



RISK: A MOSAIC OF PERCEPTIONS

Foresight Report 2023



in partnership with **Usbek & Rica**

Foreword

Exploring the perception of risk

Our modern world is characterized by turbulence: a seemingly unending succession of crises coupled with rising interdependence. Risks have become real events that unfold across the world rather than possibilities, and their impacts are increasingly multi-dimensional. Geopolitical, economic, climate change, and health challenges are all interconnected, affecting people's perceptions of vulnerability and their faith in a better future.

Traditionally, risk has been understood to be objective, focusing in particular on big, “universal” risks that have the potential to broadly impact the planet and our lives. Yet the changing nature of the risks around us raises questions about how they are perceived. In this age of “permacrisis,” how do people consider risks in different countries? Is the human experience of risk the same for everyone? Does perception vary by country or the nature of the risks themselves? What helps to build trust and hope for a better future? And what trends and scenarios will tomorrow bring?

This is the purpose of the 2023 edition of AXA's Foresight Report: to shed light on the sociological, anthropological, and cultural dimensions of risk. The publication is based on an international survey of 19,000 individuals from the general public in 15 countries conducted as part of AXA's Future Risk Report. It explores how they perceive and experience risks in their everyday lives. This analysis provides insight into how perceptions differ across social groups, as well as based on demographic and geographic characteristics. With experts from the *AXA-ENS Research Chair in the Geopolitics of Risk*, we highlight a constructivist vision of risk—wherein the perception of risk is socially constructed and subjectively oriented. With our editorial and foresight partner *Usbek & Rica*, a trend forecaster, we explore possible futures based on the roles of technology, communities, and trusted third parties (e.g. public and private organizations). Our relationship with risk is a complex loop, one that is constantly evolving over time and will continue to evolve as technology advances and our understanding of risk improves.

Improving our knowledge of risk perception and evolution enhances our understanding of decision-making processes, as well as the types of protection that need to be put in place. It also sheds light on the best design interventions and policies to meet the needs of current and future generations.

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Preface

Constructivism: A new approach to risk perception



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Shrewd survey techniques and innovative analytical methods come together in the 2023 Foresight Report to produce a fresh and thoughtful look at the risk landscape as it stands today.

The report is based on a comprehensive and fine-grained survey, which is analyzed following the core principles of “constructivist” risk theory. These twin resources permitted an analysis that digs deeper into the complex societal embedding of risk, the unique way it is experienced by individuals and groups, and its implications for trust in people, institutions, and governments.

The raw data provided by the comprehensive risks survey formed the basis for an analysis of transversal correlations across different sectors of society, diverse types of individual and collective experiences, and various cultural, social, and political values.

The originality of the analysis stems to a large degree from the constructivist methodology it applies. Rather than starting from the traditional view that risks are hard facts that are objectively and universally verifiable, the project worked from the assumption that both risk assessment and risk management involve individual and collective values.

Such values vary from one segment of society to another, so the perception of the severity of a given risk or of potential loss in the face of the same danger can also vary strongly. Following this insight, the report presents a new understanding of the complexity of the global risk landscape. Furthermore, it provides pioneering insights on the role of societal trust in managing risk and explores potential futures based on the strength of trust in various institutions.

Building on this insight, the report proposes far more nuanced and actionable mapping of the risks society faces. It also provides a compelling proof-of-concept for societally calibrated, and thus market-specific, risk assessments.

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Back to the future... of risk

An overview of AXA Future Risks Report 2022

For several years now, the AXA Future Risks Report has provided a holistic view as well as a ranking of worldwide risks that pose a threat to mankind. The report adopts a “positivist approach¹” of risk as its theoretical framework and relies mostly on data with experts.

Using the same dataset but focused on the general public's responses, the 2023 Foresight Report aims to continue the conversation on risk perception with a complementary “constructivist approach²,” relying mainly on data from 19,000 people in 15 countries. It focuses on how individuals perceive risks and handle them in their daily lives, while also highlighting some key differences in these perceptions across demographics, understanding them through both individual characteristics of respondents (i.e. age, gender) and their geographies. Together, these approaches convey a complete vision to understand risks, both in their factual aspect and impact as well as in the more subjective dimension of their perception.

Before exploring the various aspects of this constructivist approach, this preamble summarizes the major lessons of the AXA Future Risks Report 2022.

Data and countries

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In the 2022 edition, **4 449 experts** from **58 countries**, and **18 999 individuals** from the general population from 15 countries (the United States, Australia, Belgium, China, France, Germany, Hong Kong, Italy, Japan, Mexico, Morocco, Nigeria, Spain, Switzerland, and the United Kingdom) participated in the survey.

Consensus and divergence

Climate change

Climate risk has become the top priority for both experts and the general public in all regions for the first time. On the one hand, this consensus reflects the escalating catastrophic disruptions that climate change has caused in recent years to societies and economies, resulting in the reevaluation of potential risks. Extreme weather events have become unrelenting and affect more and more people's everyday lives. On the other, this serves as a collective wake-up call for the future. To combat climate change and mitigate its future impact, immediate action must be taken.

Concern over pandemics and infectious diseases

With policies and initiatives implemented at global, national, and regional levels, there is broad agreement that the pandemic has

become manageable and is no longer an emergency for most countries. Reflecting this, the risks of pandemics and infectious diseases have dropped from 3rd to 5th place over the past year for risk management professionals. The focus has shifted to more pressing issues such as climate change and geopolitical instability.

However, among the public, concern remains high. In some countries and regions, health-care measures and policy restrictions are still tight, and worries about health issues related to Covid-19 persist. In other countries where the global pandemic has passed, its devastating consequences (as well as the experience of lockdowns, travel restrictions, and mask regulations) have left long-lasting underlying anxiety and raised awareness of related health risks. As a result, apprehension about pandemics and infectious diseases continues to sit near the top of the risk list, ranking second globally and taking the top spot in Africa, Asia Pacific, and the Middle East.

1- The constructivist approach contends that risk is socially constructed and depends on the experiences of all those involved, including the social dimensions of the experience, subjectively oriented. Read more in “Constructivism vs. positivism: A brief history of the notion of risk” on p. 8.

2- A positivist approach sees risk as a factual matter, often subject to logical deduction or even mathematical calculation to understand risks. Read more in “Constructivism vs. positivism: A brief history of the notion of risk” on p. 8.

Top 5 as ranked by both experts and the general public :



Climate change

Ranked first according to both the public and experts, and for the first time according to experts in every single region.



Geopolitical instability

In the context of the war in Ukraine, geopolitical tensions rose rapidly up the rankings: among experts they jumped from 4th to 2nd position, and among the general public from 9th to 3rd.



Cyber-security

Whilst experts' top concern is shutdown of essential services and critical infrastructures, the general public is first and foremost concerned about identity theft, both personal and corporate.



Energy risks

Jumped since last year in the context of the war in Ukraine and Western sanctions against Russian oil and gas: from 17th to 4th for experts, 16th to 5th for the general public.



Pandemic and infectious diseases

Down from #1 in 2020 and #3 in 2021. The general public remains more concerned about the pandemic than experts: the public ranks it second, whilst it's ranked 5th for experts.

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Differences between regions: Ranked by the general public

In **Asia**, people remain more concerned by the pandemic than anywhere else.

Geopolitical instability is more of a concern in **Europe** due to the war in Ukraine.

Cyber security is particularly of concern in **America**, as cyber attacks against U.S. companies and critical services are on the rise. Social tensions and movements also rank higher here than anywhere else, reflecting recent political turmoil both in North and South America.

Africa is more concerned with chronic illnesses than any other region.



Constructivism vs. positivism: A brief history of the notion of risk

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The history of mankind is inextricably linked with threats to human beings. Every step in our evolution has been taken alongside looming mortality. The world is full, after all, of objective dangers that we are prepared to confront to varying degrees.

Unlike the notion of “danger,” which refers to recurring and objective threats, risk captures the idea of practices that aim to manage the dangers faced by a given individual, group, or society. Thus, the relationship between individuals and groups on one side and different types of dangers on the other varies hugely depending on social, cultural, and political variables. Simply put, what is a danger to one person may not be a danger to another. It also shapes the history and development of this notion. The main paradigm shift in the story takes place through the discovery and implementation, in the mid-20th century, of the concept of risk management.

Etymologically, the term “risk” seems to come from the Medieval Arabic word *rizq*, meaning “bread” or “sustenance,” with a strong allusion to what is provided by God. This meaning links the word to the idea of the hand of fate in human affairs. Western Medieval languages (Latin, Medieval French, and Portuguese, as well as late Medieval Germanic languages) all reserved a term for the unpredictable, often understood as dangerous.

However, beyond etymology, a less distinctly named idea of risk as chance, both in games and in life, can be traced back as far as we have written records. The earliest evidence of this gaming instinct shows an evolution, linked with the rise of Christianity in Western Europe, to a more spiritualized notion of risk. The concept of divine judgment and the end of days had a strong influence on the outlook people had toward an uncertain future.

Danger and the insecurity it generated became partially internalized, moralized, and spiritualized. The ordinary dangers of living in the Middle Ages, due to natural phenomena like illness, fragile agriculture, and scarce natural resources, naturally led to this spiritualization. Reducing insecurity therefore meant improving one’s relationship with the divine. The high Latin term *securitas* literally means “without concern,” “peace of mind,” or “peace of the soul.”

Paralleling the spiritualization of danger in the late Middle Ages, the first occurrences of what might be called maritime insurance appear with the rise of merchant sailing fleets in Portugal and Spain, which used to designate an extra cost charged as compensation for facing unknown dangers.

A common and somewhat over-simplified way to understand the modernization of risk and risk analysis is to focus on two of its dimensions: on the one hand, the likelihood of any given threat becoming reality, and on the other, the actual damage it could cause. While the necessity of evaluating the likelihood of a given event is as old as the notion of risk itself, its status as a science, using the mathematics of probability, arose during the late 17th and early 18th centuries. This mathematical discipline gradually evolved until, during the mid-20th century, it merged with mainframe computing and took on a new dimension and influence, particularly regarding the management of large trading portfolios, investment funds, and insurance policies.

The rapid change in the notion of security, toward the end of the Cold War in the 1980s, was also significant. During the Cold War years, a bilateral, geopolitical concept of security prevailed. Following the fall of the

Berlin Wall and the discovery of a wide range of forms of insecurity in and among societies themselves, rather than a single set of risks in the broader world, insecurity became increasingly understood as both a symptom of modern society and a byproduct of its evolution.

The rapid rise of instantaneous electronic communications, followed by social media, intensified the feeling that risks are at once individualized, interdependent, and ever-present, increasing people's anxiety about moving toward a future that seems more and more uncertain.

