, a positive figure means a higher percentage of individuals who think that they or their descendants will be richer, compared to percentage of individuals who think that their country will be richer. A negative percentage, on the contrary, means a higher percentage of individuals who think that their country will be richer compared to percentage of individuals who think that they or their descendants will be richer.

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Respondents hailing from countries such as Indonesia, India, China, or Saudi Arabia exhibit a robust sense of optimism when it comes to the future. This optimism is closely intertwined with the remarkable economic growth and sweeping reforms that these countries are currently undergoing. They are not only hopeful about their personal prospects but also enthusiastic about the overall prosperity of their nations.

However, the situation is notably more nuanced in other countries situated in the Global South, including Brazil, South Africa, and Mexico. While their citizens do express some optimism about their individual futures, their hope for the broader trajectory of their countries appears to be somewhat more cautious. This nuanced perspective is shaped significantly by the events of the past decade in each of these countries, which have left a lasting imprint on the minds of these respondents. For countries that have grappled with high inflation, such as Turkey, or faced challenges in pandemic management, as seen in the United States, Brazil, Spain or Italy, the survey results indicate a notable sense of pessimism. In cases like Japan, which has dealt with stagflation, a similar sentiment of uncertainty and concern prevails among most respondents.

The results concerning Russia stand out as particularly intriguing. They may signify a substantial disconnect between the prevailing mainstream narratives and the actual sentiments of the Russian population. It is equally astonishing to see that age and gender do not necessarily generate in most countries a major difference of views on issues such as inequality and environmental urgencies. These incongruities underscore the importance of delving deeper into the complex factors influencing the perceptions and hopes of people in different regions. Yet, what makes this global shift in outlook even more

GLEN WEYL
Head of Web3 research at Microsoft
and Founder of RadicalxChange

compelling is the pivot of the world economy towards Asia. This shift has far-reaching consequences, which are perhaps most apparent in European perceptions. The future of work is intricately linked to these sentiments. The optimism or pessimism of these diverse populations has a direct impact on how they view their roles and prospects in the evolving global workforce. It highlights the need for policymakers and businesses to consider these nuanced perspectives when charting the path forward, and underscores the critical role of effective governance, economic management, and global cooperation in shaping the future of work in this rapidly changing world.

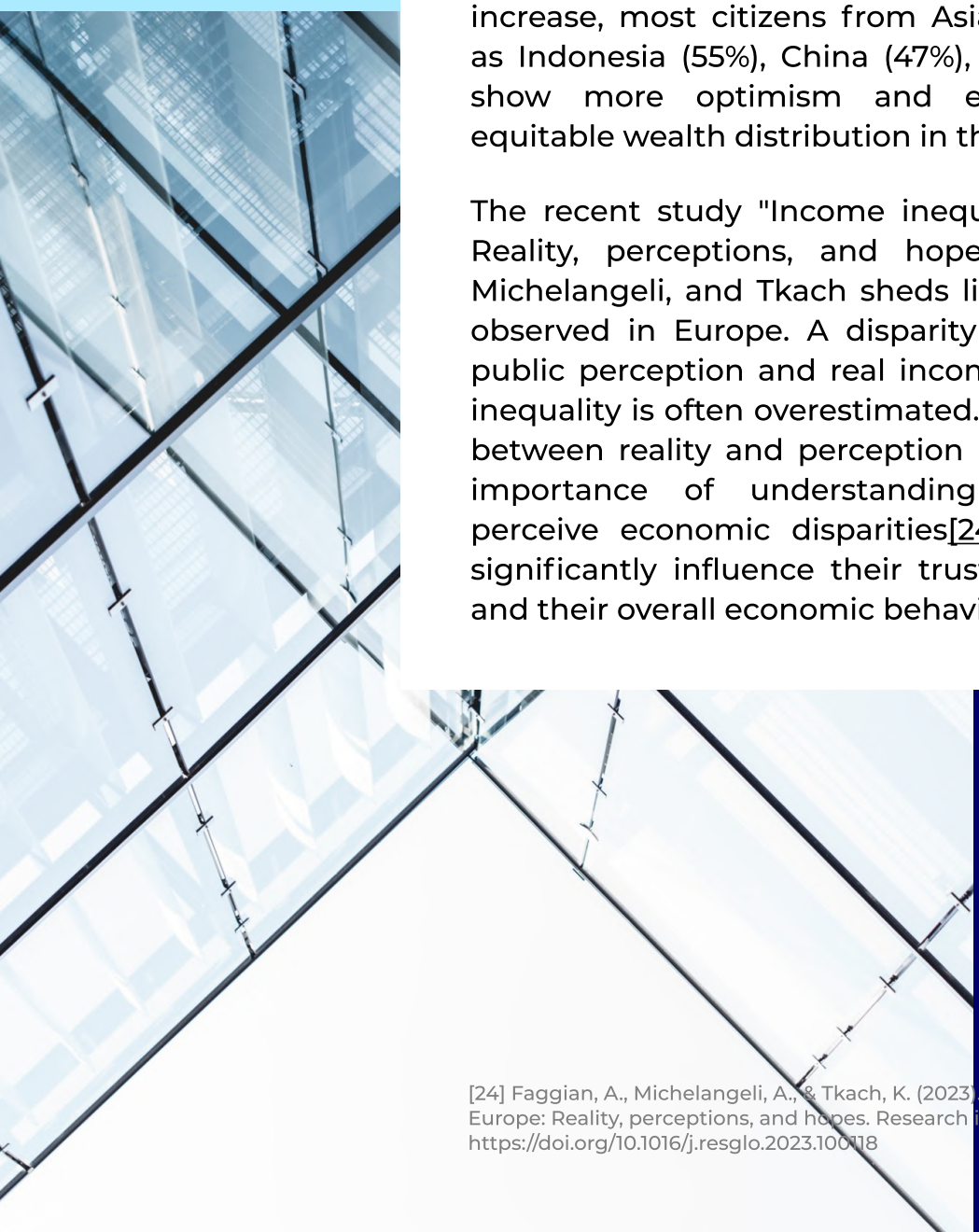
Demography significantly shapes global perspectives. The age composition of populations plays a pivotal role in how individuals perceive change; in aging, affluent societies, there's often a predilection to safeguard savings, while younger, less affluent nations actively court investment. However, this demographic transformation is not limited to population age alone. It is also intertwined with technological dimensions, exemplified by the rise of Artificial Intelligence (AI), which offers both flatter opportunities for new and emerging players and, but paradoxically, could provoke an even higher concentration of wealth if regulatory models minimize promotion of public goods. Climate change and inequality, two potent global challenges, are driving this shift, demanding a redefined approach to world economic regulation. This emerging paradigm acknowledges that the way we deal with risk has to dramatically evolve. The consequences of neglecting any of these aspects can be dire. Consequently, it calls for comprehensive, integrated policies that consider these multifarious factors and reflect the intertwined fate of both people and the planet. The advent of AI is an exemplar of this complexity, where harnessing its potential for broader societal benefit while mitigating its potential to exacerbate wealth disparities becomes a paramount concern in navigating the evolving global economic landscape.

CARLOS LOPES
Honorary Professor at the Nelson Mandela School of Public Governance of the University of Cape Town

THE DISTRIBUTION OF WEALTH

There is a consensus among G20 citizens: wealth will be more unequally distributed in the next half-century. 49% of respondents think that the economy will become more unequal, but disparities between Asian and Western nations once more emerge. While a majority of citizens of European countries such as Spain (73%), Germany (68%) and France (63%) believe inequality will increase, most citizens from Asian nations such as Indonesia (55%), China (47%), and India (45%) show more optimism and expect a more equitable wealth distribution in the coming years.

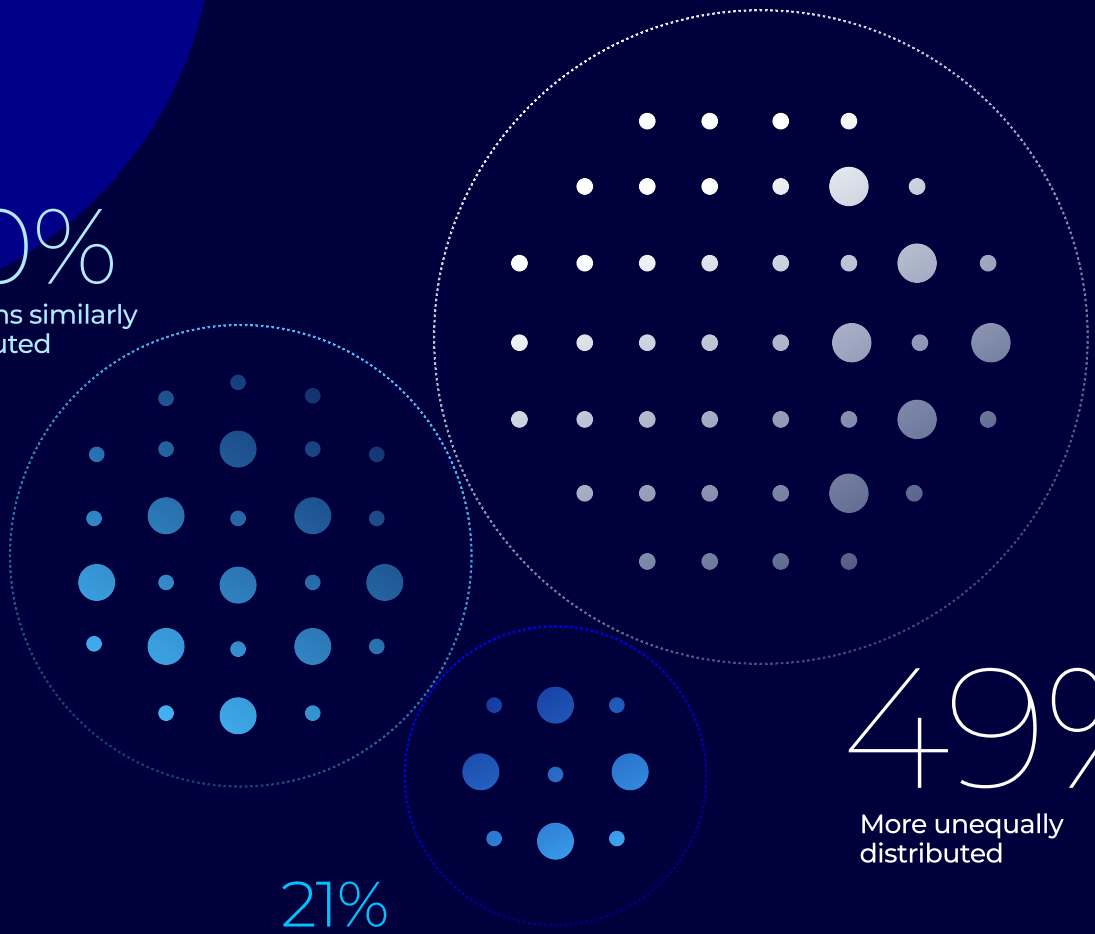
The recent study "Income inequality in Europe: Reality, perceptions, and hopes" by Faggian, Michelangeli, and Tkach sheds light on the data observed in Europe. A disparity exists between public perception and real income inequality, as inequality is often overestimated. This divergence between reality and perception underscores the importance of understanding how citizens perceive economic disparities[24], as they can significantly influence their trust in institutions, and their overall economic behavior.



[24] Faggian, A., Michelangeli, A., & Tkach, K. (2023). Income inequality in Europe: Reality, perceptions, and hopes. Research in Globalization, 6, 100118. https://doi.org/10.1016/j.resglo.2023.100118

Q2.2.

How do you anticipate the distribution of wealth in society to change by the year 2073 compared to the present? Please choose the option that best aligns with your expectations



30%
Remains similarly distributed

49%
More unequally distributed

21%
More equally distributed

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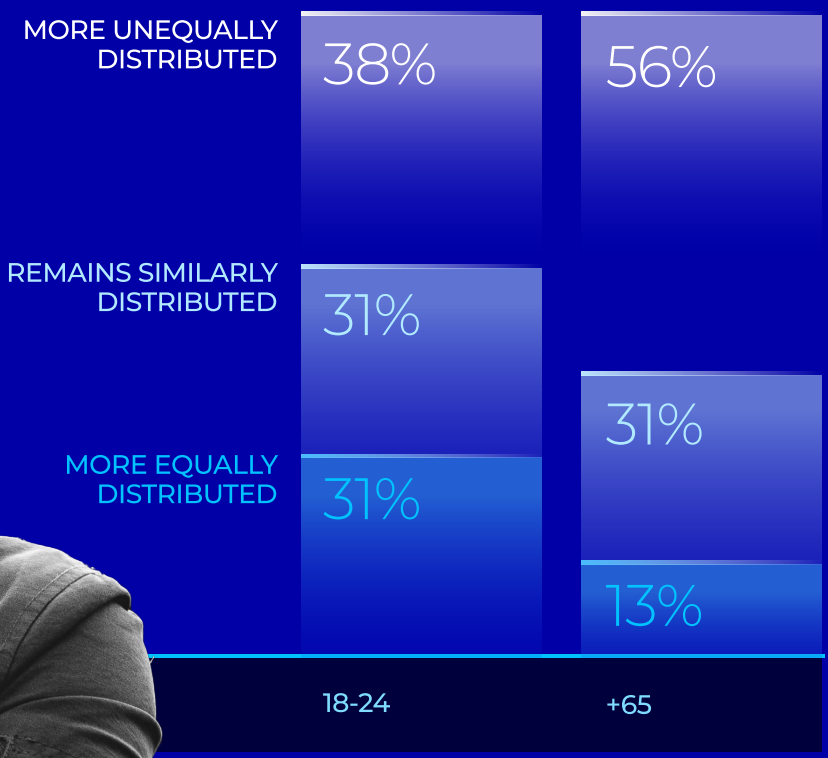
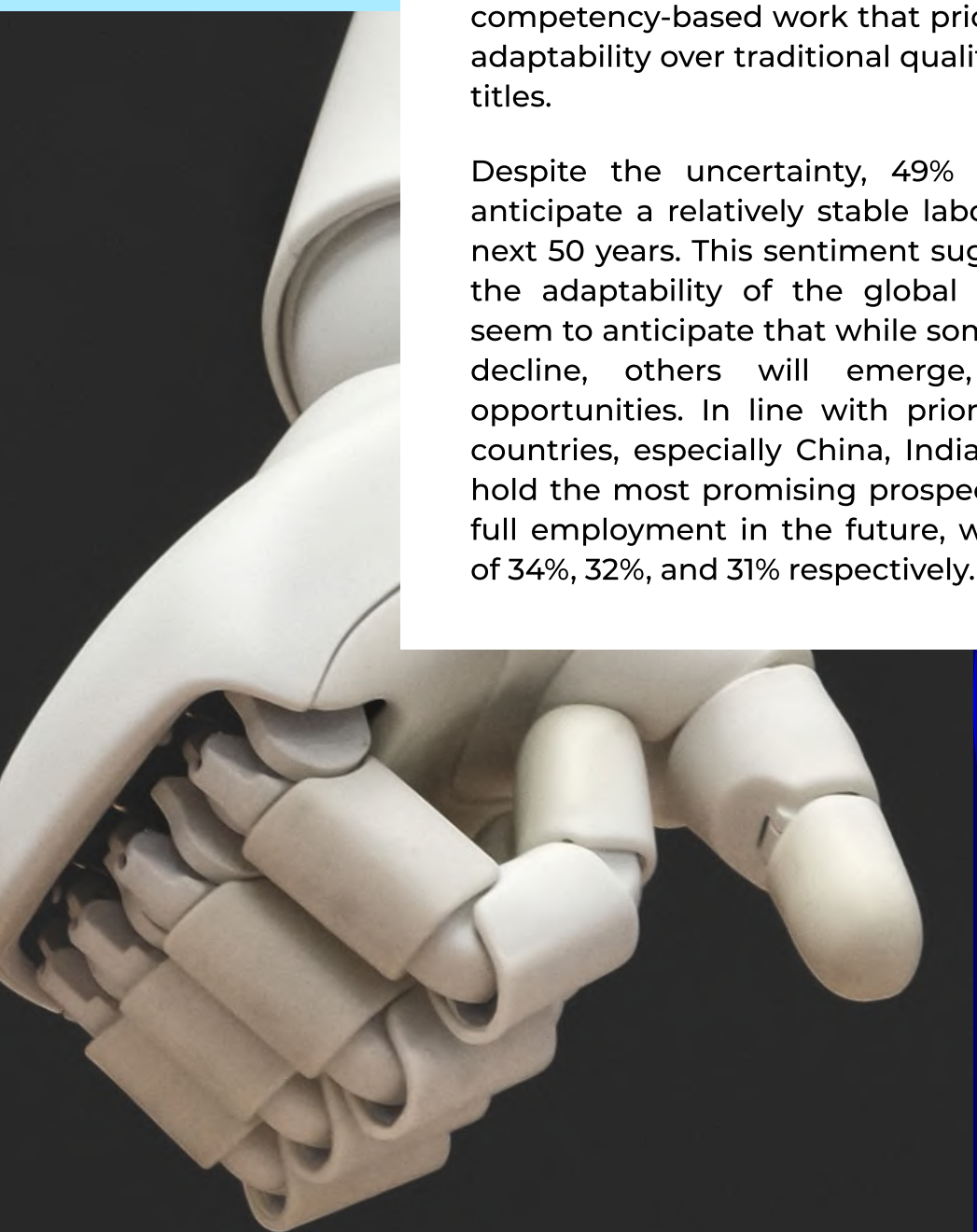
Regarding age distribution, younger cohorts exhibit greater optimism compared to seniors. Among citizens aged 18 to 24, only 38% foresee a more unequal economy, while this number increases to 56% among those over 65. The younger generation, having grown up in an era of rapid technological change and global interconnectedness, may be more attuned to the possibilities of a more equitable future. Their optimism could be fueled by their exposure to global movements advocating for equality, their faith in technology as a leveling force, and a belief in their collective power to bring about change.



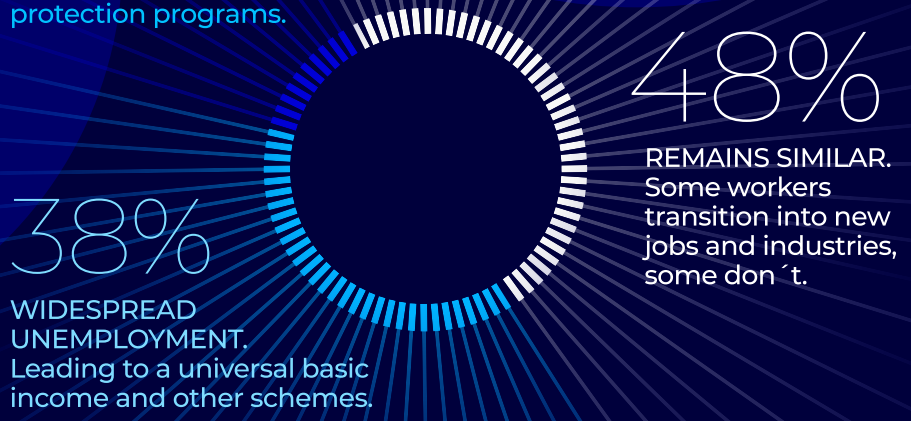
A NEW WORLD OF WORK

Much has been written about the future of employment and work. Technology's relentless march is poised to usher in profound transformations that promise to reshape the way we work, the jobs we do, and the skills we need. Amidst the uncertainty, there is increased concern about the possibility of growing unemployment, with a potential shift towards competency-based work that prioritizes skills and adaptability over traditional qualifications and job titles.

Despite the uncertainty, 49% of G20 citizens anticipate a relatively stable labor market in the next 50 years. This sentiment suggests a belief in the adaptability of the global workforce. They seem to anticipate that while some sectors might decline, others will emerge, offering new opportunities. In line with prior findings, Asian countries, especially China, India, and Indonesia, hold the most promising prospects for achieving full employment in the future, with percentages of 34%, 32%, and 31% respectively.



Q2.3.
How do you think work and employment will look in 50 years?



However, a significant 38% of G20 respondents harbor concerns about mass unemployment. This sizable portion of pessimism might be influenced by the rapid pace of technological advancements, such as automation and AI. The fear could be that these technologies might displace more jobs than they create, leading to heightened unemployment. Those citizens who foresee mass unemployment, especially in countries like South Africa (57%) and Turkey (55%), might be responding to current socio-economic challenges. South Africa, for instance, has historically grappled with high unemployment rates, and Turkey has faced economic volatility in recent years.

From your perspective, which do you anticipate being the most influential drivers of change over the next 50 years?

In the next 50 years we will see major disruption in the way we work. I envision a new world of work guided by five transformative drivers: competencies as currency, a networked project-based economy, projective work that fosters a new concept of work-life fusion, and the quantification of human performance that will foster new levels of performance and well-being. We will cease to be defined by our titles and job role labels. Instead, a globally recognized taxonomy of skills stored in digital ledgers will become a currency that defines our professional value. This competency-based currency will lead to the emergence of a truly project-based economy with algorithmically regulated bots matching people and projects in a merit-based marketplace of work. Spatial computing technologies will allow us to engage in "projective work" in which we carry out our projects collaboratively in rich digital environments while being physically present in hubs where we choose to spend our time based on social and professional affinities – the guilds of the future where our professional and personal lives are fused. And in this new world, psychophysical and sociometric devices will lead to a new age of self-quantification providing us with data to optimize our well-being and daily performance.

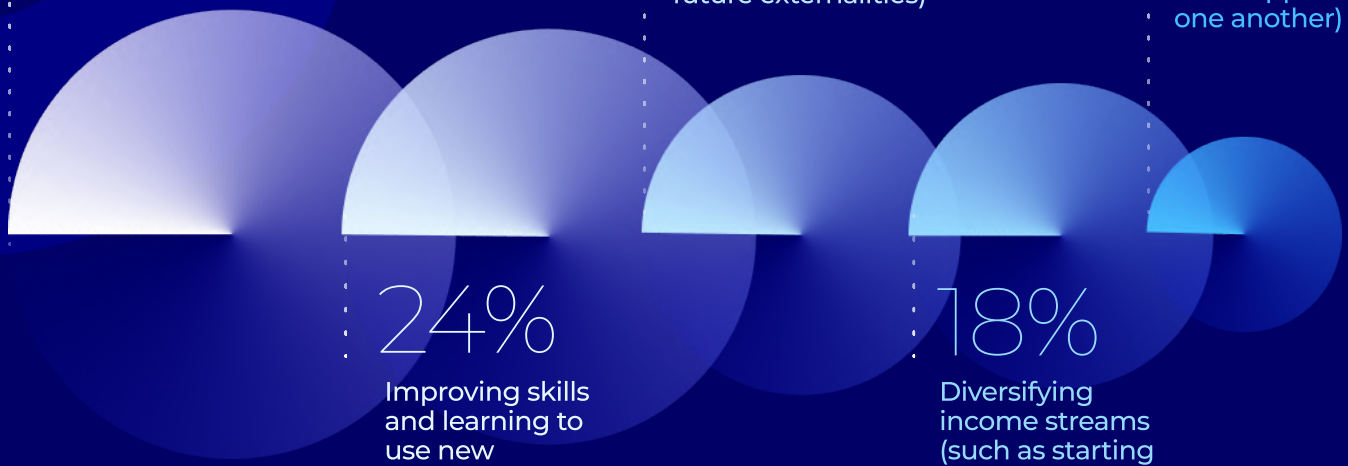
LEE NEWMAN
Dean of IE Business School

BUILDING RESILIENCE

Economic foresight surveying's most valuable contribution lies in its ability to measure resilience, offering insights into how individuals and communities prepare for and navigate evolving economic scenarios. The foundation for these insights is the "Livelihoods and Economic Recovery (LER) Framework" by the International Labour Organization (ILO). This framework, which our survey adapted, focuses on individuals' abilities to rebuild, and enhance their economic standing after crises.

To prepare for the potential economic challenges of the future, G20 citizens place a strong emphasis on savings and investments, highlighting the traditional focus on financial security. However, they also recognize the importance of enhancing their skills and learning new technologies, reflecting the growing need to remain relevant in a digitally driven world.

Q2.4.
Which measures are you considering adopting to prepare for the potential economic challenges of the future?



27%
Saving money or investing

19%
Switching to sustaintability (adopting eco-friendly practices to reduce future externalities)

12%
Strengthening community ties (participating in local groups that support one another)

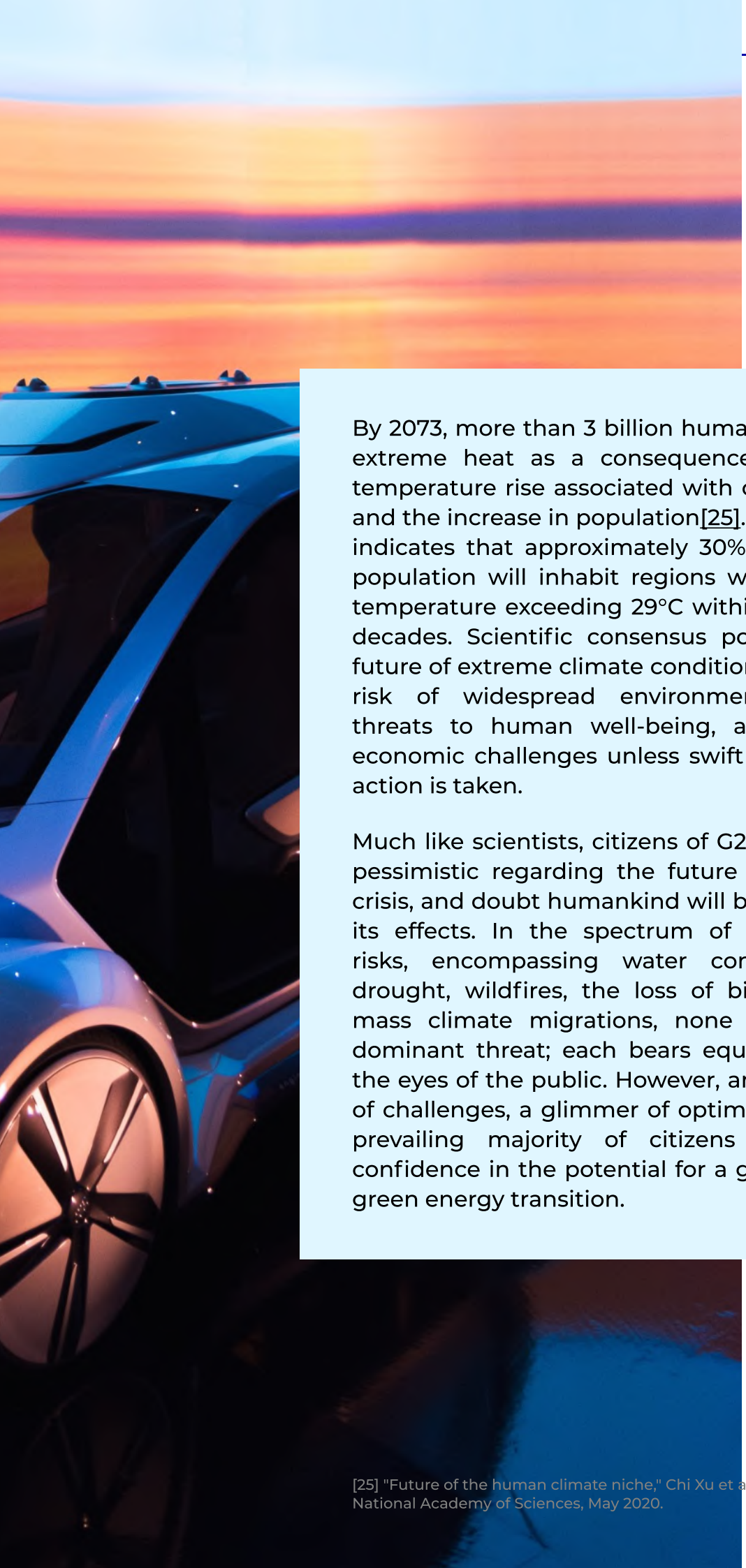
24%
Improving skills and learning to use new technologies

18%
Diversifying income streams (such as starting a side business)

27% of respondents consider saving money, while 24% prioritize skill enhancement and embracing new technologies. Sustainable practices, favored by 23% of those aged 65 and above, indicate a growing consciousness about sustainability to reduce future externalities among the older generation. In contrast, the younger demographic also favors diversifying income streams (19%), suggesting their adaptability and openness to varied economic avenues.