What we now characterize as risk is the convergence of these various streams into an era of uncertainty: the late-industrial production of risks, the conception of the future in our collective imagination, the mathematization of the unknown, high-speed communication and social media, and the omnipresence of danger.

Our relationship with risk is also a history of how we perceive it. How do ordinary people view risk? What role do cultural and socioeconomic factors play? Why do people from different countries see the same risk in different ways? This underlying assumption that perceptions of risks are socially constructed and subjectively oriented can be traced back to the discussion between two major theoretical views on risk, positivism and constructivism. They express two distinct approaches to evaluating how the world works and what it means to study it. They each emerged from a different historical and cultural period in the evolution of scientific theory.

Positivism

was born in Europe during the first part of the 20th century, and more specifically, during the highly unstable interwar period. This approach comprises a set of assumptions about what a true scientific statement is. When asked that question, a positivist answers that such a statement must gather verifiable facts from the world. From the positivist point of view, the world is indeed made up of facts, and risk will therefore be considered first and foremost as a fact.

Constructivism

appeared much later, toward the end of the 20th century. This approach was initially a reaction against the positivist assumption that the world is simply a set of facts. Constructivism embodies the belief that traditional natural science falls short when it comes to describing social, cultural, and political realities. For example, while the temperature outside can easily be described in factual terms, the same can hardly be said about the mood of an audience during a Beethoven concert. The constructivist approach therefore starts from the assumption that nothing about the world can be understood directly, as it comes to us through the filter of our personal values, social relationships, political realities, ethnographic context, and so forth.

Facts vs. experience

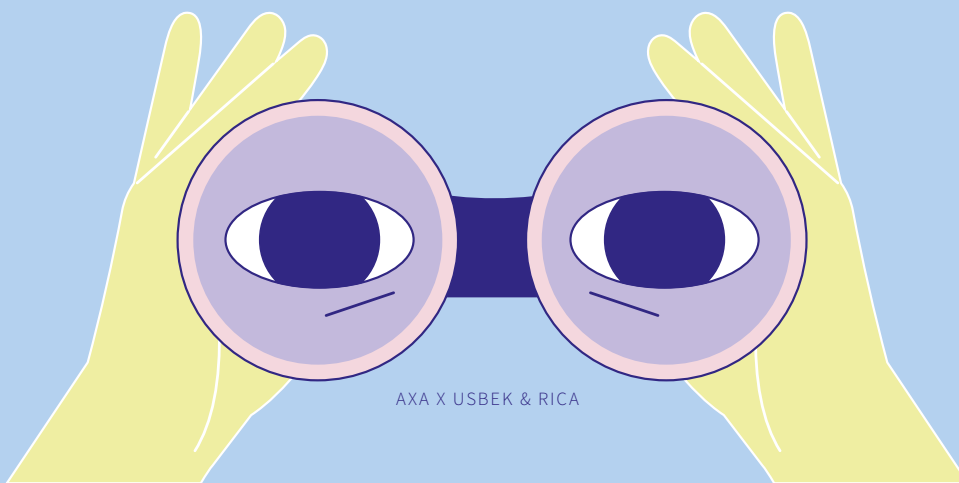
These two approaches therefore consider risk from different perspectives. A positivist assumes that risk is a fact. Therefore, the only challenge for risk analysis is to figure out what the facts are and to make logical conclusions about their implications. To study the risk of a car accident means gathering all of the relevant data, for example size, weight, speed, and some information about the driver (years of driving experience, number of previous accidents, age group, etc.). One then makes a logical calculation about how likely an accident is to occur, what damage would be done in terms of material costs, hospital bills, number of human lives lost, etc.

A constructivist approach would start by asking how this accident would be experienced by those involved. The analysis would begin with an attempt to define who the people are, including their personal backgrounds, families, jobs, and relationship to vehicles, cars, death, and injury. All of these elements would come into play when determining what the risk of an accident is.

Two complementary approaches

Unlike positivism, which sees risk as a factual matter subject to logical deduction and even mathematical calculation, the constructivist approach depends on the experiences of those involved, including all the social dimensions of that experience. Constructive analysis is therefore subjectively oriented. It takes into account how we live, what matters to us, what we hope and fear, and so forth.

As a result, the assumptions, methods, and worldviews adopted by the two approaches are highly different. A positivist risk analysis is a factual analysis. It focuses on the objective search and material understanding of the potential risk event. A constructivist risk analysis is a social analysis. It seeks to understand the potential event in the context of the societal origins that inform the broad notion of risk as well as a particular hazard, variations in the perception of danger, and the often significant disparity in the social consequences a given event would trigger.



Popular beliefs

“Women tend to be more risk-averse than men.”

Yes! Women are often labeled as more risk-averse than men, and our data seems to confirm this. Of all the respondents across 15 countries, 64% of men are strong or moderate risk-takers³, while the percentage drops to 51% for women. In parallel, 20% of men are major risk-takers compared to 13% of women.

“People who have children are more likely to give up on some of their dreams than take risks to make them come true.”

No! Does parenthood mean giving up on wild and risky dreams and putting another person’s needs before your own? Fettered by children, do parents tend to adopt a riskless personal development path? Contrary to what you might expect, about 56% of respondents without children agree that parenthood would require giving up some of their riskier dreams, but only 51% of people with one child and 50% of people with two or more children agree with the statement.

“People with high income are inclined to take more risks than others.”

Yes! Results from the data align with the old Russian proverb: those who drink champagne are indeed risk-takers. 23% of people in the high-income group are strong risk-takers⁴, compared to 14% in the medium- and low-income groups. Meanwhile, just 34% of respondents in the high-income group are risk-averse, while the percentages in the medium- and low-income groups are 43% and 46% respectively.

“Older generations feel more vulnerable.”

No! Believing older generations perceive more vulnerability sounds reasonable: after all, older adults tend to suffer more from health problems, mobility limitations, and social exclusion. However, the data has shown a negative relationship between age and perceived vulnerability, which is to say that people over 65 years old feel least vulnerable. Just 4% of the population completely agree with the statement: “In my everyday life, I often feel vulnerable.” Which group perceived the most vulnerability? Surprisingly, people under 25 years old!

“People with higher education are more sensitive to climate change-related risks.”

No! Conventional wisdom holds that people with higher levels of education are prone to believe in scientific reasoning, including the urgency and risk of climate change. Our data, however, indicated that the perception of climate change-related risks and education level do not have a strong association. Despite perhaps being counter-intuitive but supported by our data, 45% of respondents of low-level education chose climate change as one of the five most significant risks in the next 5 to 10 years. The number dropped slightly to 42% for highly educated people.

3- Choosing “Yes, a lot” or “Yes, a little” to the question “Are you someone who usually takes risks?”

4- Choosing “Yes, a lot” to the question “Are you someone who usually takes risks?”



SECTION 1

A mosaic of perceptions

“To win without risk is to triumph without glory.” Although for some this maxim of Corneille’s is self-evident, it is far from being shared universally. The perception of risk appears to be eminently subjective: depending on one’s age, gender, geography, and socio-professional or family situation, each individual experiences risk in their own way. From one side of the planet to the other, we can observe major disparities within the various categories of populations.

This first section analyses the influence of individual characteristics on people's relationship to risk and the differences in perception induced by social background. What demographic and socio-economic factors influence the feeling of vulnerability? Do people take more risks when they are younger? What are the differences between men and women in terms of risk perception?

Are we all vulnerable?

Revisiting the concept of “vulnerability”

Since the 1980s, the term “vulnerability” has appeared frequently in the literature on natural disasters. From its origin, the concept has been used to designate the state of susceptibility to harm, lack of power, and marginalization in facing adverse conditions. Gradually, vulnerability as a term has been diversely conceptualized in various disciplines such as disaster studies, public health, environmental science, etc. Its extensive use has led to the lack of a unified interdisciplinary definition and consequently to different understandings of the term.

Despite the semantic ambiguity embodied in the word, “vulnerability” is inextricably linked with concepts like risk, resilience, security, etc. Without specifying the condition of hazards and risks, vulnerability in this report is defined as “a measure of possible future harm¹,” drawing on literature from climate change strategies. This perspective thus invites us to further explore the demographic, socioeconomic, and broader structural conditions that give rise to the perception of vulnerability, as well as how it relates to the understanding of other interconnected concepts such as risk-taking attitudes, societal progress, and the emergence of new technologies.

Temporal trends and gender differences

In general, from 2020 to 2022, there has been a slight decrease in perceived vulnerability. As the global health and socioeconomic crisis of the COVID-19 pandemic began improving, the share of people who perceived themselves

as vulnerable² in 2022 has dropped by three percent compared to two years ago.

In terms of gender differences, women tend to feel more vulnerable than men, although not by a very large margin. According to the data, females who “often feel vulnerable” in their daily lives made up nearly half of the population, 11% of whom strongly agree with the sentence “In my everyday life, I often feel vulnerable.” Among male respondents, the number who feel vulnerable in their daily lives dropped to 44%.

Socioeconomic conditions and vulnerability

Vulnerability cannot be defined without taking into account the capacity to absorb, resist, and recover from the impact of hazardous events³. Thus, perceived vulnerability is naturally interrelated with risks, adaptability, and resilience. Furthermore, all these elements are naturally correlated with socioeconomic variables. For instance, education and income translate into cultural and economic opportunities and constraints regarding how people cope with risks and build resilience. Social groups with less favorable conditions tend to experience more hardship and backlash when confronted with risks.

The results from the data have confirmed this negative relationship between income, education, and vulnerability. Up to 54% of people with a low level of education often feel vulnerable in their daily life. For people with a middle and high level of education, those figures decreased to 47% and 45% respectively. In terms of income, the percentage of people feeling vulnerable in their daily life in



54%

of people with a low level of education often feel vulnerable in their daily life - 7 to 9 points higher than those with higher education.

1- Wolf, S., Hinkel, J., Hallier, M., Bisaro, A., Lincke, D., Ionescu, C., & Klein, R. J. (2013). Clarifying vulnerability definitions and assessments using formalisation. International Journal of Climate Change Strategies and Management.

2- Respondents agree with the statement “In my everyday life, I often feel vulnerable.”

3- Westgate, K. N. (1976). Some definitions of disaster. In Occasional Paper (Vol. 4). Inglaterra. University of Bradford. Disaster Research Unit.

the high-income group is 3% lower than in the middle-income group, and 10% lower than in the low-income group.

Apart from socioeconomic conditions, an interesting relationship between the number of children in the household and vulnerability is also noted (see Graph 1). Compared to people who have no children, those who do perceive themselves as more vulnerable. Around 44% of respondents with no children feel vulnerable in their daily life. This proportion stood at 50% for those who have one child and rose to 54% for those who have two or more children.