CHAPTER 3

Environment and Climate Crisis



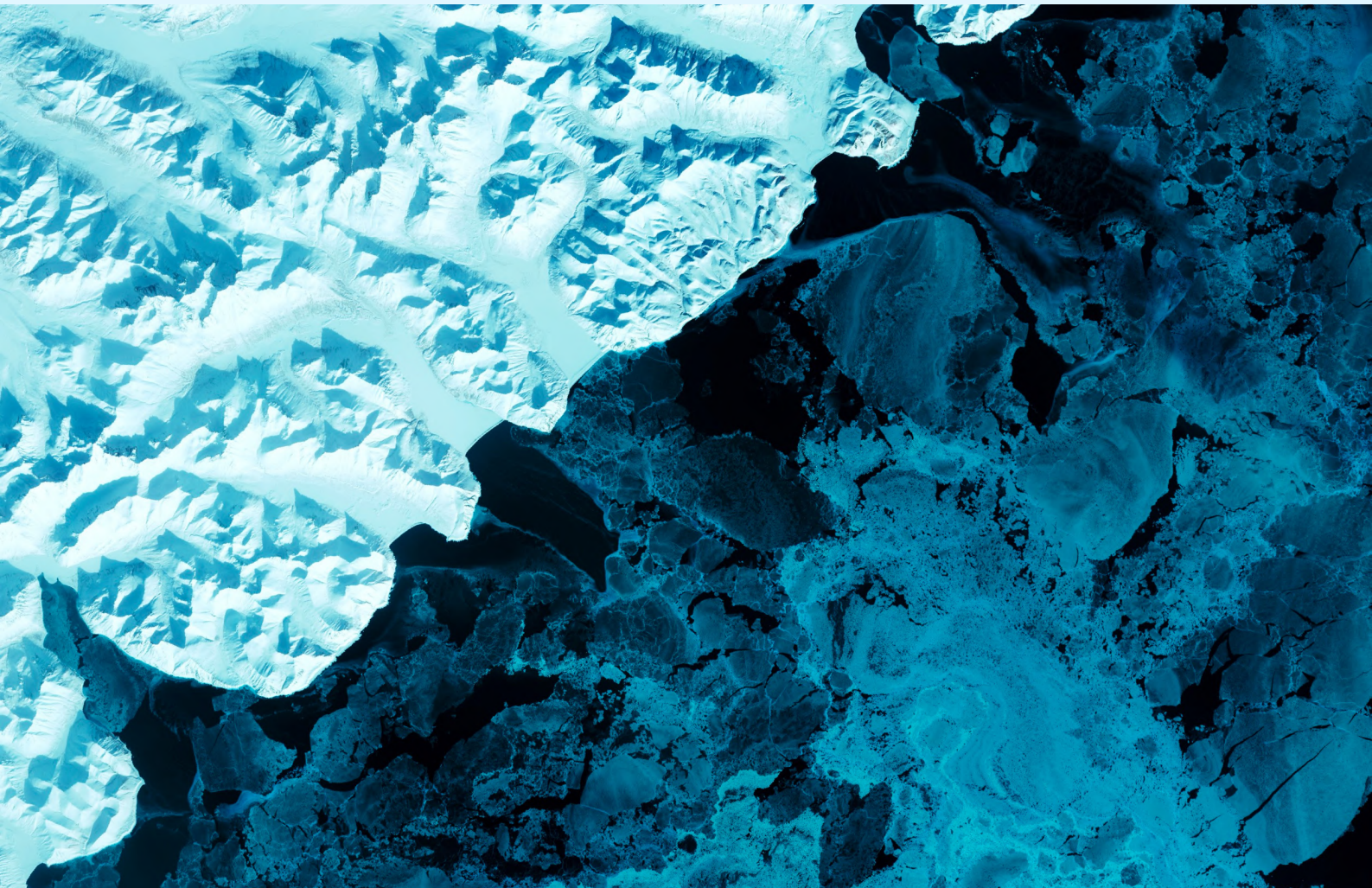
By 2073, more than 3 billion humans could live in extreme heat as a consequence of the rapid temperature rise associated with climate change and the increase in population[25]. This projection indicates that approximately 30% of the world's population will inhabit regions with an average temperature exceeding 29°C within the next five decades. Scientific consensus portends a grim future of extreme climate conditions, carrying the risk of widespread environmental upheaval, threats to human well-being, and substantial economic challenges unless swift and persistent action is taken.

Much like scientists, citizens of G20 countries are pessimistic regarding the future of the climate crisis, and doubt humankind will be able to revert its effects. In the spectrum of climate-related risks, encompassing water conflicts due to drought, wildfires, the loss of biodiversity, and mass climate migrations, none emerges as a dominant threat; each bears equal relevance in the eyes of the public. However, amidst this array of challenges, a glimmer of optimism arises, as a prevailing majority of citizens express their confidence in the potential for a government-led green energy transition.

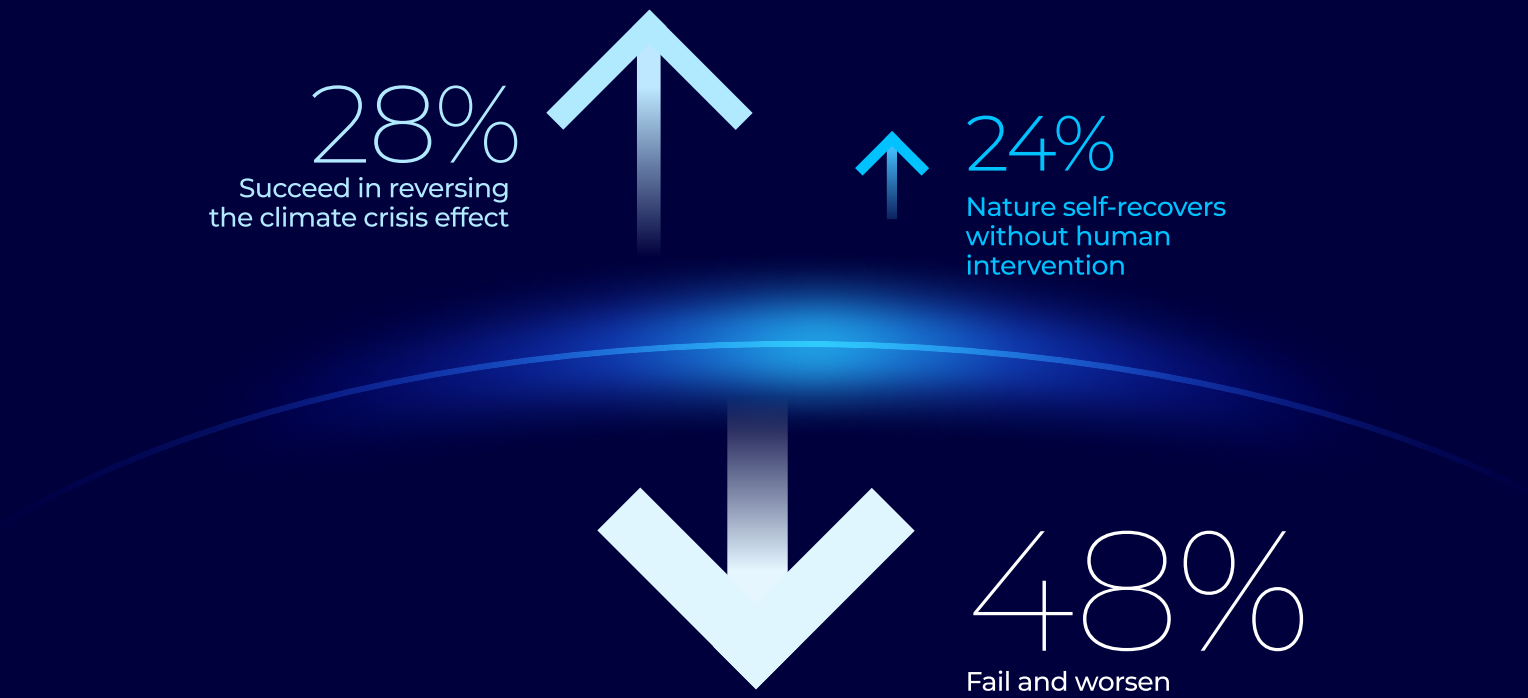
[25] "Future of the human climate niche," Chi Xu et al., Proceedings of the National Academy of Sciences, May 2020.

A CLIMATE RACE AGAINST THE CLOCK

Results from the survey depict a pessimistic global outlook on climate change. A notable 48% of respondents foresee a deterioration in the environmental situation over the next 50 years, surpassing the 24% who place their faith in nature's resilience, and the 28% who believe in the potential of human intervention to reverse the effects of climate change. This suggests that current efforts to combat climate change might be perceived as insufficient or ineffective, and reflects concerns that international cooperation and policy implementation might not be keeping pace with the urgency of the issue.



Q3.1.
Scientific consensus is that human activities are the primary cause of the current climate crisis. How do you think the environmental situation will evolve?



Consistently with previous findings, it is Asian countries that exhibit a more optimistic outlook for the future, with a higher percentage of Chinese and Indian citizens believing that we will successfully mitigate the effects of the climate crisis. Their belief might be anchored in the advancements in green technology, renewable energy, and global climate initiatives. China's standout figure, with over half its population (53%) expressing this view, is particularly noteworthy, given China's significant investments in renewable energy.

In an era where declinist narratives are under attack, making society suspicious of climate change is something real and pervasive. In fact, recent literature in climate education pedagogy (Ojala 2016), suggests that apocalyptic narrative of the end of the world, makes students less likely to mobilize and organize against climate change. Yet from the results of this global survey, we see nodes of difference. Where respondents across gender are wrestling with more 'end of the world' narratives of climate change, for example, 48% think the climate crisis will worsen, with 50% of women seeing the crisis as worsening, and yet 60% of respondents are actively seeking that the world adopt a regulated, renewable energy paradigm. Their acknowledgment that, across the board, climate change will cause water conflicts, mass extinction events, and the rupture of the global food supply, does not make people less inclined to believe that climate change is a pressing issue, nor does it make them against governmental regulation or actions taken to mitigate the crisis. This seems especially pertinent when we take gender into account, as even though women remain on the frontlines of climate activism, 50% of women believe that climate crisis will worsen. This suggests that doom and gloom stories can even mobilize populations to action against climate change.

From the shared survey results then, it seems likely that the political economy of big oil and its global power structures may be able to be toppled with broad support of renewable energy choices over the next 50 years. Yet, it is unclear what new equity questions will arise, as we know for example, that the increase in solar energy battery production has only created a host of new toxins for women in the Dominican Republic and other areas (Garcia 2022). While it seems likely that the push for renewables

will finally get the support it is due, consider how even with the 1970s oil crisis, the push for solar energy was effectively shut down by the U.S. government, and that we will need to keep global climate and environmental justice questions in mind. If renewable energy becomes the new big oil, who will benefit and who will be harmed? Are there ways to avoid the environmental and social equity issues that arose during our transition to gas and oil, that we can be attentive to as we make the popular transition to renewables?

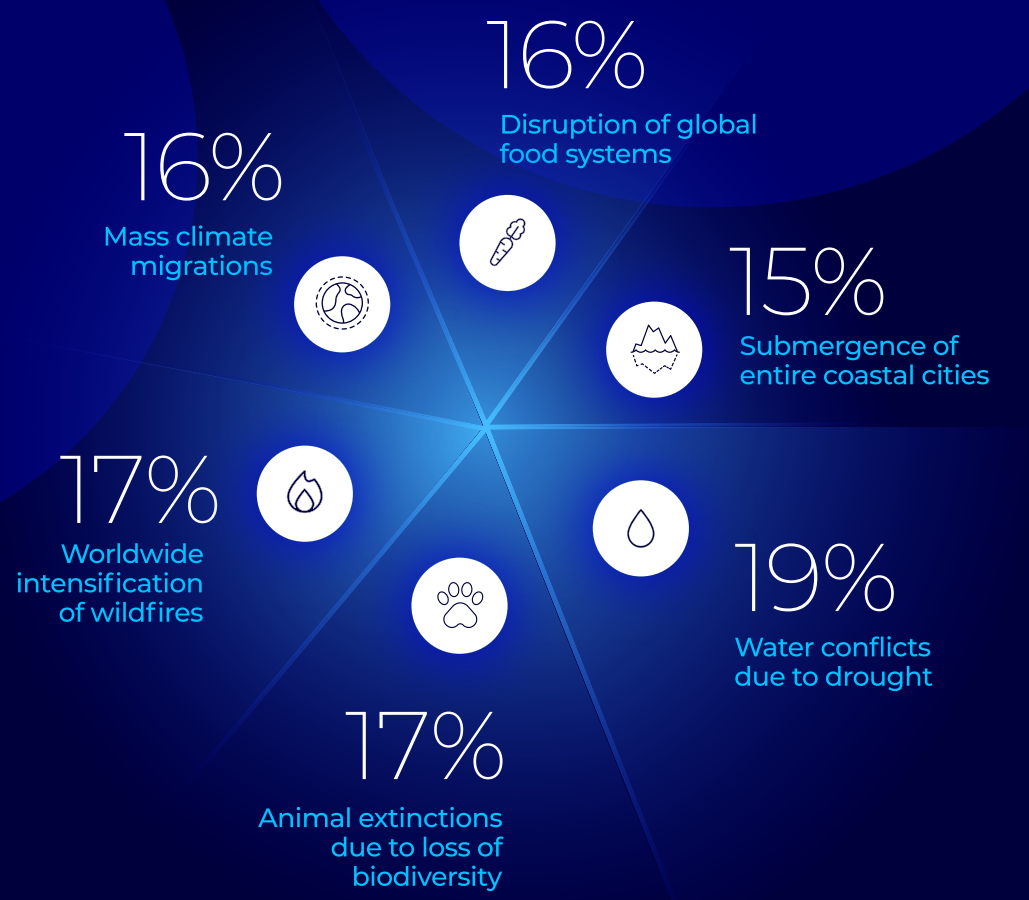
TEONA WILLIAMS
Presidential Postdoctoral Fellow
in the Department of Geography
at Rutgers University

CLIMATE-RELATED THREATS

Citizens hold an equal level of concern for various climate risks, including water conflicts, wildfires, animal extinctions, mass climate migrations, and disruptions in food systems, among others. This uniform distribution of responses remains consistent across countries, genders, and age groups, signifying a global awareness of these threats.

Q3.2.

Looking ahead to the year 2073, please consider the following potential climate risks. Could you rank them in order of what you perceive to be the most likely to least likely to materialize by that time?



The absence of a singular, dominant climate-related concern underscores the diverse and multifaceted nature of risks associated with the climate crisis, challenging the prevailing focus on climate change. This underscores the necessity for a more holistic approach that encompasses the wide spectrum of climate-related challenges, some of which are sometimes overlooked in environmental actions.

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Rejecting climate doomsday thinking, Solarpunk emerged in 2008 as a movement on a mission for positive ecological and social change. Solarpunk set out to envision: "what does a sustainable civilization look like, and how can we get there?" In this scenario, humanity succeeds in solving major challenges by viewing nature and community as an interconnected whole. The future is plural, meaning that there isn't just one but several scenarios playing out simultaneously. Now, let's explore some scenarios for 2073: EDUTOPIA and SUPERHUMAN. By then the Gen Zs and Greta Thunberg are well into their seventies. Now imagine: What might their world look like?

In EDUTOPIA, fair progress is valued over private interests

Collaboration is the norm for global problem solving. Edutopian culture continually challenges the status quo and has a clear social strategy to embed diversity into every corner of society. In education, STEM has fully evolved into STE(A)M, integrating the arts to foster diverse and inclusive ecosystems. Curiosity, Creativity, Collaboration, and Circular principles are a given.

Artisans, artists, designers and engineers work closely with the public and private sectors, and citizens to establish a democratic framework for ethics, skills and lifelong learning. The world's first open-source Digital Constitution is a reality to ensure technological progress remain human-centric, fair and ethical.

In Edutopia, long-term and systems thinking are core requirements, but next-level resilience can present a barrier to reach Edutopia 2.0. Some think that with 'too much talk', we risk missing the window to act.

Q: IMAGINE EDUTOPIAN LIVING: "How can we take action today to push Edutopian thinking and co-create a global Digital Constitution?" "Is regulation a barrier or an enabler of innovation?"

SUPERHUMAN societies prioritize efficiency, economic growth, and autonomy

Tech is perceived to enhance human and social capabilities. Interactive environments push the boundaries of AI to provide real-time super-learning, health, and wellbeing with instant self-improvement feedback. Most engage in Superhuman AI dialogue to nurture mental hygiene. Individuals shape their own norms for 'transformative' technologies – some use them to reach a 'spiritual superintelligence'.

Geoengineering and nuclear fusion are seen as viable solutions to climate change. Superhumans innovate in an ecosystem of self-governed, independent actors and AI-based blockchains act as a personal meta-conscience and moral compass while being a warrant for interaction and trade. Politics and strategies are tested in immersive simulations to ensure long-term positive impact.

AI intellectuals have acquired an almost mythical status. The Center for Multidimensional Growth was set up as an open-source AI forum to reconcile sovereignty with accountability and responsibility.

Q: IMAGINE SUPERHUMAN LIVING: "With tech as a powerful source for innovation, how do we ensure human-centric solutions?" "What can be done to foster more accountability?"

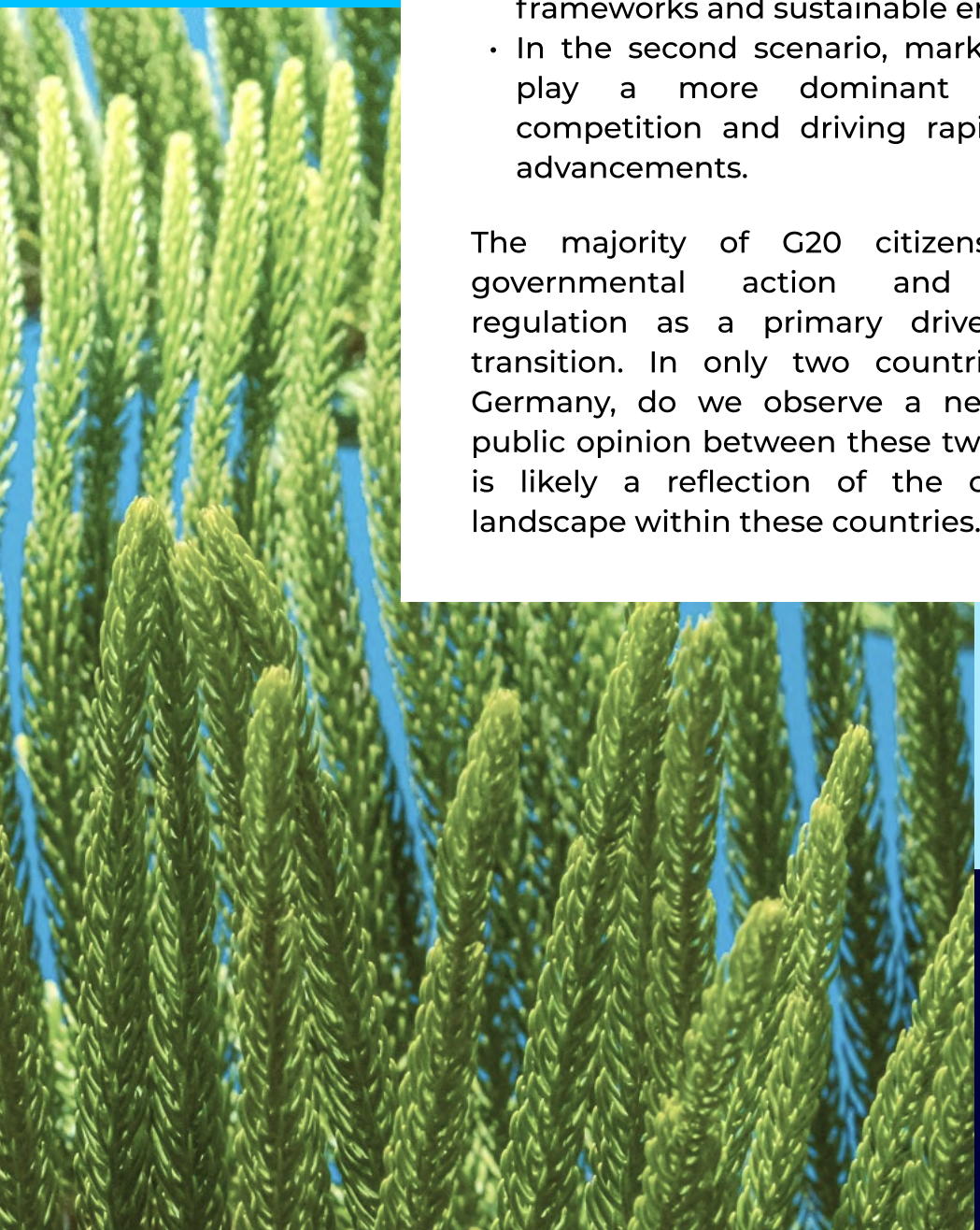
ANNE-LISE KJAER
Founder of Kjaer Global

GREEN TRANSITIONS

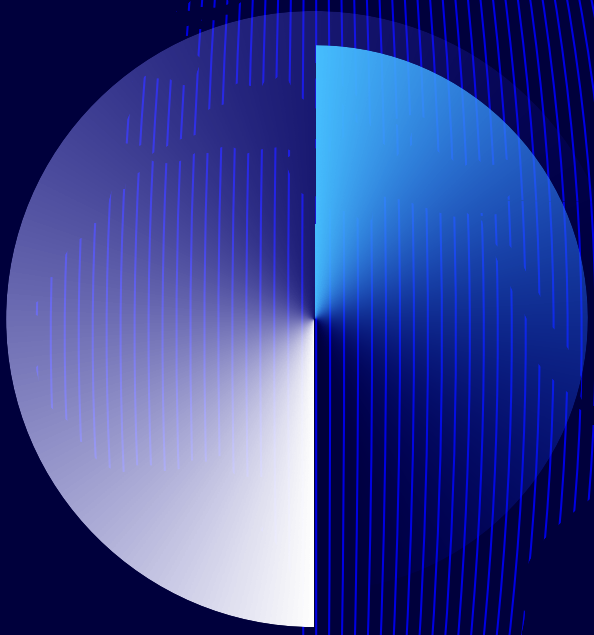
To understand how citizens perceive the issue of the energy transition, we used the World Energy Council's framework, who advanced the following two scenarios:

- The first scenario would involve enhanced collaboration between governments and industries, leading to innovative policy frameworks and sustainable energy solutions.
- In the second scenario, market forces would play a more dominant role, fostering competition and driving rapid technological advancements.

The majority of G20 citizens (60%) prefer governmental action and environmental regulation as a primary driver for a green transition. In only two countries, Russia and Germany, do we observe a near-even split in public opinion between these two scenarios. This is likely a reflection of the complex energy landscape within these countries.



Q3.3.
Which one of these energy futures scenarios do you think is more likely to happen in the next 50 years?



60%

A world where the adoption of renewable energy is actively encouraged and regulated by governments to prioritize environmental sustainability

40%

A world where the choice of energy sources is driven mainly by consumer preferences and market competition

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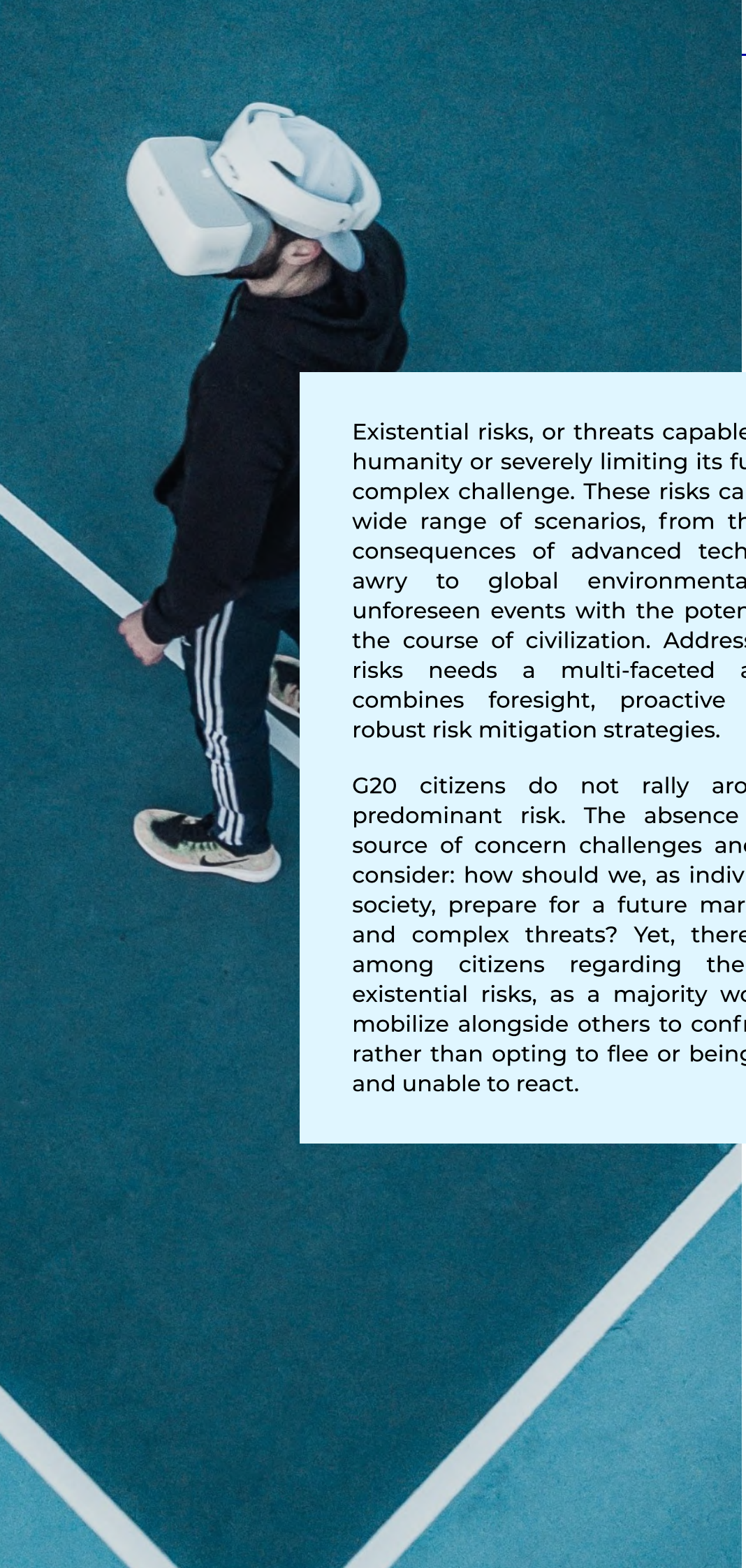
From your perspective, which do you anticipate being the most influential drivers of change over the next 50 years?

Over the next 50 years, we will increasingly be called upon not only to reduce our impact on the planet, but also learn to adapt to a changed environment, and most importantly, to begin to actively heal the damage of centuries. Good design can do that. This will not be easy work, but architecture, design, and the creative industries will be crucial in creating a more sustainable and more just world. As we rethink our buildings, our cities, our transit networks, our products, even the processes that govern the way we shop, communicate, and interact, we may face the temptation to become mere problem-solvers. The problems we face are so urgent, after all, that one could be forgiven for thinking that the time for beauty, delight, and surprise might now need to recede in the face of existential climate threats. But this would be a mistake. As designers, we share the broad societal responsibility to address environmental crisis, but perhaps our most distinctive contribution in this fight might be to add beauty and meaning to our collective response to the climate crisis. For centuries, creative work has helped people to understand and reflect on their place in the world. Now is an important moment not only to solve problems, but also to leave a cultural inheritance for future generations and to help us make sense of our place on a changing planet.

DAVID GOODMAN
Dean of IE School of Architecture and Design

CHAPTER 4

Existential Risks



Existential risks, or threats capable of eradicating humanity or severely limiting its future, present a complex challenge. These risks can encompass a wide range of scenarios, from the catastrophic consequences of advanced technologies gone awry to global environmental crises and unforeseen events with the potential to reshape the course of civilization. Addressing existential risks needs a multi-faceted approach that combines foresight, proactive research, and robust risk mitigation strategies.

G20 citizens do not rally around a single predominant risk. The absence of a singular source of concern challenges and impels us to consider: how should we, as individuals and as a society, prepare for a future marked by diverse and complex threats? Yet, there is consensus among citizens regarding the response to existential risks, as a majority would choose to mobilize alongside others to confront the threat, rather than opting to flee or being overwhelmed and unable to react.

A major energy disaster. Nuclear war.

These risks loom over us, not in the next fifty years, but now. Nevertheless, if you subject this compendium of catastrophe to rigorous logic, it becomes evident that 100% deletion of human life on earth in half a century is not as easy as it might sound. Yet, stress-testing the logic of human extinction in the next fifty years is also a grim and unpalatable exercise. Models of the impact on food supply because of stratospheric soot injections due to nuclear war conclude that a Pakistan/India nuclear exchange could result in 2 billion deaths; a war between the United States and Russia might lead to 5 billion. [i] It is a sobering statistic, but not one that foretells extinction. Maybe this cohort of 25% isn't sharing an evidence-based hypothesis about the future but a more visceral pessimism about their feelings on our global condition today. According to futurist adage, the future is no more or less than a story we believe now. Deep pessimism, through that lens, is not about evidence or trends but about the lack of a viable story of how we can, to the best of our collective ability, manage and perhaps ultimately triumph over these existential risks, while also acknowledging that we do appear to live in dramatic, transformative and often rather frightening times.

The lack of nuanced, believable and empowering stories of human thriving in the face of significant risks is a global challenge that poses a serious threat. Our stories and reality co-exist in a mutually impactful feedback loop; hopeless stories of our impotence to change our situation easily feed apathetic and dismissive responses. Why are too many of us in such a despairing frame of mind? There are several factors. There is our intrinsic appetite for drama; as Aristotle reminded his students, the reward for empathetic engagement with a tragedy is the

satisfaction of catharsis. Our global digitized media further reward an investment in extreme narratives. Not least, the lexicon of change has taken a turn for the hyperbolic. We fixate on exponential and accelerating change (can Moore's law, which is faltering anyway, really be an adequate metaphor for all social institutions?). As a result, visions of the future tend toward fantasies of total annihilation or implausible abundance. But we can tell different stories to guide us without hyperbole toward managing our most profound existential challenges. First, while probing utopias and dystopias for logical flaws may not provide much relief (5 billion deaths is still not a good outcome), it does situate us in a more plausible context. Second, in local contexts, telling and, importantly, enabling stories about our ability to change conditions is critical. Necessary literacies, basic needs—food and shelter, equity, recognition of the humanity of our neighbors, and fostering governance mechanisms that reward cooperation are critical. However, they are insufficient for addressing systemic and existential challenges beyond the purview of individuals and small groups. For that, we need functioning ecosystems that enable productive, trusting, responsive interactions between citizens experiencing first-hand the brush of existential calamities and the institutional leaders empowered to drive large-scale solutions on humanity's behalf. A century ago, liberal democracies with periodic voting of elected leaders at their core provided that relationship. Today, it appears to be failing in many places. We should heed the many experiments re-envisioning democracy for current conditions, and for populations that are more disillusioned, less trusting, but more empowered and as capable as ever of imagining and building worlds in which humanity can thrive.