One potential explanation could be that vulnerability acts in relation to one's ability to withstand the perturbations of external stressors⁴. In all population groups, children are among those most at risk when hazards occur and thus require special care and support from adults⁵. The extra responsibilities brought by children could potentially contribute to the higher level of vulnerability perceived by the adults living in the same household. Also, in the broader context of demographic transition, the number of children may serve as a proxy for a family's standard of living, as a result of social and economic development, as declining fertility rates tend to be associated with higher per capita income in a country or region⁶.

How are risk perceptions related to vulnerability?

The preceding discussion suggests that vulnerability, risk-taking behaviors, and attitudes go hand in hand, as vulnerability stands between risk and preparedness. Our analysis of the data also shows some connections between taking risks and feeling more vulnerable. Those who often feel vulnerable in daily life make up 59% of the population in the strong risk-taking group, compared to about only 43% in the risk-averse population. This association may be explained by the fact that risk-takers are aware of the possible

consequences of their behaviors and are thus concerned about the potential for harm.

Vulnerability is not only related to risk-taking attitudes themselves, but is also entwined with one's opinion toward societal progress and the emergence of novel technologies. For instance, in the group of people with a high level of perceived vulnerability, 72% believe that "Technological advances create more risks than they solve." In sharp contrast, just 33% of the population with a low level of perceived vulnerability holds this belief. In the meantime, people who perceive themselves as highly vulnerable are inclined to believe that societal progress can happen without any risk-taking, as about 60% of the group with a high level of perceived vulnerability agree that "Our societies can progress without taking any risks," while just over a third of the low-level perceived vulnerability population share the same view.

In essence, the data shows that socially disadvantaged and risk-taking groups tend to view themselves as more vulnerable. Additionally, people who perceive themselves as vulnerable tend to consider that societal progress does not necessarily entail risk-taking. They also believe that the introduction of new technology typically causes more risks than it resolves.

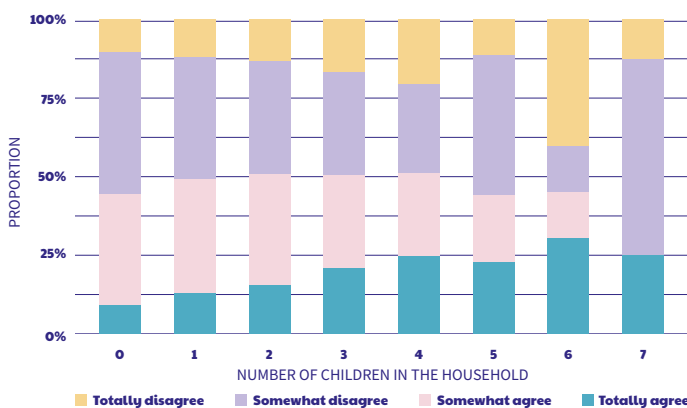
4-Paul, S. K. (2013). Vulnerability concepts and its application in various fields: A review on geographical perspective. *Journal of Life and Earth Science*, 8, 63-81.

5- Peek, L. (2008). Children and disasters: Understanding vulnerability, developing capacities, and promoting resilience—An introduction. *Children Youth and Environments*, 18(1), 1-29.

6- Kirk, D. (1996). Demographic transition theory. *Population studies*, 50(3), 361-387.

Vulnerability and the number of children in the household

Answer to the statement "In my everyday life, I often feel vulnerable."





不入虎穴，焉得虎子^(CN)
The only way to catch tiger cubs
is to go into the tiger's den.

Is risk-taking the key to success?

In some cultures, popular beliefs tend to associate risk with success, encouraging people to “take a chance.” The idea that one needs to embrace and overcome risks in order to be successful is ingrained in multiple aspects of an individual’s choices and social life. It lies at the root of personal and professional growth; it is the basis of financial investments, and it spurs innovation by feeding the population an entrepreneurial mindset.

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This notion also seems to be a point of agreement for most of the respondents in our study, as an overwhelming majority (75%) agree with the statement that “People who take risks are often more successful than people who don’t.” Similarly, most respondents agree that risk is necessary for society’s progress, as nearly 60% of participants agree with the idea that our society cannot advance without taking risks⁷. However, this consensus does not translate into actual practices at the individual level. 64% of respondents in our global sample try to avoid risks in their daily life⁸, and 54% would be ready to give up on their dreams to avoid taking too many risks. We investigate here some possible social and behavioral reasons that may explain this apparent contradiction.

Risk, success, and socio-economic characteristics: Is success in the eyes of the beholder?

Across the respondents, the degree to which people agree with the statement “People who take risks are often more successful than people who don’t” varies greatly. Looking at the data, some socioeconomic traits are shared by respondents with a similar attitude toward this statement. Age, country of origin, education, and profession all seem to exert a significant influence.

There is a strong relationship between one’s agreement with the statement and one’s age group, as over 75% of the younger and middle generations (<40 years old) tend to agree with it (with 25% strongly agree). This percentage declines as age increases.

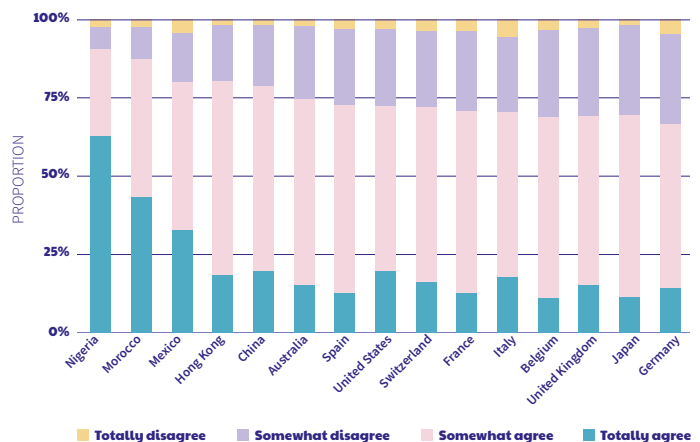
When it comes to country of origin, there is strong support for this statement in Nigeria (91%), Morocco (87%), Mexico (80%), Hong Kong (79%), and China (78%). On the opposite end of the spectrum, only around 65–70% of people in Germany, Japan, Italy, France, the U.K., and Belgium agree with it.

7- The original question is formulated as “Our societies can progress without taking risks,” with which 41% of respondents agree and 59% disagree (at the global level).

8- 64% of respondents agree with the statement “In my everyday life, I always try not to take risks.”

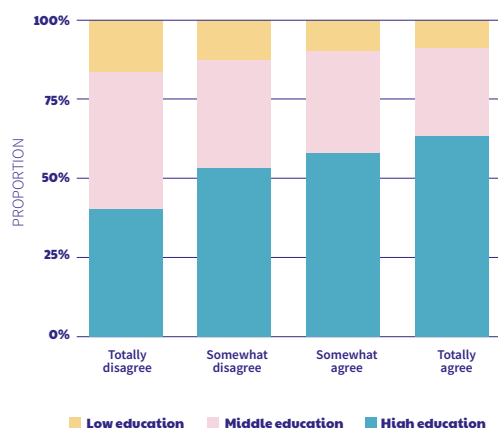
Country differences in viewing risk and success

Answer to the statement “People who take risks are more successful than people who don’t.”



Education and agreement

Answer to the statement “People who take risks are more successful than people who don’t.”



People with a higher level of education tend to align with the belief that risk leads to success, whereas people with a lower level of education are more likely to disagree.

Finally, people who agree the most with this belief tend to be business managers (92%) or self-employed (80%), denoting a strong alignment with the entrepreneurial mindset, while those who are the least aligned with it are those who are unemployed and not looking for a job (only 64% agree), as well as retired people (66%).

Overall, the data suggests that culture plays an important role in people’s perception of the relationship between risk and success.

This thesis is supported by empirical studies of individual and corporate risk-taking, which found national culture to be positively related to some dimensions of risk-taking and to overconfidence, which in turn affect the behavior of decision-makers by incentivizing and rewarding successful risk-taking⁹.

This trend is also visible in our data, which highlights a linear, positive relationship between one’s attitude toward risk and one’s level of agreement with the statement. That is to say, the more people identify themselves as risk-takers¹⁰, the more likely they are to agree with the statement that risk leads to success. As presented previously, higher socioeconomic positions relate to a higher predisposition toward risk-taking, and to a stronger belief in the connection between risk and success. Culture thus plays a role in influencing mindset and attitudes regarding the link between risk and success.

Risk and success as subjective phenomena

When it comes to actual risk-taking behaviors, the picture is more nuanced. Out of the people who agree with the statement that risk leads to success, nearly 60% try not to take risks in their daily life¹¹. Additionally, 51% of those in agreement would be ready to give up on their dreams to avoid taking too many risks¹². This shows that, while people are aware of the link between risk and success, success is determined by more—and more varied—aspects than simply taking risks regularly. Furthermore, when success requires a series of risks to be taken, as most of us think, not everyone is determined to embark on the long and unpredictable journey to Rome after careful evaluation.

These results show that both risks and success are not objective facts, but rather context-dependent and socially constructed phenomena. In line with the constructivist approach to risk studies, presented at the beginning of the report (Constructivism vs. positivism: A brief history of the notion of risk, p.8), risk—and, by extension, success—need to be understood by focusing on the subjective experience of those implicated in it. Risk is not merely a “quantifiable uncertainty,” just as success is not simply the achievement of externally imposed social goals (e.g., high-status jobs or ownership of material goods). Both risk and success are subjective and depend on cultural and individual characteristics.

To conclude, while there is a relationship between risk and success, which tends to be promoted in certain cultures and by specific narratives (e.g., in startups or investment domains), each aspect should be assessed and evaluated in its own right. Taking certain risks will not lead to success—for example, biking without a helmet—and many forms of success do not require spectacular risks, like defending a graduation thesis.

9- Frijns, B., Hubers, F., Kim, D., Roh, T. Y., & Xu, Y. (2022). National culture and corporate risk-taking around the world. *Global Finance Journal*, 52, 100710; Hens, T., Rieger, M. O., & Wang, M. (2020). *Cultural Finance: A World Map of Risk, Time and Money* (Vol. 16). World Scientific.

10- People who responded “Yes” to the question “Are you someone who usually takes risks?”

11- Percentage of people who agree with the statement “In my everyday life, I try NOT to take risks” as a subset of all the people who agree with the statement “People who take risks are more successful than people who don’t.”