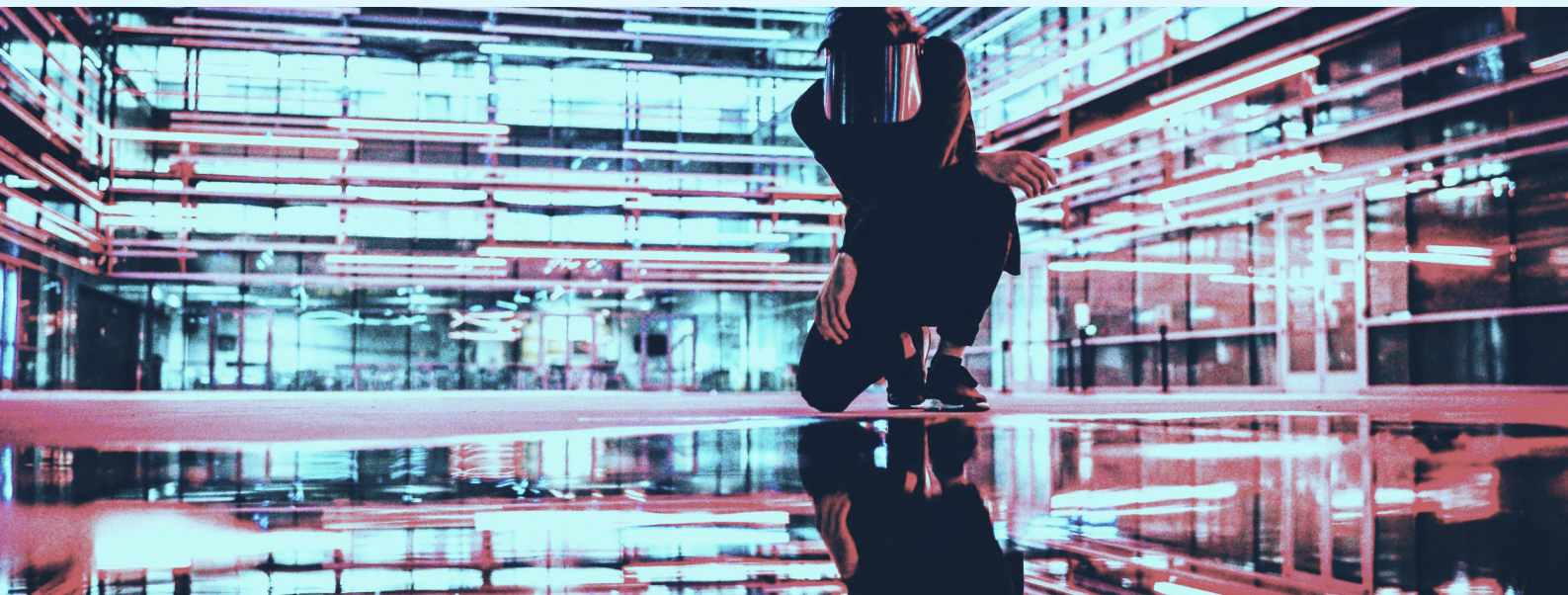
AMY ZALMAN
Futurist, former CEO World Future Society, former U.S. National War College, Chair of Information Integration

[i] Lia Xia, Alan Robok, et al., "Global Food Insecurity and Famine from Reduced Crop, Marine Fishery and Livestock Production Due to Climate Disruption from Nuclear War Soot Injection," Nature Food, 15 August 2022, V3, p. 586-596. https://www.nature.com/articles/s43016-022-00573-0

WHICH EXISTENTIAL RISKS?

When citizens were asked to identify the likeliest catastrophic events for humanity in the next 50 years from a provided list, no consensus emerged. The top three chosen, in order, were a climate cataclysm, a pandemic, and a global system collapse caused by social chaos or economic failure. Nonetheless, none of these options garnered more than 14% of responses, highlighting the widespread uncertainty and varied perceptions surrounding the future risks we face.

This result certainly reflects a shared preoccupation among people worldwide about the potentially devastating effects of the climate crisis. The prominence of a climate catastrophe on this list is perhaps not surprising when we consider, for instance, that July 2023 was the hottest month ever recorded. Additionally, the presence of a pandemic at the top of concerns is unsurprising. With the recent memory of the COVID-19 pandemic, its ongoing global repercussions, and the profound impact it has left on individuals worldwide, the high ranking of a health risk is entirely understandable.



Q4.1.

Given the list of potential events below, please rank them in order of how likely you think they are to occur in the next 50 years, with 1 being the most likely and 9 being the least likely

14%	Climate cataclysm	1
14%	Pandemic	2
12%	Global system collapse: social chaos, economic failure	3
11%	Major energy disaster	4
11%	Nuclear war	5
11%	Lab-created organisms spreading uncontrollably	6
10%	Volcanic eruption	7
9%	Advanced technology goes out of control and harm humans	8
8%	Space-related dangers (e.g., asteroid impact, sun explosion)	9

Consistently with previous findings, it is Asian countries that exhibit a more optimistic outlook for the future, with a higher percentage of Chinese and Indian citizens believing that we will successfully mitigate the effects of the climate crisis. Their belief might be anchored in the advancements in green technology, renewable energy, and global climate initiatives. China's standout figure, with over half its population (53%) expressing this view, is particularly noteworthy, given China's significant investments in renewable energy.

From your perspective, which do you anticipate being the most influential drivers of change over the next 50 years?

Humanity faces numerous existential risks. Managing climate change is perhaps the more urgent. The destruction of entire habitats and the effects of the mass extinction we are witnessing will have a large impact on human societies. The warming of the planet and its consequences for agriculture, global health, the severity and frequency of climate events will, in turn, shape the lives of many. Almost always for the worse. Governing AI will be another of the major challenges for humanity in the coming decades. Ungoverned AI can lead to its weaponization, its use to disrupt democratic processes around the world or to an outright threat to human survivability. The singularity – the moment when an AI surpasses human intelligence – opens a daunting scenario where we will share our world with a being of greater capacity than ours. This is almost the textbook definition of an existential risk. There are other risks of this scale on the horizon, from a nuclear conflagration to pandemics to being hit by a large enough meteor. Thinking of these risks helps us begin to hedge them.

The growth in complexity of these challenges and their increasing urgency has, however, been accompanied by an immense enhancement of humanity's capacity to tackle them.

We are today, on the whole, better educated than ever, better fed, have better access to services, including, critically, health care. But, above all, humanity can today leverage the power of technologies that would have seemed magical to our ancestors. Indeed, to them our world would look rushed, polluted, disorganized, noisy and hard to comprehend. Our capacity to shape it, however, would have marveled them. Our ability to travel, communicate with one another, inquire and reveal the secrets of nature, or to build new tools would fill them with awe. And in the balance of these forces, the complexity humans have built around them, and our growing ability to manage it, lies one of the fundamental endeavours of our societies. The exercise of assessing risks is not an exercise in despair. On the contrary, it is all about drawing the perimeter of the challenges we face and leveraging human ingenuity and technological prowess to avoid their worse consequences or undo them altogether.

MANUEL MUÑIZ VILLA
Provost of IE University and Dean of IE School of Politics, Economics & Global Affairs

FIGHT, FLIGHT, OR FREEZE

The "fight vs. flight vs. freeze" response when facing danger is rooted in our primal survival instinct. The choice between these three responses is not a conscious decision but a spontaneous, instinctive reaction. Nonetheless this survey offers insights into citizens' self-perceptions regarding their attitudes toward threats.

In the case of a catastrophic event that puts part of humanity at risk, most respondents would try to counter the threat, mobilizing and collaborating with others. 49% of those surveyed would opt for this type of response, versus 40% who would relocate to safer regions or seek refuge in secure shelters. This can be interpreted as a relatively heartening response, in the sense that almost half of citizens believe in the power of social mobilization and cooperating with others to address common and pressing dangers.

Q4.2.
In the event the risk you just selected happened, how would you most likely react?

49%

FIGHT
Movilize and collaborate with others to counter the threat

40%

FLIGHT
Relocate to a safer region or seek refuge in secure shelters

11%

FREEZE
Feel overwhelmed and unable to act decisively

Once more, the countries where the largest majority of citizens are inclined to "fight" are primarily situated in Asia, with nations such as Turkey (72%), India (67%), and Indonesia (60%) taking the lead. In this case, ongoing regional conflicts (Kurdish-Turkish, India-Pakistan, West Papua, etc.) and geopolitical tensions in these areas could be contributing to their collective response.

The determination of Asians to seize the massive opportunities given to them in the 21st century to develop their societies is not going away soon. Many Asians, including Chinese, Indians, and Southeast Asians, believe that this is their time. The big Asian growth story will continue. This is shown in the rapid explosion of middle-class populations among the 3.5 billion people living in China, India, and ASEAN. In 2000, there were only 150 million people enjoying middle class living standards. By 2020, the number had exploded to 1.5 billion. It will increase to 2.5 to 3 billion by 2030. This may explain why, in the IE survey results, when the participants were asked whether they would fight or take flight if catastrophe comes, 67% of Indians said they would fight. Only 44% of Germans said that they would. In short, it is virtually certain that the 21st century will be the Asian century.

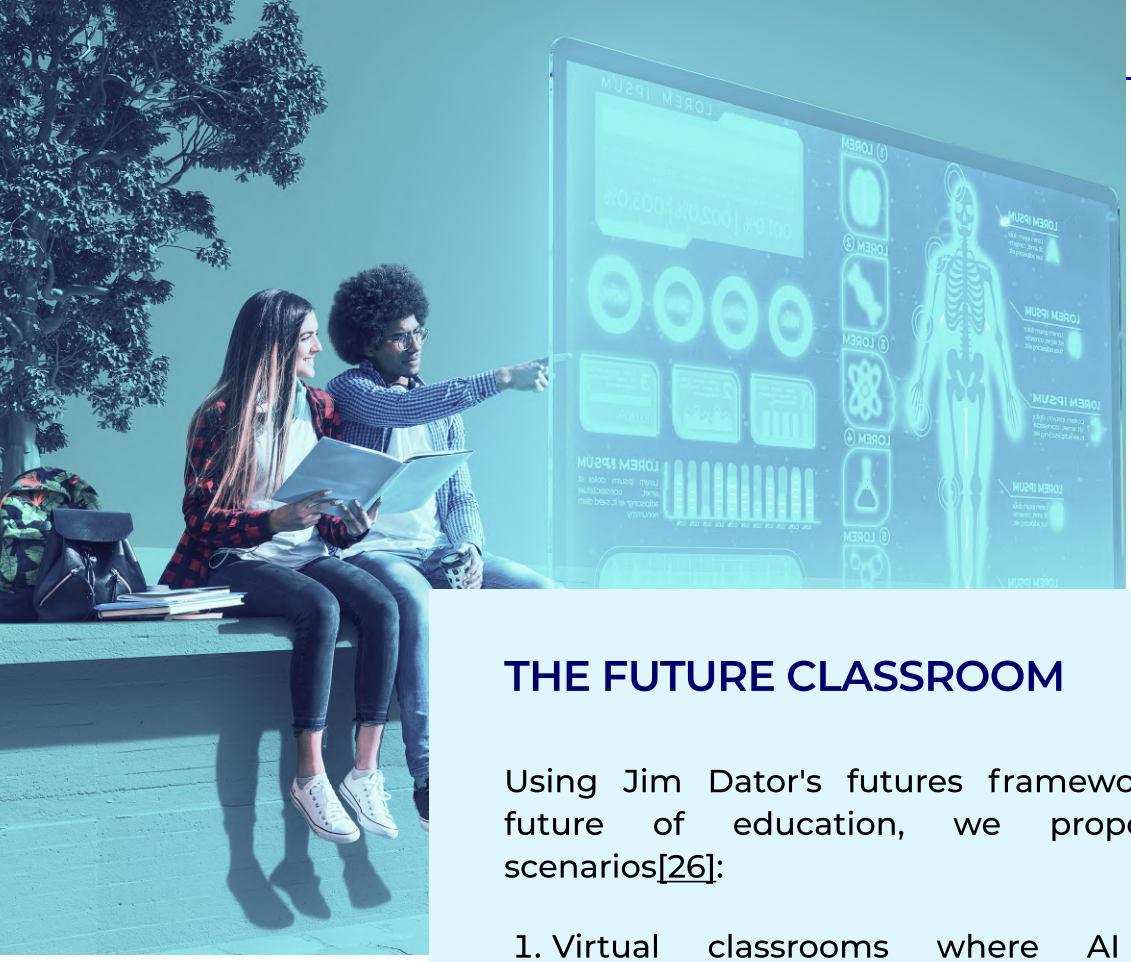
KISHORE MAHBUBANI
Distinguished Fellow at the Asia Research Institute, National University of Singapore

CHAPTER 5

Education and the Future of Knowledge

Academia holds the duty of educating citizens and providing them with the knowledge and perspective needed to identify and anticipate forthcoming risks. As we look ahead to the next 50 years, the tools, formats, and dynamics of education will continue to undergo transformative changes, largely driven by technology. Digital platforms, virtual classrooms, AI, and other technological innovations are already redefining the way knowledge is acquired and shared. However, amidst these evolving educational landscapes, the fundamental purpose of academia will endure: to equip individuals and societies with the critical thinking, innovation and entrepreneurship skills, and ethical compass required to navigate the challenges ahead.

G20 citizens foresee a future where technology dissolves the geographical boundaries of education, enabling personalized, digitally driven learning experiences. They imagine a shift towards immersive, hands-on education, grounding students in real-world applications and human connections. But above all, citizens place great importance on the Humanities, recognizing it as a fundamental instrument for shaping empowered individuals capable of addressing the challenges of the next 50 years. How we navigate this landscape will define the generations to come, underscoring the need for flexibility, creativity, and a deep understanding of both the technological and human dimensions of learning.



THE FUTURE CLASSROOM

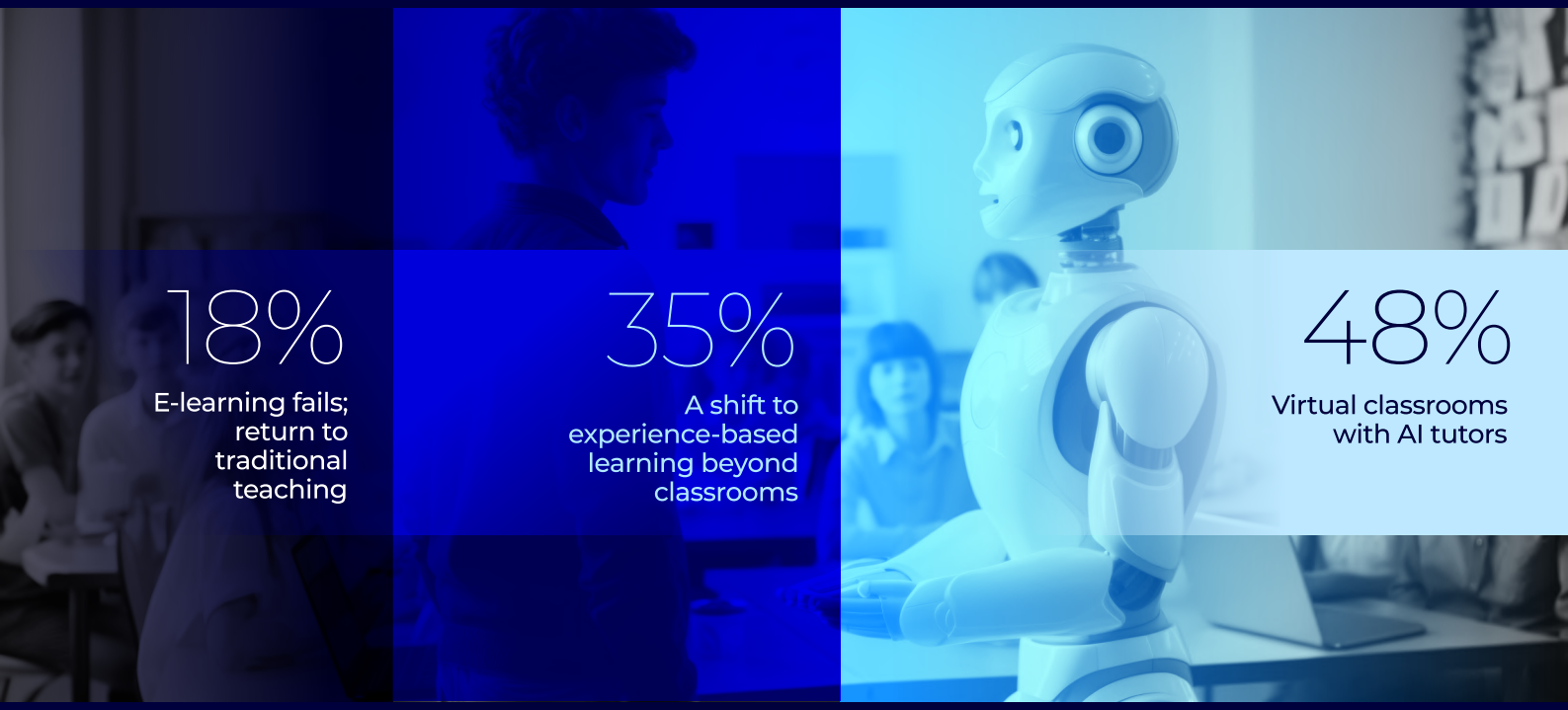
Using Jim Dator's futures framework for the future of education, we propose three scenarios[26]:

1. Virtual classrooms where AI plays a fundamental role, an option aligned with Dator's Growth scenario.
2. A shift to experience-based learning beyond classrooms, an option aligned with Dator's Transformation scenario.
3. The failure of e-learning, an option aligned with Dator's Collapse scenario.

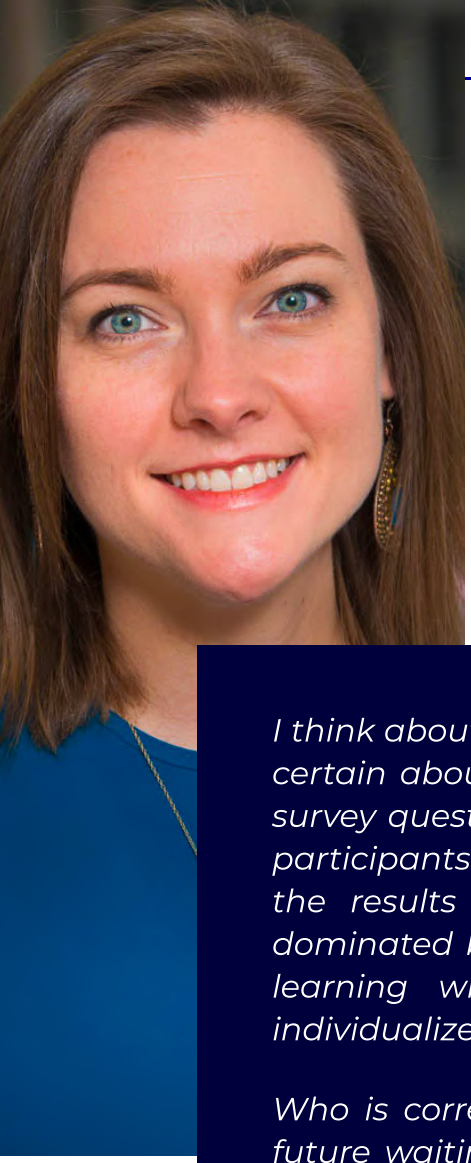
Most respondents (47%) anticipate a future where AI plays a fundamental role in education, particularly in Asian countries like China (65%), Indonesia (63%), Japan (58%), and South Korea (58%). This scenario would foster flexibility and adaptability through boundaryless learning experiences and global collaboration. Educational institutions would be able to harness technology's potential to establish inclusive and accessible learning environments. The integration of AI powered classrooms into programs would enhance accessibility, enabling students to participate in educational activities irrespective of their geographic location.

[26] School of International Futures. (2014). Introduction to Dator and the Manoa School. https://soif.org.uk/blog/introduction-dator-manoa-school/

Q5.1.
Which of the following education scenarios do you believe is most likely to happen in the next 50 years?



In contrast, Europeans favor a shift to experience-based learning – an opinion prevalent in European and Latin American countries. The third scenario is the least favored overall (18%). Experience-based learning seamlessly integrates real-world applications and hands-on projects, effectively bridging theory and practice. This approach ensures that students are not only equipped with theoretical knowledge but also gain practical skills and insights that prepare them for the challenges of the future. Implementing immersive projects, interactive experiences, and interdisciplinary collaborations within educational institutions can significantly enhance the learning journey, fostering a more dynamic and impactful educational environment.



I think about the future for a living, and I know only one thing for certain about how it will turn out: the future will surprise us. In survey questions about education and the future of knowledge, participants shared their expectations for the next 50 years, and the results varied widely. Some people anticipate a future dominated by AI tutors, while others believe experienced-based learning will grow. Some see education becoming more individualized; others, more collective.

Who is correct? We do not know. There are no facts from the future waiting to be discovered. And yet, surveys like these are critically important. Not because they reveal what the future will be like, but because they reveal our own assumptions of what we believe it will be like.

The Role of Assumptions in Thinking About the Future:

We are often told not to make assumptions, but we do not have a choice when it comes to the future. We know so little for certain, so we must fill in the gaps. Otherwise, we would be overcome with uncertainty and unable to make any plans at all. However, too often, we make assumptions without realizing or acknowledging that we are doing so. Making assumptions itself is not a problem but treating them as facts can be.

No one who responded to the survey knows how the future will turn out. But they all answered the first of three critical questions about the future that we should be asking in our schools, our governments, and our organizations all the time:

- What do we think will happen?

- What do we want to happen?

- What else might happen instead?

When we can state our own expectations and hopes, and then explore other possibilities that may seem far-fetched or even scary, we are working an important muscle in our minds. We are engaging with the wide range of possibilities that may come to pass, and we are befriending uncertainty rather than trying to avoid it. From there, we can create plans that could thrive in many kinds of futures. We can embrace our own agency to shape the future and act in ways that bring our visions closer to reality. And most importantly, we can begin to appreciate that we will never know exactly what will happen and work to remain curious, flexible, and open to opportunities.

Engaging with Assumptions and Embracing Agency:

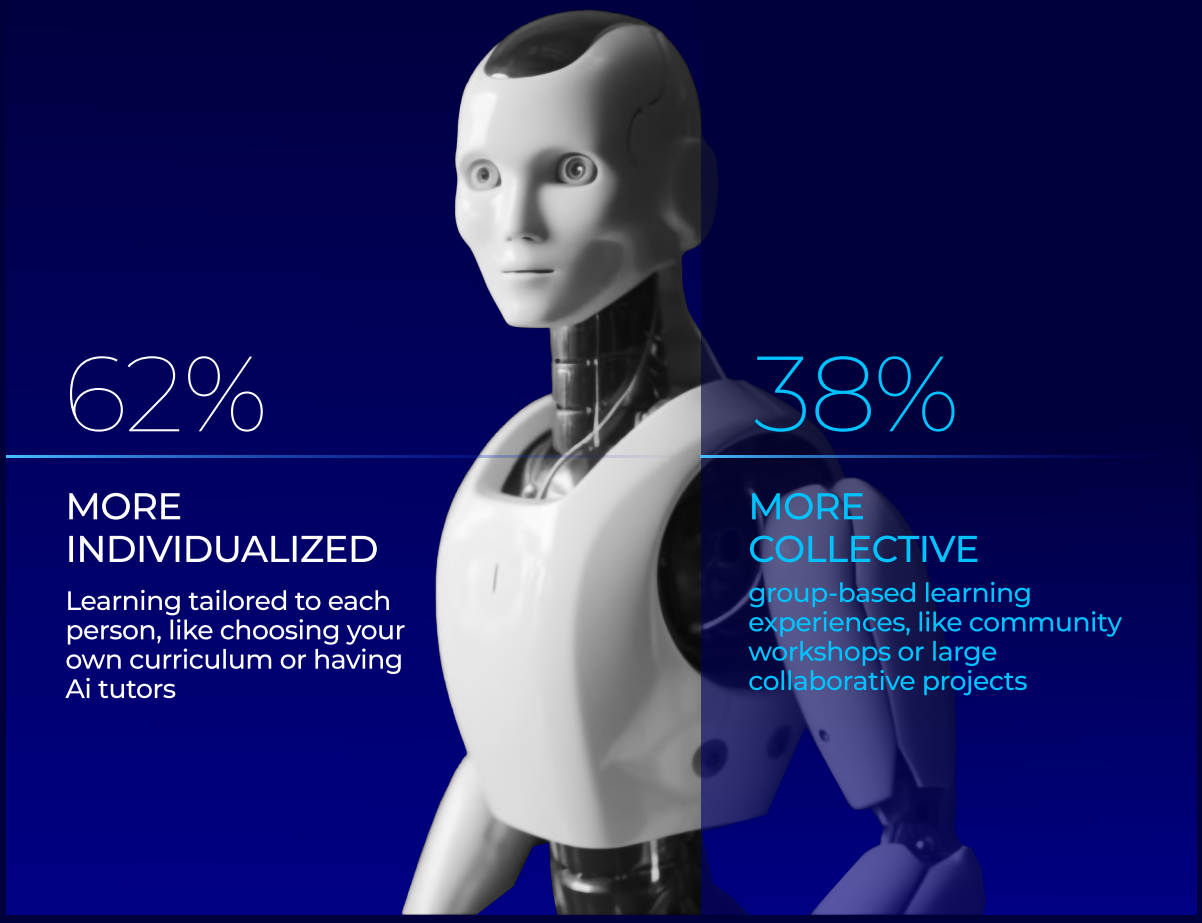
We live in a time in which assumptions are treated as truth and rigid thinking is celebrated. The truly transformative shift that could occur in the next 50 years would be a culture and an educational system that asked people to engage with their own assumptions and those of others, and that pushed them to entertain possibilities beyond what they currently know. In that kind of world, we would be equipped to have the difficult conversations about the deep, shared challenges we experienced today and will inevitably experience in the future. We would be able to anticipate change and be proactive in our decision-making. In that kind of world, the future would still surprise us, but we would be able to face it, together.

KATIE KING
Senior director of strategic engagement for KnowledgeWorks

LEARNING JOURNEYS

62% of respondents express a preference for personalized learning experiences. This scenario, predominant in countries like Japan (82%), China (76%), and South Korea (74%), reflects a paradigm shift in education where students participate in their own learning journey. In this vision, every student would have the opportunity to actively shape their own educational journey, incorporating personal interests, or pace. This shift would lead to a dynamic system where education is as unique as each student, highlighting student agency.

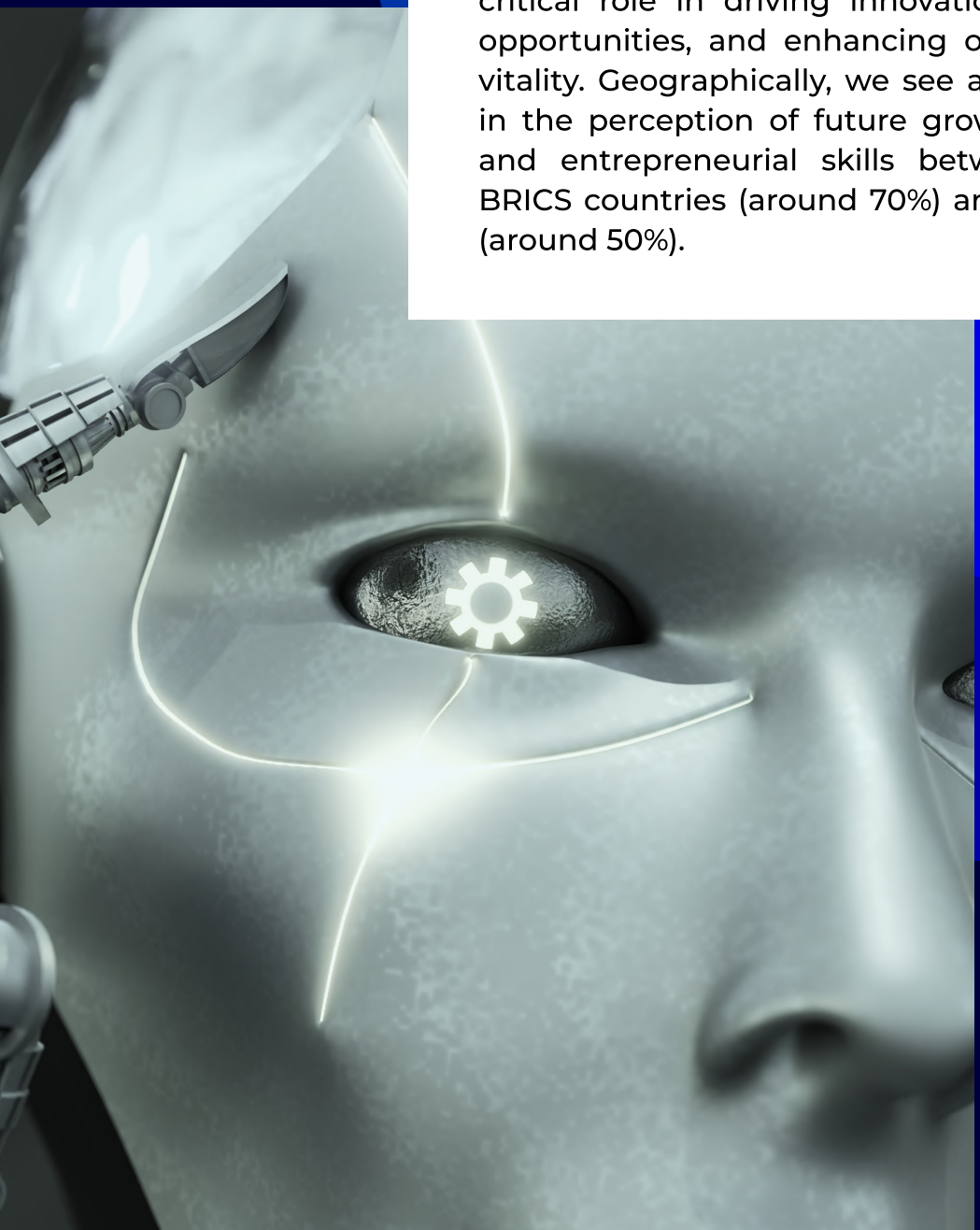
Q5.2.
In the next 50 years, do you believe education will become more individualized or more collective?