12- Percentage of people who agree with the statement “I’d rather give up some of my dreams than take too many risks to make them come true” as a subset of all the people who agree with the statement “People who take risks are more successful than people who don’t.”

The age of risk

Conventional wisdom holds that as time progresses, people tend to hold on to what they already have, rather than venture into a new, uncertain environment. The dominant view on the relationship between age and risk-taking is thus that one's eagerness to take risks decreases over one's life span, but the mechanism through which this change operates remains under debate.

For instance, studies in behavioral economics have shown a systematic association between cognitive aging and a decline in one's willingness to take risks¹³. Meanwhile, age could also be considered a proxy for cohort effects, which represent typical experiences at particular points in time (e.g., major financial crisis, war, etc.) and consequently influence how an individual perceives risks¹⁴.

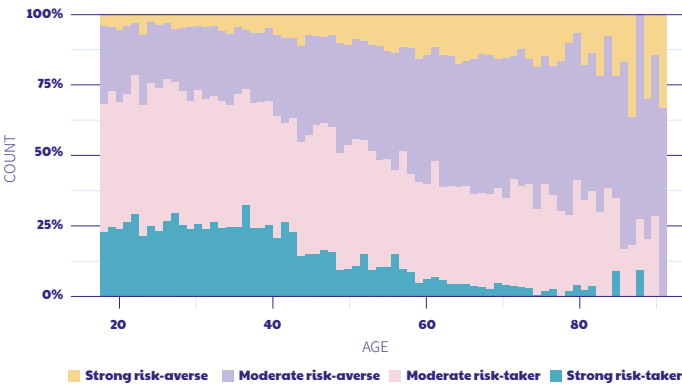
Thus, how does age affect our relationship to risk? During which stages of life does this transformation happen? How do different age groups perceive the relationship between risk and other aspects of life? We summarize here what the data reveals about age, risk-taking attitudes, and perception, as well as the five biggest risks as viewed by different age groups.

Risk attitudes at different stages of life

From the data, risk-taking attitudes remain relatively similar for young adults from 18 to 35 years old, with about 50% of the population being moderately risk-taking, 25% strongly risk-taking, 20% moderately risk-averse, and 5% strongly risk-averse. Beginning at 35, there is a gradual decrease in the willingness to take risks. For the 35-45-year-old age group, the share of the risk-takers drops from around 75% to 66%. For those 45-50 years of age, the share of the risk-taking group accounted for only about 54%. The decreasing pattern in risk-taking remains linear until approximately age 65. After age 65, the slope flattens.

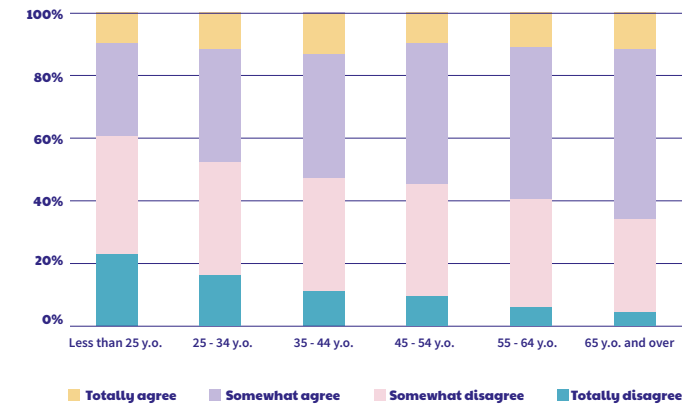
Risks permeate our lives. Depending on the stage of life we are in, we adopt different risk-taking patterns related to our lifestyle. For instance, people who are risk-averse also tend to shy away from pursuing risky dreams. Similarly to what has been observed with risk-taking attitudes, the tendency to avoid risky dreams peaks in the senior group, consisting of respondents above 65 years old. In this age group, around 66% of the population would predominantly opt to give up aspirations that call for taking too many risks. The younger, the more reckless: those who are prudent only make up 39% of the population in the youngest group, from 18 to 25, and 48% in the 25-35-year-old group.

Risk attitudes and age



Taking risky dreams and age

Answer to the statement "I'd rather give up some of my dreams than take too many risks to make them come true."



13- Malmendier, U., & Nagel, S. (2011). Depression babies: do macroeconomic experiences affect risk taking? The quarterly journal of economics, 126(1), 373-416.

14- Bonsang, E., & Dohmen, T. (2015). Risk attitude and cognitive aging. Journal of Economic Behavior & Organization, 112, 112-126.

Societal progress, risk, and age

In the same way that individuals must cope with various types of risks in their personal lives, our society, as argued by the theory of risk society, is also organized in response to risks. We live in societies that are more and more concerned with the future (as well as with safety), which gives rise to the idea of risk. How do different age groups that have lived through distinct times envision this relationship between societal progress and risks? In general, both young and late adult groups are suspicious of the statement “our societies can progress without taking any risk.” The youngest group, from 18 to 25, is the most pessimistic about the “riskless” advancement of societies: only 37% agree with the statement. Almost half of the respondents in the middle-aged group (35 to 44 years old), are nonetheless relatively optimistic about safe and smooth societal progress.

Top risks by age group

What people consider to be the most significant type of risk also varies by age. Respondents were asked to rank the top five future risks that may have a significant impact on society in the next five to ten years. Among all age groups, climate change and the pandemic were the point of agreement. Climate change

tops the ranking for all age groups except those aged 45 to 54, whose primary concerns remain pandemics and infectious diseases.

Beyond these two primary risks, young people (under 25) are more worried about environment-related risks, which accounted for three of their five top risks. Senior groups aged 55 and above, by contrast, consider societal turbulence such as security threats, terrorism, and geopolitical instability as posing more serious risks to the future. Another noteworthy observation is young people's concern about financial uncertainty, as “financial ability risks” rank fifth in the group from 18 to 25 but did not rank in other age groups’ top five.

The association between age and risk perception that has been previously addressed operates not only on an individual and group level, but also at the national scale: does a society become more risk-averse as its population ages? The shift in risk attitudes and perceptions brought by a change in demographic structure may have far-reaching effects on social, political, and economic outcomes.

Youth group (18-34)

- Strongest risk-taking attitudes
- Highest level of vulnerability
- Larger propensity for risky dreams
- Strongest belief in association between societal progress and risks
- Concern about environmental, pandemic, and financial stability risks

Middle-age group (35-54)































- Moderate risk-taking attitudes and perceived vulnerability
- Strongest belief in risk-taking and personal success
- Deepest concern in pandemic risks compared with other age groups

Senior group (55-)

- Strongest risk-averse attitudes
- Lowest level of vulnerability
- Least likely to have risky dreams
- Strongest belief that zero risks does not exist
- Concern about climate change, societal risks and cybersecurity

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Top 5 future risks of 6 age groups

	1	2	3	4	5
Less than 25					
25-34					
35-44					
45-54					
55-64					
About 65					



Climate change



Pandemics and infectious diseases (antimicrobial resistance, new strains of infectious diseases...)



Pollution



Natural resources and biodiversity risks (over-consumption of natural resources, loss of biodiversity, deforestation...)



Financial stability risks (systemic market failure, bubble burst, passive investment...)



Energy risks (growing energy demand, challenges related to energy storage technology, rising prices, supply problems...)



Cybersecurity risks (shutdown of essential services and critical infrastructures, cyber extortion, identity theft, loss of privacy...)



Geopolitical instability (decline of multilateralism, nuclear threat, energy security, military conflicts, cyber warfare...)



New security threats and terrorism (evolving terrorist attack methods with lone wolves or small groups, cyber warfare, fake news...)



The gender of risk

The language we use to describe risk attitude and behavior is remarkably gendered, influenced by archetypes that tend to establish a strong relationship between one's gender and one's propensity to take risks in daily life. However, as a critical social determinant, gender is also intertwined with other factors that revolve around risks. Here, we aim to shed light on how gender influences risk attitudes, vulnerability, and the perception of future risks, while also taking other factors, such as age, into account.

The age factor

Primary data analysis confirms the “stereotype:” women do tend to display higher degrees of risk aversion than men. Overall, the split between risk-takers and risk-averse is even in the female population, whereas 64% of male respondents are risk-takers. Furthermore, a fifth of men report being strong risk-takers. For females, by contrast, this proportion is only 13%.

However, once age is taken into account, it becomes clear how gender differences evolve with age, and how the trend varies among different risk-taking groups. For instance, in the group of strong risk-takers, there is no noticeable gender difference for the youngest age group (from 17 to 25 years old). However, the share of male risk-takers becomes almost twice as big as their female counterparts for those aged 25-45.

As age increases further, the gender gap reduces, with one exception being the moderate risk-takers group, which does not exhibit any remarkable gender disparity: the proportion of men and women remains nearly constant across all age groups, with the exception of those over 65. When it comes to the strong risk-averse group, the greatest differences lie in the number of men and women in the middle-aged group (45-65 years old),

where there are over twice as many females as males. The age effect is especially noticeable between 25 and 45 years old, where the proportion of male risk-takers reaches its peak. From 45 to 65 years old, the proportion of women declaring they are risk-averse is also the highest.

In a nutshell, while gender does indeed play a role in one's attitude toward risk, this role tends to strongly vary based on age and the risk-taking group being discussed.

Does the future shine brighter for men?

With respect to future risks and their emergence, men and women reached a consensus on the top ten future risks, consisting of four environmental risks, five societal risks, and one health-related risk. However, women are more pessimistic about the future of the most significant risks in terms of public awareness and the preparation of public authorities.

Gender accounts for up to a 7% difference in opinion on whether public authorities are well-prepared for a given risk. Similarly, for seven out of ten future risks, women are less optimistic about the awareness of the general public than men.



20%

of the male population reported being strong risk-takers, while the number for females is only 13%



Risks : Gender differences on the preparation of public authorities



5



Risks	The public authorities are well-prepared for the emergence of this risk	
	Male percentage	Female percentage
Climate change	28	26
Pandemics and infectious diseases (antimicrobial resistance, new strains of infectious diseases, etc.)	44	41
Energy risks (growing energy demand, challenges related to energy storage technology, rising prices, supply problems, etc.)	39	34
Geopolitical instability (decline of multilateralism, nuclear threat, energy security, military conflicts, cyber warfare, etc.)	36	35
Cybersecurity risks (shutdown of essential services and critical infrastructures, cyber extortion, identity theft, loss of privacy, etc.)	43	37
Pollution	35	35
Social tensions and movements (large-scale migrations, water and food insecurity, social movements and riots, inequalities, etc.)	33	32
New security threats and terrorism (evolving terrorist attack methods with lone wolves or small groups, cyber warfare, fake news, etc.)	43	36
Financial stability risks (systemic market failure, bubble burst, passive investment, etc.)	39	36
Natural resources and biodiversity risks (over-consumption of natural resources, loss of biodiversity, deforestation, etc.)	35	28

Persona: Lifestyle and risk perception

By Guillaume Renouard from Usbek & Rica

How does risk perception change from one person to another based on criteria such as age, cultural background, educational level, income, and family situation? Three fictitious profiles provide a clearer view on this matter.