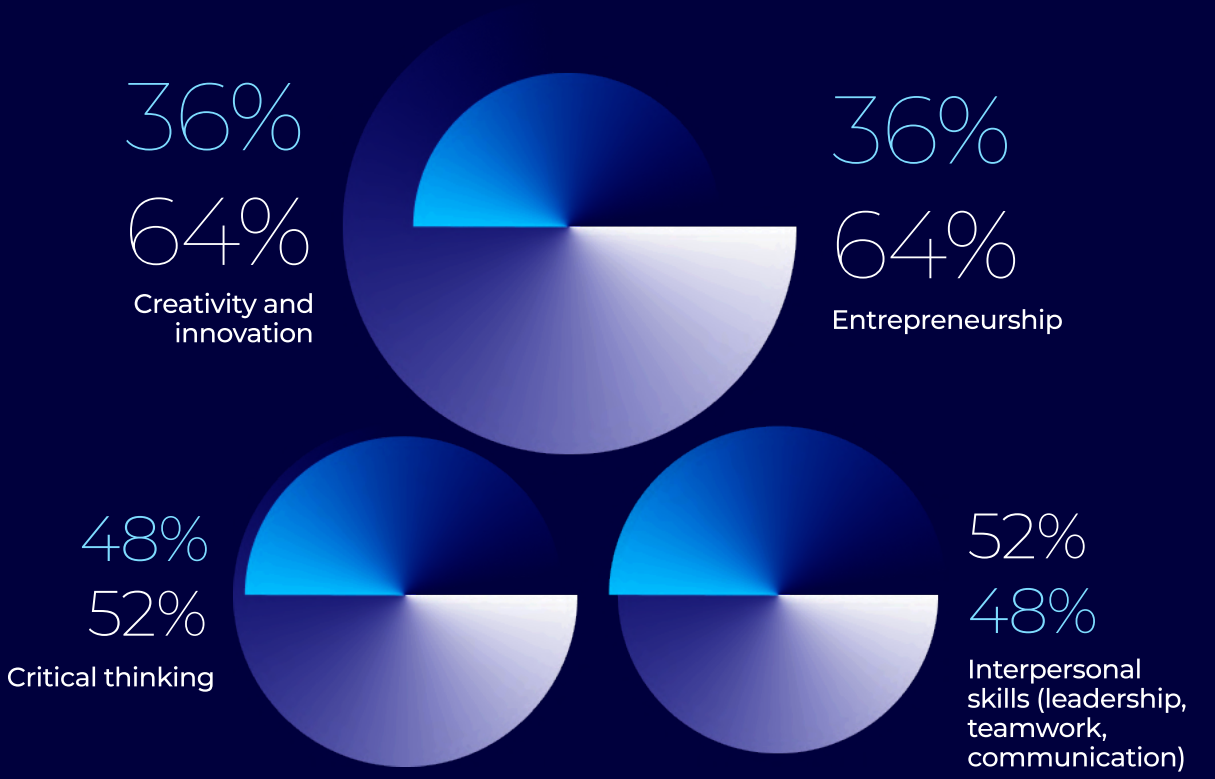
This scenario suggests the opportunity for educational institutions worldwide to embrace flexibility, adaptability, and personalized support systems. It also challenges educators to become facilitators, guiding students on their learning journeys. As we move forward, the challenge lies in harnessing the full potential of this individualized education model, ensuring equitable access and quality, and leveraging technology to create tailored, engaging, and effective learning experiences for all.

THE POTENTIAL IN INNOVATION

A large majority (64%) of G20 citizens believe that innovation, creativity and entrepreneurial skills will become stronger in the next 50 years. These skills are key components in navigating the complex and ever-changing landscape of the future. Entrepreneurship and creativity play a critical role in driving innovation, creating job opportunities, and enhancing overall economic vitality. Geographically, we see a significant gap in the perception of future growth in creativity and entrepreneurial skills between extended-BRICS countries (around 70%) and other regions (around 50%).



Q5.3.
In your opinion, in 50 years from now, will students be stronger or weaker in the following areas compared to today?



Stronger than now

Weaker than now

However, the area where most people anticipate weakness is interpersonal skills, with 52% of respondents believing that these will deteriorate in the next 50 years. This may be partly attributed to the increasing prevalence of technology and virtual communication, which, while connecting us globally, can inadvertently lead to a reduction in interpersonal relationship-building. However, by embracing ethical and human-centric design principles, future technologies should facilitate meaningful interactions, empathy, and collaboration among individuals.

The future of education could be both personalized and collective:

A detailed example of hopes and fears appearing in equal measure in the survey comes from the responses to the scenario questions. Over 80% of respondents were convinced we would not "return to traditional teaching" approaches, which is unsurprising given the context of recent decades. However, those 80% were split roughly 4:3 between one future where AI tutors dominate, and another where experiential-learning dominates. (Q15) This division is also seen in the roughly 3:2 split between the personalized versus collective learning scenarios. (Q16) Alongside these scenarios, almost two-thirds of respondents believe that creativity, innovation and entrepreneurship skills will be stronger in the future; but over half also feel that interpersonal skills will be weaker. (Q17) Yet we know that interpersonal skills are foundational for the collaborative aspects of creativity, innovation and entrepreneurship.

What I see in the tensions throughout these answers is fear that personalized learning driven by AI and online tools could reduce interpersonal skills; and yet I also see hope that this same personalized learning approach will increase creativity, innovation and entrepreneurship.

Of course, simple survey questions like this have a drawback. They are great for eliciting fast intuition-based responses that paint a powerful picture; but they also lack nuance, and sometimes accidentally create false dichotomies.

Take, for example, the possibility that efficient personalized learning on technical subject matter might create more time for experiential learning opportunities that are highly collective. There are already examples of top universities and corporations collaborating with organizations (like the one I run) to create educational experiences that combine the strengths of online learning, AI and experiential learning approaches to craft world-class learning experiences for students and employees today. This type of both/and thinking (rather than either/or) is essential for us to move from our hopes and fears towards the conscious design of a 21st century technology-enabled educational environment that responds to our answers to the foundational questions I put above.

Sustainability Skills are the new Digital Skills:

I would be remiss if I didn't add one thought about the future of education that the survey didn't touch on, but that I spend my days working on through the How to Change the World social enterprise I spun out from University College London.[27] Namely, the critical importance of sustainability knowledge and skills as a fundamental requirement for all education going forward.

Since the 1980s, 'digital skills' have been increasing joining literacy and numeracy (i.e., reading, writing and maths) as basic skills everyone must have. Today, countries, corporations and churches alike are trumpeting the critical importance of tackling both environmental damage (climate; plastics; biodiversity; etc.) and social inequalities (in all its pernicious forms). Yet despite all the knowledge and rhetoric about the problem, deep action on sustainability is only possible if the workforce of tomorrow has the skills to analyze and tackle sustainability issues within their organizations.

Recent work by BCG and Microsoft has shown that only 17% of companies with tangible sustainability targets have the skills inhouse to work towards those targets.[28] They estimate that up to 150 million current employees need sustainability upskilling this decade,[29] and that's before we account for the World Economic Forum's estimate that another 395 million new jobs will emerge focused on nature-based solutions.[30]

Our education systems – and the healthy and vibrant societies and economies they aim to support – are only sustainable if our broader environmental and social worlds are sustainable. For this reason, I see perhaps the biggest trend coming in education is (I sincerely hope) the mainstreaming of sustainability knowledge and skills across levels and disciplines.

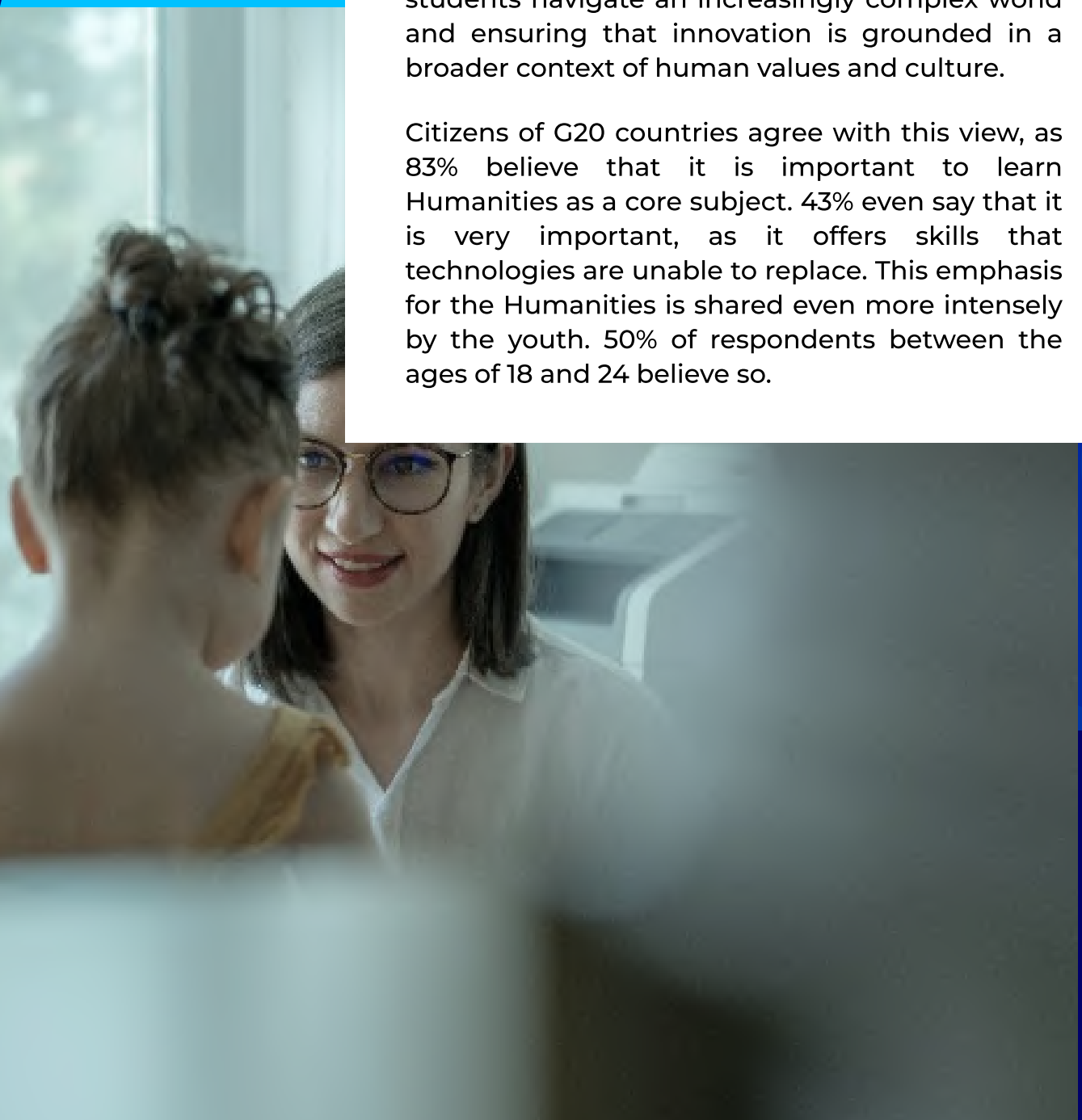
JASON BLACKSTOCK
Founder & CEO of the
How to Change the World

[27] You can find more about the mission of the How to Change the World social enterprise at: https://www.how-to-change-the-world.org/our-story
[28] Boston Consulting Group (2023, January 11). "Put Talent at the Top of the Sustainability Agenda" https://www.bcg.com/publications/2023/prioritize-talent-within-sustainability-agenda (last accessed 26 October 2023).
[29] Ibid.
[30] World Economic Forum (2020, July 14). "395 Million New Jobs by 2030 if Businesses Prioritize Nature, Says World Economic Forum" https://www.weforum.org/press/2020/07/395-million-new-jobs-by-2030-if-businesses-prioritize-nature-says-world-economic-forum (last accessed 26 October 2023)

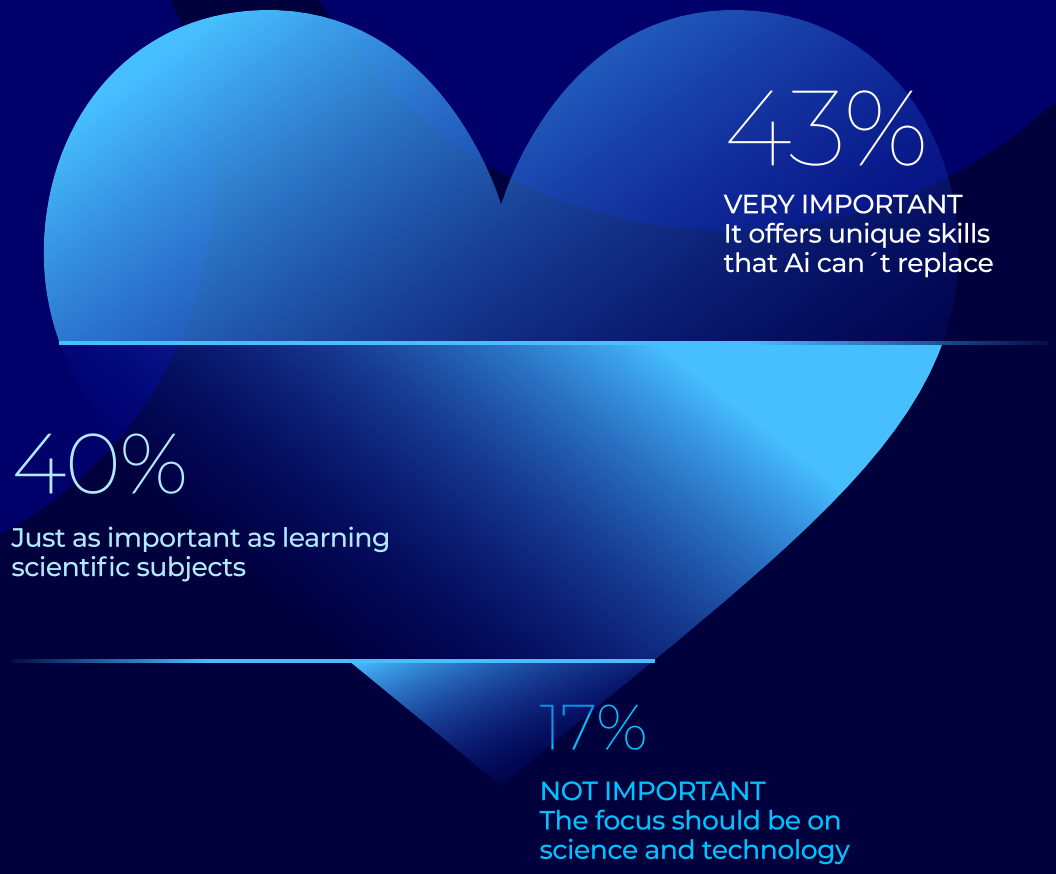
HUMANITIES MATTER

Humanities are essential in education, especially amid the ongoing technological revolution. They provide the critical thinking and ethical, reasoning skills that are needed to complement technical knowledge. Humanities foster a holistic understanding of the human experience, helping students navigate an increasingly complex world and ensuring that innovation is grounded in a broader context of human values and culture.