Maria, 20 years old, student in San José, California

Risk profile: *concerned about climate change and her future financial stability.*

restaurant. While she's confident that she'll be able to repay her student debt once she secures an engineering position in the thriving California green economy, she's becoming worried about galloping inflation, which is pushing interest rates up and increasing the amount of debt she'll have to repay.

Yet, she's convinced that the risks she took borrowing that money will end up paying off later in her life, while helping her achieve her dreams. After all, the United States is the land of opportunity, as her father used to tell her as a child while fixing her meal. In order to save money, she lives with her parents, in the little house that they rent in the suburbs of San José.

While her parents never had it easy, they managed to escape a life of misery and drug-related violence in the Sonoran Desert to relocate to California. From them, Maria inherited a you-can-do-it mentality, and she isn't afraid of taking risks to accomplish her goals in life. She also believes that society must take risks to make significant progress, and that risk-taking is necessary to protect the environment. She's confident that, along with all the climate-conscious young people from her generation, she'll be able

to correct the mistakes from the past and save humanity from a climate change-induced collapse. Yet, every year, as spring comes to its end, she finds herself praying that the upcoming wildfire season won't be as bad as the last one.

Futurology:

Over the next twenty years, Maria's personal life will be first and foremost impacted by economics and climate change. Growing interest rates and/or a shrinking job market could increase the burden of her student debt and prove very challenging for her. Her will to build her career around protecting the environment could lead her to move to an area where she can have a significant impact, or on the contrary to invest in her local community to make it more resilient to climate change.

As a child, summer was Maria's favorite season: her parents would always take her on a road trip to enjoy the Golden State's seemingly endless supply of beautiful natural scenery. Now, while she still enjoys summer very much, she also associates it with wildfire season. As summer has become longer and hotter because of climate change, wildfires have gotten worse, clearing gigantic portions of forest in her home state every single year. This, combined with a passion for mathematics, has led her to study engineering, with the dream of working for a company that will help fight climate change, perhaps by building wind turbines, using artificial intelligence to better spot wildfires, or contributing to another innovation.

A second-generation Mexican immigrant, Maria wasn't born wealthy. Her father drove a city bus in San Francisco while her mom worked as a housemaid. They often struggled to make ends meet. To pay for tuition fees, she took out a large student loan and works night shifts at a local



Gin Gwok, 59 years old, banker in Hong Kong

Risk profile: concerned about geopolitical and climate risks that threaten his descendants' ability to live a stable life.

Gin Gwok has always been a risk-averse individual. Despite being the son of a wealthy hedge-fund manager, he started valuing stability at an age when most dream of danger and adventures and did everything to attain as safe a position as possible. After some brilliant studies in Hong Kong, he flew to the U.K. to study for two years at Cambridge University. When he returned to his homeland, he secured a well-paid position at a major local bank, where he dedicated himself fully to his job, working long hours to slowly climb up the corporate ladder and build a career that provided him with comfortable earnings and a safe position.

He married his high school sweetheart at age 25 and they had a son together, who he sent to an expensive private school to ensure he got the best possible education. When he was promoted to a top executive position, Gin Gwok borrowed enough cash to buy a brand-new apartment in The Peak, a wealthy, quiet, and safe neighborhood. Thanks to good finance management practices, he repaid his mortgage in a few years and now lives debt-free.

As he's getting closer to retirement age, Gin Gwok can count on a comfortable pension, but he has also made some wise and safe

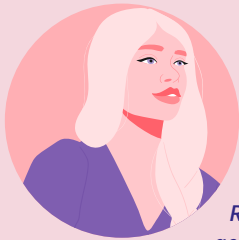
stock investments in ETFs and government bonds throughout his life to ensure he and his wife have an additional cash cushion as they enter old age. He also doesn't mind paying extra money for private health insurance as he wants to make sure that they both get the best care they need should either of them have an accident or fall ill.

Gin Gwok's daily life is comfortable and pretty risk-free. Yet, he finds it more and more difficult to not worry about the state of the world he lives in. He's been very careful since the beginning of the Covid-19 pandemic but is now wondering when the endless lockdowns will come to an end. Increased tensions between China and the U.S. are also a constant source of anxiety for him, as further sanctions against his country could isolate its economy and jeopardize job creation and prosperity. While his own position is quite safe, he worries for the future of his son and his grandchildren as geopolitical tensions continue to rise.

He's also reading news about climate change with a growing concern, knowing that a significant part of Hong Kong could end up underwater should the Intergovernmental Panel on Climate Change's most pessimistic scenarios become reality. He invested some of his fortune to help fund a city program that plans on building a levee to contain rising waters. However, the overwhelming forces of a changing climate are a risk that Gin Gwok has to learn to live with.

Futurology:

Over the next twenty years, Gin Gwok's risk perception will be influenced by two main variables. First of all, the relationship between China and the United States. An appeasement would calm his fears, while increased economic, or even worse, geopolitical tensions would confirm them. Secondly, climate change and his city's capacity to adapt to it will be a crucial matter for him, as he witnesses his children and grandchildren's life prospects improve or, on the contrary, decline based on the evolution of the fight against rising global temperatures.



Sofia, 35 years old, civil servant in Ludza, a village in the Latvian countryside

Risk profile: concerned about geopolitical risks that threaten peace, and energy risks that jeopardize her capacity to make ends meet.

Sofia was born in a country that ceased to exist when she was only three years old. While she doesn't have any memories of the USSR or communism, she's heard many stories from her parents and grandparents: enough to know how much her country has changed in a short period of time.

Like many in her country, Sofia benefited from the years of economic growth and recovered freedom that followed the fall of the Soviet Union. Her teenage years were spent listening to American rock bands that suddenly appeared on the shelves of music stores, drinking German beer, and going to underground parties with her friends.

After finishing high school, she got a job as a civil servant in the local city hall, where she worked full time until she met her future husband through one of her best friends and got married. She now works three days a week to spend more time at home with her three children, while her husband works long hours as a farm hand for a local company.

While not wealthy, the couple has enough to live a simple, yet happy life. Unlike her parents, Sofia feels lucky that she never had to skip a meal or stand in line for hours to get a loaf of bread or a pound of butter. The couple is also able to grow their own fruits and vegetables in their garden, saving a bit of money in the process. However, Sofia is increasingly worried by war making a comeback in Europe. Her parents told her many stories about the Russian occupation of Latvia, as well as the brief period of political turmoil and uncertainty during which the Soviet Union collapsed, and

she watched the invasion of Ukraine with fearful eyes.

The sanction-induced energy crisis has also put a strain on the couple's budget, as they rely on their car for everything. Furthermore, geopolitical tensions mean an increase in cyberattacks targeting critical infrastructures. A few months ago, the local energy grid was hacked, leading to a blackout that lasted for two days and caused the whole village to fear an upcoming military invasion, which fortunately never happened. It remains unclear whether the attack was caused by hackers looking for money or by a foreign power conducting cyber warfare, yet the experience brought back some very bad memories among the older residents.

While carefully monitoring her household's spending, Sofia hopes that the war will soon come to an end and is looking forward to not being anxious whenever she looks at her energy bill.

Futurology:

Sofia's next twenty years will mostly be determined by the relationship between Russia and the West. A ceasefire in Ukraine, followed by closer relationships between the two blocs, would ease her fears of war and the energy crisis that threatens her household's financial stability. In contrast, increased tensions followed by a Russian invasion of her country could lead her to emigrate with her family and look for a safer life abroad.

Interview

Are we becoming too risk-averse?

How do our societies perceive risks and how does this perception evolve over time? We discussed this matter with two experts who directly deal with risk in their professional lives, although in quite different ways.



Géraldine Fasnacht

Géraldine Fasnacht is a world-renowned freeride snowboarder, base jumper and wingsuit pilot. She was named “Adventurer of the Year 2021” by Paris Match magazine.

David Ríos Insua is a Research Professor at ICMAT and a member of the Spanish Royal Academy of Sciences. He leads the AXA-ICMAT Chair in Adversarial Risk Analysis. His research focuses on risk analysis and its application in various fields.



David Ríos Insua

We have just been through a global pandemic and are now experiencing the first war in Europe since the 1990s, two major events which have definitely tested our ability to deal with risk. You're both confronted with risk in your respective professions, David as a statistician studying risk behavior and Géraldine through your practice of extreme sports. In your opinion, how has risk perception in our society evolved recently? Faced with new systemic risks, have we become more careful and risk-averse, or on the contrary are we now numb to risk?

David Ríos Insua I'd say that we are getting more risk-averse, and I see different reasons for that. First of all, we're faced with a growing number of threats. At the dawn of humanity, we only needed to be concerned about predators and the weather: now there are threats of an atomic war, a financial crisis, terrorist events, and so on. Things have become worse recently, as risks seem to be cropping up at a faster pace, while also becoming more complex and with higher stakes. Secondly, at least in the developed world, we have become more affluent, which means that we have more to lose, and therefore our risk tolerance becomes lower.

Finally, our knowledge of a certain number of issues has also expanded. Until a few years ago, nobody cared about the palm oil in our food, but now, thanks to better information and a growing concern for the planet, we are no longer willing to accept it. The same goes for drunk driving, which was common a few decades ago but which we now consider socially unacceptable because of the risks it implies. We now demand government regulations to crack down on it.

Géraldine Fasnacht In my opinion, there are two different trends. On the one hand, I would agree that society as a whole is becoming more risk-averse. In this regard, Covid had a huge effect on us. As people were forced to stay at home, many suffered from depression and needed professional help.

On the other hand, and we see it particularly in outdoor sports, there are also people who take more inconsiderate risks. Social media has made it easier to share breathtaking videos of outdoor sports performances, which is great, but the other side of the coin is that some people just see the tip of the iceberg and don't understand that making these videos requires years of training as a professional athlete. They watch a cool freeriding video on Facebook and don't realize that it takes years of training, several days a week, to get there. They are tempted to reproduce what they have seen and end up putting themselves in danger. And as the equipment needed to do these sports has become more affordable and easier to use, the temptation is even greater.

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What has your work taught you about risk and how to deal with it?

D. I. If my work has taught me one thing, it's that we're not very good, as a species, at making probabilistic judgments, nor at thinking rationally and statistically about risks! To make decisions, we tend to rely on our stomachs rather than our brains, which is a consequence of thousands of years of evolution.

We also have all kinds of biases when it comes to assessing a risk. For example, I can formulate the exact same problem in two different ways, which will probably lead you to give a different answer, even though the data is the same. Now, of course, this is something we can work on. During my courses, I show my students how they can easily fall into different traps and how to avoid them in the future.

This is not only true on an individual level, but also, maybe more importantly, on an organizational level. For example, I once worked with the Aviation Safety Agency and realized that the tools they were using were not extremely sophisticated. By taking a rational approach

and carrying out more detailed analyses, we were quickly able to reduce their security costs and save them a tremendous amount of money.

I do think that things are getting better, though. Many governments and corporations use much more sophisticated analytical tools to make decisions than they did 50 years ago. We are moving toward more evidence-based decision-making.

G. F. I minimize risks as much as possible, as I love life too much to risk it needlessly! For example, I once had to get out of a cab in Iran because the driver was too reckless. As far as I'm concerned, risk calculation is all about knowing yourself and your environment. I'm 42. I train between three and five times a week. I know what I'm capable of, but I also know my limits, which is the most important thing. I am human and I accept it.

“On the one hand, I would agree that society as a whole is becoming more risk-averse. [...] On the other hand, and we see it particularly in outdoor sports, there are also people who take more inconsiderate risks.”

Géraldine Fasnacht

Then, of course, there is the natural element. To reach the top of the mountain, if I know I'll have to cross a glacier on the way, I wake up early to be there in the morning, when the sun isn't as strong yet and the risk of crevasses is lower. Before jumping, I check where the wind is coming from, whether it's continuous or whether it's the type of wind that momentarily disappears and suddenly comes back, and based on all of that I assess the risk and make my decision. That is why I sometimes reach the summit, but instead of jumping with my wingsuit, I decide to just walk back down the mountain because it would be too risky otherwise.

As far as I'm concerned, that is what dealing with risks means. It's knowing that even if you can't jump or ride today, it's no big deal, you can do it next week or some other time. And to be able to make those decisions, you need to train very hard, to know yourself, and to understand nature.

How do you envision the evolution of our societies' risk tolerance in the near future?

G. F. I'm personally afraid that we're edging toward the U.S. model, where you can put your cat in the microwave and then sue the company because the manual didn't tell you not to do that! As I've just said, I will never take any inconsiderate risks, but at the same time I firmly believe that as humans, we are responsible for the choices we make. I don't think that a society that tries to erase risk by depriving people of their own responsibility would be desirable.

D. I. I feel like risks will keep increasing, both in number and in diversity, in severity and complexity, while the world is also becoming more interconnected, so something that affects Paris will affect Europe as a whole, which wasn't necessarily the case before. That doesn't mean the future will be terrible, it will actually be quite interesting. However, it does mean that we need to get ready and improve our ability to face that type of future.

I feel like powerful algorithms can help us through it, but then we also need appropriate regulations to make sure that artificial intelligence is used correctly and serves the right purpose, because it can be a formidable tool to gather information and make better risk evaluations, which means better decisions.

G. F. I also believe that information is key. We are lucky enough to live in a society where information is more and more accessible, which means we can become more knowledgeable than at any other time in history. If we keep learning and apply that knowledge to make better informed decisions, we'll keep growing as a society. If we don't, and follow the worst trends that we're now witnessing on social media (e.g. people commenting about things they know nothing about), it will be more of a struggle.

“To make decisions, we tend to rely on our stomachs rather than our brains, which is a consequence of thousands of years of evolution.”

David Ríos Insua





SECTION 2

A world of asymmetry: How risk perceptions vary across countries and cultures

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Climate change, cybersecurity, political instability, energy risks... Today's world is prone to major upheavals, but the appearance of various threats is not experienced everywhere in a uniform manner. While there seems to be international consensus on our planet's environmental emergency, many historical, economic, and geopolitical factors explain the predominance of certain subjects at the national or continental level. In collaboration with the *AXA-ENS Research Chair in the Geopolitics of Risk*, this section provides a comparative analysis of the differences in perception of environmental, security, and energy risks, taking five countries as a field of study: France, the United Kingdom, China, Japan, and the United States.

Climate change: A concern without borders

Focus on demographics

Age and gender both play a role in assessing the risks of climate change. Across all countries surveyed except China, women tend to be somewhat more likely to describe climate change as a major threat than men. The United States showed the greatest gender gap with a 20 percentage-point difference on this issue, with 60% of female respondents considering climate change a top priority versus 40% of men. Meanwhile, in China, the gender gap is almost nonexistent, with just a 2-point difference between men and women (51% versus 49%).

Country-to-country differences exist among the age groups who are mostly concerned about climate risk. For instance, looking at older generations, Japanese respondents over 65 are significantly more likely to view climate change as a threat (38%) compared to the same age group in the United States (25%) and in China (9%). Zooming in on the U.S., respondents under 25 demonstrate the most substantial margin of concern regarding climate change compared to younger generations across all other countries surveyed (12% versus 4% in the U.K.). This challenges widespread assumptions about global generational divides on this issue and highlights the importance of considering country-specific contexts when developing solutions for global challenges.

Climate change is already one of the most pressing challenges to global security, and it will only become more severe in the decades to come. It is therefore no surprise that in 2022, respondents from all around the world shared similar concerns regarding climate risks. Climate change is ranked as the number one risk facing society in the next 5 to 10 years by British (50%), American (38%), French (54%), and Japanese respondents (52%). Chinese respondents are also aware of climate risks (31%) but see pandemics and infectious diseases (51%) as a more immediate threat.

Awareness around climate-related risks has been gaining momentum around the world, which is not only a consequence of outreach campaigns, but also a result of respondents' first-hand experience of the effects of climate change. Extreme weather events such as droughts, wildfires, and floods, while more severe in some areas than others, were felt globally in 2022, which certainly reduced the perception gap regarding climate change. As well as reflecting the growing concern about climate change, the survey's results demonstrate how deeply it has impacted global risk perceptions in recent times.

Still, some differences exist between countries. In China, climate change is seen as slowly emerging (45%), while many American respondents (41%) consider that it is progressing rapidly. It is highly likely that this trend is driven by the steady increase in extreme weather events in the U.S. throughout 2022, a year that will be remembered for its devastating storms and floods as well as its extreme heat waves, droughts, and wildfires.

Contrastingly, in Japan, an overwhelming majority of the respondents define climate change as a longstanding and enduring issue (62%). As a result of its geographic characteristics, the country has experienced numerous weather catastrophes over the years, including the tsunami that caused the Fukushima nuclear disaster in 2011.

Furthermore, the identification of more specific climate-related risks also varies across

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62%

of Japanese respondents consider climate change as a longstanding and enduring issue

countries. In France, for example, individuals are mostly concerned about pollution, with roughly two-thirds of respondents ranking it as the fourth-greatest risk after geopolitical instability (35%). In China, where respiratory mortality linked to air pollution is a major public health issue¹, respondents largely share this concern (sixth-biggest risk for 26% of respondents). By contrast, pollution is seen as less of an issue in the United Kingdom (eighth-greatest risk), the United States (ninth) and Japan (tenth). These results demonstrate that behind a shared sense of eco-anxiety lies diverging sociocultural contexts, constructed notions of risk, and historical legacies.

In terms of finding solutions, a majority in France (52%), the United Kingdom (56%), and Japan (48%) believe that decisions will be most effective if made at a global level, and a sizeable share of the public in China (47%) and the United States (45%) agree. This indicates that trust in international institutions, albeit recently challenged by the global health crisis, still prevails². The vulnerabilities highlighted by the Covid-19 crisis provide an incentive to reinforce cooperation to tackle challenges, on both continental and global levels³.

1- [Chinese Air Pollution Linked to Respiratory and Cardiovascular Deaths, American Thoracic Society, 10 February 2017.](#)

2- [Begiraj, J., and Ippolito, F. \(2021\). COVID-19 and International Organizations: Challenges and Opportunities from the Perspective of Good Governance and the Rule of Law. International Organizations Law Review 18, 3, 293-306, Available From: Brill.](#)

3- [Summary Note of COVID-19 Webinars of the Partnership of International Organizations for Effective International Rule-making, OECD.](#)



Neighbors Japan and China differ in their perception of geopolitical risks

Two neighbors can have quite different opinions, and when it comes to geopolitics, that is certainly the case with China and Japan. While Chinese respondents perceive geopolitical instability as the second-greatest threat to society in the coming years, respondents in Japan are much less anxious. Geopolitical risks only rank fifth for Japanese respondents, after climate change (52%), pandemics and infectious diseases (47%), energy (45%), and cybersecurity risks (37%).

Despite their geographical proximity and certain shared cultural traits, the two countries have very different perceptions of current geopolitical issues such as the decline of multilateralism, nuclear threats, energy security, military conflicts, and cyber warfare. This could be a consequence of the divergent roles the two countries play in the international system. Despite its permanent seat on the UN Security Council, China is currently experien-

cing growing isolation on the international scene, fueled by global criticism of Beijing's aggressive policies and human rights violations. This could naturally generate uncertainty and anxiety among Chinese citizens, while their Japanese neighbors are unaffected by such controversies.

The differing perceptions of Chinese and Japanese populations are also keenly reflected in how they estimate the effects of geopolitical instability on their respective societies. Chinese respondents demonstrate high levels of awareness about geopolitical risks (77%), while in Japan, the public is more likely to report being "unaware of those issues (51%).” This indicates that although geopolitical risks may have equally significant impacts on most East Asian countries, they are not perceived in the same way by the general public in China and Japan.



77%

of Chinese respondents demonstrate high levels of awareness about geopolitical risks

Despite these differences in opinions, the two countries tend to agree on the solution for preventing adverse consequences of global crises. Chinese and Japanese respondents respectively rate the military as the second and third most capable actor to address a potential global crisis in the next 12 months. Such faith in the army's ability to respond to a crisis indicates potentially growing concern among the Chinese and Japanese populations about the intensification of conflicts in East Asia.

Contrasting perceptions of geopolitical risk in China and Japan are not only related to their respective positions in the international order, but also to their histories. Currently, Japan benefits from the protection provided by its military alliance with the United States. However, considering its history as the only country to have experienced the full force of nuclear weapons, Japan is acutely aware of the possibility of a global war and the reality of

its consequences (75%). This awareness has gained momentum lately among top public officials, as illustrated by Japan's record-high 2023 defense budget. This new National Security Strategy⁴ shows a clear political will to invest in the country's defense capabilities in the coming years. As the biggest military buildup in the country since World War II, it is certainly possible that Japanese perceptions of risk may change in 2023.