Citizens of G20 countries agree with this view, as 83% believe that it is important to learn Humanities as a core subject. 43% even say that it is very important, as it offers skills that technologies are unable to replace. This emphasis for the Humanities is shared even more intensely by the youth. 50% of respondents between the ages of 18 and 24 believe so.



Q5.4.
How important do you think learning humanities (like language, arts, history) will be for professionals in the next 50 years?



In the year 2073, the integration of Humanities into education will potentially equip individuals with an ethical perspective, critical thinking, and cultural understanding, much needed to design and use the myriad of technologies that will be available to us. By blending technological prowess with ethical reasoning, social understanding, and creativity, we will be able to become architects of a future where technology serves humanity, rather than the other way around.

ie UNIVERSITY

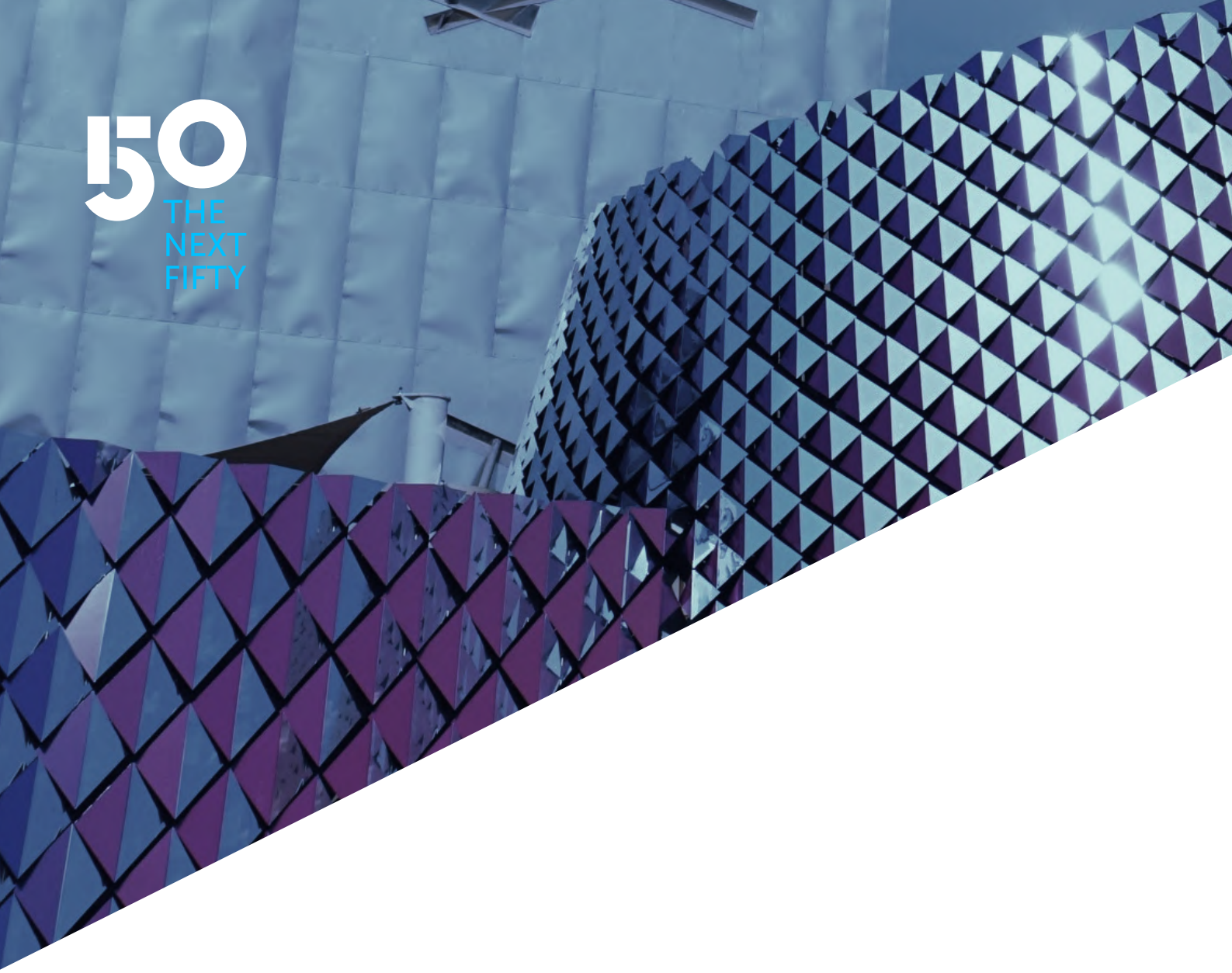
From your perspective, which do you anticipate being the most influential drivers of change over the next 50 years?

Isaac Newton wrote "If I have seen further than others, it is by standing on the shoulders of giants", referring to the contributions of those who preceded us as the cornerstone of scientific research. The Newtonian giants of our era will possess a distinct form, as knowledge will be generated in an unprecedented manner fostered by some key drivers of change. First, by the myriad sources that will continue to grow from all regions, industries, and communities around the planet for a plethora of reasons: development of emerging economies or improvement of global mobility or telecommunications, hence generating a more diverse and inclusive body of knowledge. Contributions will come from academia, but also from companies, international organizations, or governments, to name just a few. Secondly, we are only in the nascent stage of a data deluge and thanks to technology, information will be more effectively stored and interconnected than ever. Innovations like virtual or augmented reality will transform how we access information. This, together with new AI capacities will radically amplify our ability to analyze data and exponentially advance the scientific discourse in almost all fields. The future of knowledge seems exceptionally bright.

Amid this rapidly evolving landscape, where both information and disinformation are easily accessible, how will the interplay between education and knowledge unfold? Mobility of students and faculty will grow, curricula might become more dynamic, interdisciplinary or more specialized, students will enjoy a higher degree of customization in their academic choices, and all these, together with EdTech solutions, will enhance the academic experience. The fundamental endeavor of educating goes far beyond knowledge transmission, but also involve training of skills, competencies and even values. This irreplaceable role and responsibility will remain to infuse curiosity, to inspire lifelong learners, to forge independent thinkers with a critical mind who, unlike machines, can pose relevant questions when they face complex scenarios. We will not escape grappling with fundamental epistemic questions: the nature, scope, and limitations, the acquisition and validation mechanisms of knowledge. The citizens and professionals of the future will command frameworks to address ethical dilemmas, while also being able to think creatively about possible solutions to take better informed decisions towards a more sustainable future. Individuals with these capacities will stay relevant, able to navigate changes in the labor market and demography, through cultural, social, economic, political, or environmental challenges. The mission of the educational institution will abide to support students as they fulfill their potential, inspire them to contribute to the lives of others, and guide them in their quest for a purposeful life.

For all the above, we will need more than machines.

CATALINA TEJERO MAYOR
Vice Dean of IE School of Humanities



150 THE NEXT FIFTY

CONCLUSION

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We are living in a time of constant and exponential change, largely explained by technological disruption. The tangible and visible effects of this transformation are prevalent in all spheres and agendas – be it geopolitical, economic, environmental, or social – and are profoundly impacting humanity as a whole. All signs indicate that this trend will persist for the next 50 years.

Cutting-edge technologies, notably emerging and disruptive ones such as Artificial Intelligence, are altering and reconfiguring the balance of political power. They influence the way in which people's fundamental rights and freedoms are protected and exercised, while also redefining the conditions for societal prosperity and the sustainability of our planet -and space-.

The optimistic global outlook presented in this report regarding the future use of technologies such as AI or CRISPR stands in stark contrast to the concerns among citizens about the future of employment, the increase in wealth inequality, and most importantly the future of the climate crisis. The prospects offered by these technologies are somewhat obscured by the pervasive uncertainties surrounding their impact on society.

To govern the sometimes-silent changes brought about by technology, and ensure they foster prosperity rather than uncertainty for our fellow citizens, it is imperative to bridge the present with the future. The futurist perspective and foresight mindset embraced in this report aspires to encompass not just the current and the forthcoming - the predictable - but also the uncharted, the entirely novel. Through

these efforts, the prospect of brighter futures and a lasting intergenerational legacy becomes increasingly likely. Organizations, states, companies, societies, and individuals that enhance their strategic foresight capacities will expand their horizons of prosperity.

As a lighthouse institution, IE University is dedicated to continually reinventing the educational landscape, facilitating the anticipation of change to shape those brighter futures. Through this foresight exercise, we have identified that citizens will prioritize enhancing their skills and learning new technologies, while concurrently recognizing the irreplaceable value of Humanities in education as they offer abilities that AI cannot replicate. Collective insights of this nature are invaluable to facilitate informed decision-making aimed at advancing prosperity goals.

We encourage other academic institutions to acknowledge the importance of foresight, especially as new technologies expand its potential. Grant this discipline the central and cross-cutting relevance it truly merits.

The future scenarios outlined in this report, ranging from a world where AI's seamless integration into our daily lives enhances our productivity, to a world where governments lead the way in adopting green energies to prioritize environmental considerations derive from collective intelligence. They were enriched by the invaluable insights of internationally renowned experts and the Deans of the IE Schools. We express our heartfelt gratitude to each of them for their generous collaboration.

The future may elude prediction, but futures can indeed be invented, as Dennis Gabor pointed out. Such is the very approach embraced by IE University. The future can be shaped, and we hold a hopeful outlook on writing the narrative of the next 50 years. Our guiding principles, rooted in diversity, sustainability, entrepreneurship, innovation and technological humanism will serve as our compass in this endeavor.

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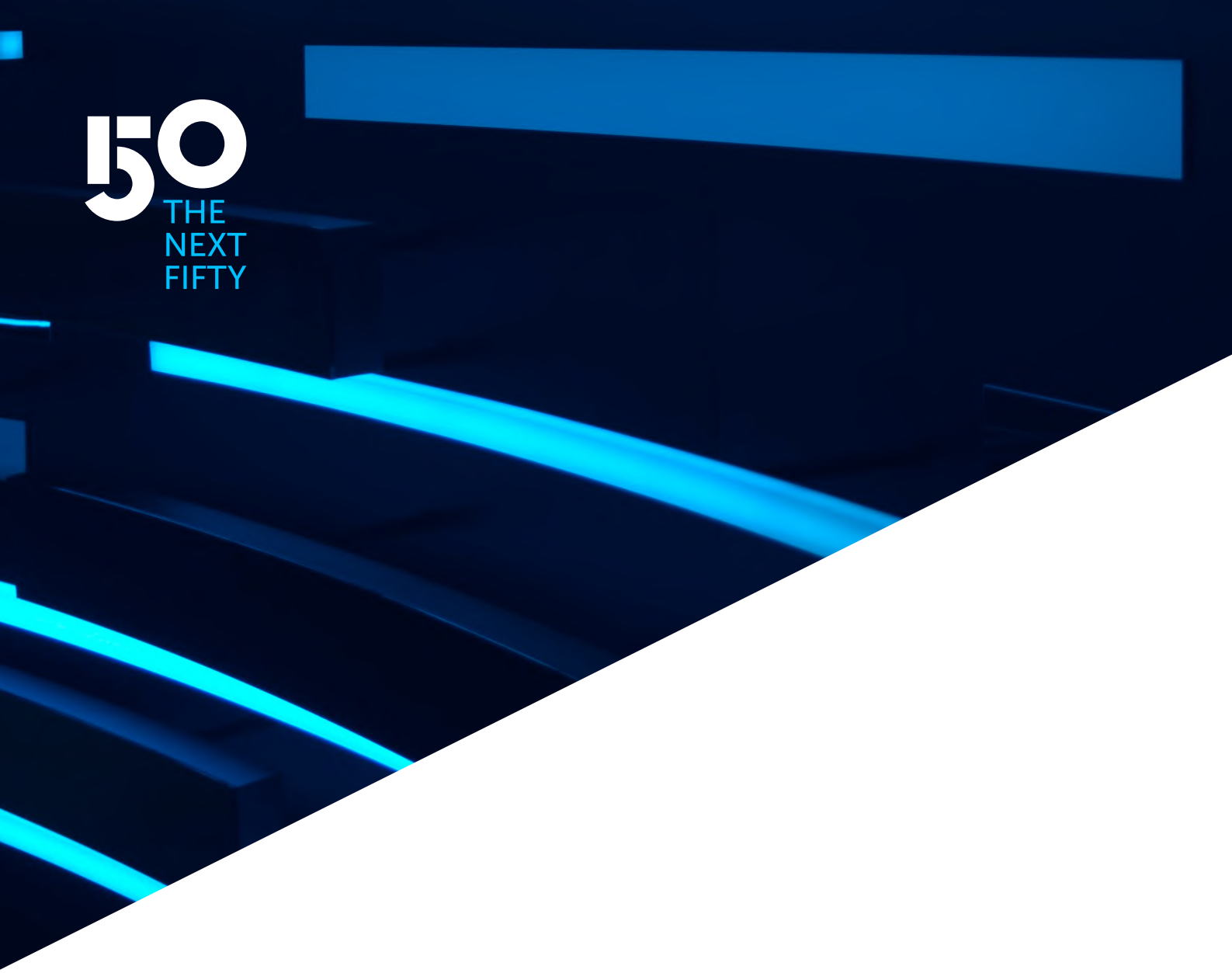

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TRENDS FOR THE NEXT 50 YEARS

This report was created under the direction of the


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