On the other hand, while geopolitical instability is on the minds of respondents in China, they also appear to be more skeptical of the likelihood of war. Interestingly, despite a higher level of awareness, the Chinese population is less convinced than the Japanese that geopolitical tensions could lead to fresh global warfare. For the majority of Chinese respondents, geopolitical tension has always existed, and the risk of escalation into a world war remains low (56% versus 25% in Japan).

4- [National Security Strategy of Japan, Ministry of Foreign Affairs, December 2022.](#)

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How are Europeans coping with growing geopolitical tensions?

Since the invasion of Ukraine, geopolitics has become omnipresent in the European media, yet Europeans are divided on the importance of geopolitical stability. This is particularly evident when comparing public opinion in France and the United Kingdom. While both populations share similar levels of awareness of geopolitical risks (51% in France versus 56% in the United Kingdom), they are not perceived with the same urgency in both countries.

A sizeable portion of French respondents view geopolitical instability as the third-greatest future risk that may have a significant impact on society in the next 5 to 10 years, while their counterparts from the U.K. rank geopolitical risks as only the fifth-biggest threat, instead considering energy risks (45%), pandemics (39%), and cybersecurity (35%) as greater causes for concern. This regional divide on the impact that political and security crises

could have on economic, human, or diplomatic interests can be explained by the way geopolitical risks are depicted by political elites in the two countries. In France, President Macron has been a strong and ambitious proponent of liberal internationalism and has pushed geopolitical issues to the top of the agenda during his time in office. Meanwhile, in recent years, the United Kingdom has been increasing its focus on bilateral relations regarding foreign and security policies⁵.

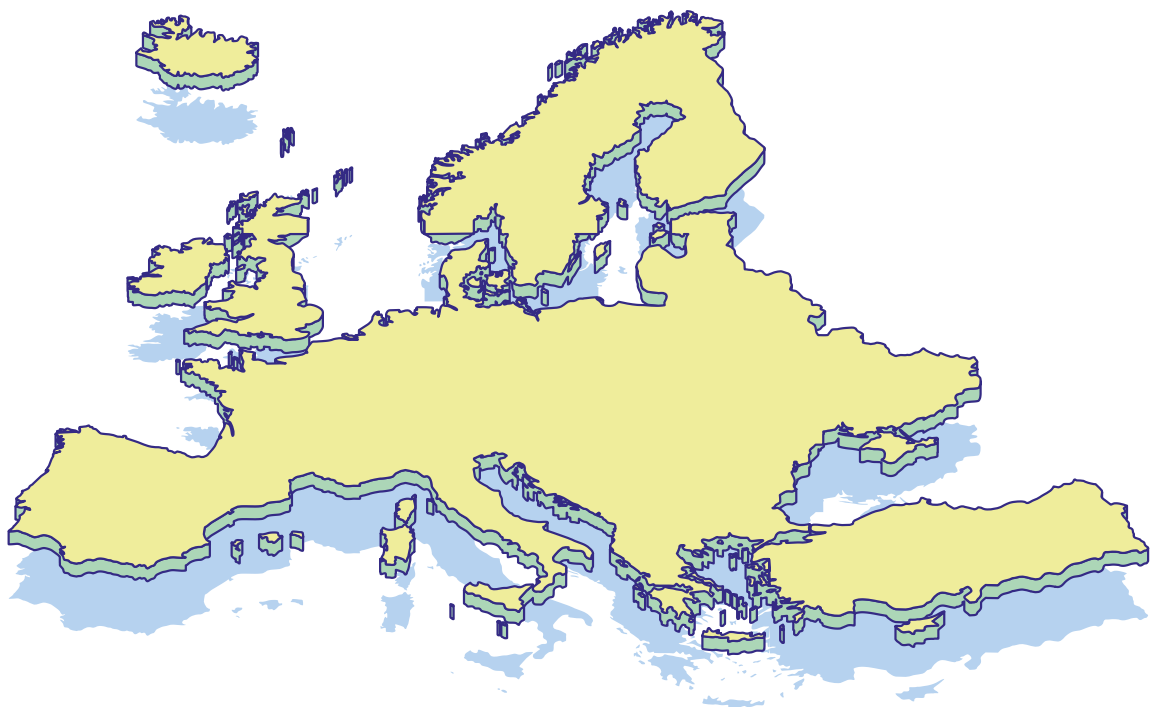
Divergences between the two populations also appear when respondents are asked what level of decision is the most appropriate in addressing global issues. Respondents in the United Kingdom show a tendency to trust international organizations more than the French (55% versus 44%). In France, the population is more likely to believe that decisions to address future risks should be made at the country level (34% versus 22%).



55%

of respondents in the United Kingdom show a tendency to trust international organizations (versus 44% in France)

5- [Summary of France's Bilateral relations with the United Kingdom.](#)



Despite these differences, the French and the British believe that geopolitical tensions have the potential to escalate. In both countries, an overwhelming majority believe that current tensions could lead to a new global war (69% in France versus 74% in the U.K.).

Anxiety about the current state of the world is shared among populations across the European continent. Over the last year, these concerns have unfortunately been confirmed and sharpened by the war in Ukraine. It is therefore no surprise that the fears raised by the reality of an armed conflict in Europe have transformed into a determination to act, in Paris and in London.

Russia's invasion of Ukraine has prompted a review of defense budgets in both countries. While the United Kingdom plans to review its 2021 Integrated Review and Defence Command Paper⁶, in France, the Ministry of Armed Forces has proposed a €49.3 billion defense budget for the fiscal year 2023⁷, marking an increase in defense spending for the sixth year in a row. This is expected to increase even further in the coming years as each country seeks to modernize its armed forces and expand its military capabilities in response to growing security threats around the world.

Demographic differences in the perception of geopolitical risks

The results highlight that in both countries, female respondents (52% versus 48% in France; 54% versus 47% in the United Kingdom) and older respondents tend to be the most concerned about geopolitical risks. In the United Kingdom, adults in their mid-50s to mid-60s are more likely to be preoccupied with geopolitical instability (26%). Meanwhile, in France, real signs of concern arise slightly later, from the age of 65 onwards (26%). Nevertheless, on average, younger generations in France (between 18 and 25) are almost three times more likely to consider geopolitical instability a major threat than young people in the United Kingdom (8% versus 3%).

6- [The war against Ukraine and the Integrated Review, Council on Geostrategy, 14 July 2022.](#)

7- [Projet de loi de finances des Armées 2023, Ministères des Armées.](#)

A tale of two countries: Energy vulnerability in France and the U.K.

Following the conflict in Ukraine, disruptions in gas supply chains have made energy security a major issue everywhere in Europe. Nonetheless, the perception of energy risks differs from one country to another. This is particularly true regarding France and the United Kingdom, whose respondents present a stark contrast in their understanding of risks related to energy storage technology, rising prices, and supply issues.

While U.K. respondents rank energy as the second-biggest risk based on potential impact to society over the next 5 to 10 years, in France, energy is perceived as more of a marginal concern (8th major risk). Consequently, although respondents from both countries perceive energy threats as a longstanding phenomenon (47% in France and 42% in the U.K.), U.K. respondents are significantly more likely to be aware of energy challenges than their French counterparts (77% versus 56%). This substantial difference can be explained by the specificities in the public debate around energy in the two countries. In France, the discussion around energy security and stability focuses on nuclear safety and reliability, as nuclear energy is widely portrayed as a critical guarantee of energy security. In the U.K., rather than nuclear energy, there is a greater acknowledgement of the country's dependence on imported fossil fuels.

In light of its energy vulnerability, the U.K. government is focused on securing supplies. The U.K. formerly benefitted from a steady flow of oil and natural gas extracted from the deep waters of the North Sea, which once constituted its main source of power generation. But it has become increasingly dependent on imported energy in recent years. The publication of the government's new Energy Security Strategy in 2022⁸ demonstrates the efforts being made by authorities to reduce

this dependence. As secure energy access will determine the country's capacity for action in other areas, it will become even more crucial in the years to come.



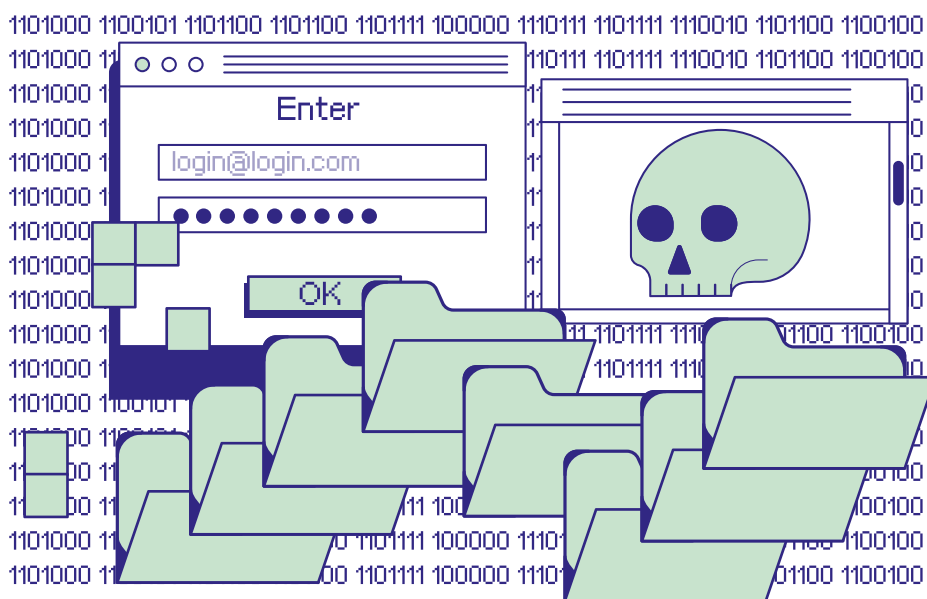
**2nd
biggest risk
for U.K. respondents is
energy, reflecting the
country's vulnerability
and dependence on
imported energy**

In France, the situation is quite different, since energy supply is already relatively secure. The country benefits from a robust network of domestic production capacity, as well as extensive natural gas and nuclear power generation infrastructure. However, further investments in clean energy technologies, particularly solar and wind power, will be needed if France is to meet its long-term climate change targets.

Today, the United Kingdom and France both face serious challenges in their efforts to reduce carbon emissions and fight climate change. This goes hand in hand with ensuring energy security and maintaining a competitive energy market that remains affordable for consumers. While energy insecurity might pose an equal threat on both sides of the Channel, it remains uncertain whether these divergences in opinion on energy risks will continue, with increasing emphasis placed on energy security.

8- [British energy security strategy](#), HM Government, 7 April 2022.

In the U.S., cyber threats are on the radar



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Technology is becoming more deeply integrated into various aspects of daily life and business processes. One visible example of this is the digitalization of information through connected devices. This exposes individuals and businesses alike to an increasing number of threats and presents security challenges for governments.

Among Americans (37%), cyber threats are considered the third most important risk after climate change and pandemics. Additionally, respondents in the United States appear very much aware of cybersecurity risks (53% versus 39% in Japan). This high level of awareness reflects a widespread recognition of the multifaceted nature of cyber risks and their potential to affect all layers of society. They not only impact Americans at an individual level, but also have deep implications for the

government, companies, and other entities that manage the nation's infrastructure.

Results demonstrate that U.S. respondents are comparatively much more concerned about cybersecurity than about geopolitical instability (third versus eighth risk out of 10). Regardless of variations across states, the United States' economy is very much driven by small businesses, and given that 60% of small businesses that suffer a cyberattack go bankrupt within six months⁹, it is no surprise that cyber threats like ransomware tend to be taken very seriously. The fact that U.S. respondents feel exposed to cyber threats is also reflected in most U.S. financial stability surveys, in which cyberattacks typically rank among the top risks¹⁰.

In addition to the cyber risks posed to individuals and companies, the threat of attacks

9- [The Need for Greater Focus on the Cybersecurity Challenges Facing Small and Midsize Businesses, US Securities and Exchange Commission, 19 October 2015.](#)

10- [DTCC 2021 Systemic Risk Barometer Survey.](#)

against critical infrastructure is ever more present¹¹. Compared with other countries, American respondents tend to perceive cyber risks as a rapidly growing threat (45% versus 22% in Japan). The rise of cyber anxiety that has occurred in the U.S. over the past year has very likely been influenced by the recent media coverage of Russian cyberattacks on essential Ukrainian services and attempts to secure footholds in critical infrastructure in Ukraine (government, financial, and energy)¹². The scope of some of these attacks has been severe, with some causing widespread power outages across Ukraine. There is also no doubt that the current energy crisis sheds light on cyber vulnerabilities and hints at what cybersecurity might look like in the future. In this context, cyber threats will continue to present serious challenges for government agencies and highlight the need to protect critical sectors such as energy and transport, in which disruptions can have serious consequences.

In addition to the risk posed to infrastructure, cyber threats can also be understood through the prism of information¹³. Foreign interference, such as cyberattacks by government-affiliated players and non-state players, is a prime example of that. While foreign manipulation of information and attempts to influence domestic politics for ideological and geopolitical motives primarily target governments, these efforts nonetheless affect citizens. The high levels of cyber concern among U.S. respondents might also result from the increased media coverage of threats posed to election infrastructure, particularly noticeable during the 2016¹⁴ and 2020 federal elections¹⁵.

This awareness reflects a sense of vulnerability and desire for a comprehensive approach to cyber risks, which would focus on the security of critical infrastructure, as well as disinformation and geopolitics. Only through continuous coordination in the international community and among diverse stakeholders (including governments, private industry, civil society, academia, and journalists) can the effects of these growing threats on the U.S. economy and national security be mitigated.

Focus on demographics

Perceptions of the importance of cybersecurity vary significantly within the United States. Young Americans are generally less likely to worry about cybersecurity — just 8% of U.S. respondents who consider cyber risks a priority are under 25. However, this changes as soon as respondents enter the workforce: individuals from ages 25 to 34 are roughly twice as likely to find cyber risks worrying (18%).

Older generations tend to have more pronounced negative views of cyber risks, with respondents above their mid-60s reporting high levels of cyber-related concerns (29%). With regards to gender, female respondents are notably more likely to worry about cybersecurity than male respondents (61% versus 39%).



45%

of American respondents tend to perceive cyber risks as a rapidly growing threat (versus 22% in Japan)

11- Federal Bureau of Investigation (FBI), [Cybersecurity and Infrastructure Security Agency, Office of the Director of National Intelligence, and National Security Agency, Joint Statement, 5 January 2021](#).

12- [Special Report: Ukraine an Overview of Russia's cyber-attack activity in Ukraine, Microsoft, 27 April 2022](#).

13- In fact, "new security threats," defined as "evolving terror attacks, cyber warfare and fake news" are the fourth biggest risk after "cybersecurity threats," according to American respondents.

14- i.e., the 2016 Democratic National Committee data leak.

15- [Foreign Threats to the 2020 U.S. Federal Elections, National Intelligence Council, 10 March 2021](#).

Interview

Tension and geopolitical conflicts: Building a bridge over troubled water

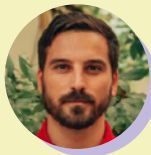
In 2022, war returned to Europe for the first time since the early 1990s, causing worldwide disruptions, while the specter of a potential Chinese invasion of Taiwan loomed as more likely than ever. After two years of headlines focused on the pandemic and health issues, geopolitics has come back with a vengeance. So too has contemplation and discussion of the geopolitical risks and challenges we will face in the years to come. We asked two experts for their views.



**Daria
Krivonos**

A trained macro-economist, **Daria Krivonos** is the CEO of the **Copenhagen Institute for Futures Studies**, an independent think tank which informs organizations and decision makers about long-term trends.

Guillaume Capelle is the co-founder of **SINGA**, an organization that helps migrants, refugees, and asylum seekers find resources, connect with locals, and start their own businesses.



**Guillaume
Capelle**

Russia's invasion of Ukraine has shaken the world in many ways, fostering a multifaceted crisis, from tension in the East China Sea to skyrocketing energy prices and threats of famine in developing countries. Do you feel like we're living in a new era of systemic risk, where risks are more and more intertwined with one another?

Guillaume Capelle I couldn't say whether risks are now more intertwined than they were five, ten, or even a hundred years ago. However, I feel like now we tend to better identify the connections between these different risks, probably because they are more visible. For example, we can see how the war in Ukraine, a geopolitical conflict, has created an energy crisis and a refugee crisis. On the other hand, it is likely that climate change and diminishing fossil fuel supplies will generate new types of war in the future, as countries become frightened of a lack of key resources and start conflicts in order to secure access to them.

Daria Krivonos I feel like this interrelation between extreme weather events, wars, and the movement of people is the key to predicting and understanding future crises. This will be particularly obvious as the consequences of climate change continue to unfold. Many individuals will have to flee their countries or even their continents to find a more suitable place to live because of harsher climate conditions, but also potential wars breaking out as

people fight over resources. That could create a refugee crisis and a resulting increase in geopolitical tension. A climate crisis can therefore easily turn into a healthcare or geopolitical crisis.

This could prove even more serious if the only institution we have in place for the whole world right now (despite its limitations), the UN, keeps being paralyzed by vetoes and non-votes.

G. C. Another difficulty is that an issue like migration is often misrepresented and misunderstood. For example, when we think about migrants (and this is definitely influenced by the media) the image that comes to mind is usually a young man, either risking his life to cross the Mediterranean or generating insecurity in his new country of residence, depending on where you stand politically. Yet, in a country like France, most migrants are women, and a third are children. We don't have an accurate vision of who migrants really are, so our capacity to help them is hampered.

We also encounter misconceptions when assessing the environmental impact of migrations. The carbon footprint of a refugee fleeing his country at war is extremely low, much lower than a tourist's, not to mention a business traveler's. The most dangerous type of migration is therefore economic migration, for tourism or for business. And yet that topic is barely ever mentioned.

Your organizations were both founded with the goal of overcoming our short-term bias, instead looking further ahead. In your opinion, how can we prepare better for the future?

D. K. I do believe that short-termism is the biggest threat to our ability to mitigate risks. One solution could be, as Finland did, to legally force governments to take into account the long-term impact of their policies. Will this new measure that we're about to pass still be a good idea 10 years from now? Have we future-tested its propositions? These are the questions that decision makers need to be forced to ask themselves.

G. C. When we started SINGA, helping refugees meant taking care of their basic needs, which

could mean finding food, dealing with administrative paperwork, or finding them a stable housing situation. We took another approach and chose to focus on the top of Maslow's hierarchy

"I do believe that short-termism is the biggest threat to our ability to mitigate risks."

Daria Krivonos

of needs, helping refugees connect with locals to improve their social life, or start their own businesses to not only secure a stable source of income, but also a job that fulfills their aspirations and contributes to their personal growth.

Now, of course, this won't magically solve their most urgent problems, but when a person is given the chance to work and create their own solutions, all of a sudden, all these new paths that were once invisible start opening up and their basic needs can be met with fewer resources.

For example, we mixed both French and refugee entrepreneurs in our incubator, and as the refugees started to talk about their challenging housing situation, how they had been living on a friend's couch for the last six months and so forth, this gave rise to a project, Caracol, which is a co-living solution for individuals going through hardship. It shows that adopting a long-term mindset can go hand in hand with solving the most urgent issues.

After WWII, the world's most powerful countries came together and created the UN. Despite its flaws, the institution was a fairly successful attempt to create a global forum where world problems could be discussed. How can our governments and worldwide organizations evolve to tackle this new era of systemic risks?

D. K. We are indeed looking at a crack in history right now, and it's about time that we restructured how we work together to solve global issues.

The last time we restructured the world, after WWII, very few players were in charge. They had

won the war and were the wealthiest and most powerful countries at that time. This cannot be the case anymore, and we have to take the whole world into account. We have to create something like the Senate in Star Wars, where the whole universe meets and discusses common issues!

That being said, I'm a huge believer in diplomacy. That's why, in my opinion, we should be careful before chopping off the arms and legs of the UN, no matter how imperfect it is, because it took such a huge effort to get there in the first place. That doesn't mean we can't adapt it to the 21st century. Should some countries still hold a veto right? Should there still be a security council? These questions are worth asking.

G. C. I share your view that the UN is a great, but imperfect, institution that could be updated to deal with contemporary challenges. If I had one desire, it would be for an international organization like the UN to bypass nation states and be directly in touch with individuals who need help, so that when a conflict erupts, like in Ukraine, those who are forced to relocate abroad, as well as the people who host them and provide them with different services, can all benefit from a basic income. This would create a very powerful feeling of belonging to mankind as a whole.

This might seem paradoxical, but I believe that the best scale to act on major worldwide issues like migration and climate change is locally. We should therefore do with diplomacy what Wikipedia has done with the encyclopedia, i.e. provide local communities and individuals with the right resources so that they can become players for change.

D. K. On this matter, and to finish with a provocative question, I personally wonder whether we'll still have nation states in the future. They are quite a recent and artificial construction, and today there are already some gigantic corporations that are more powerful than most nation states.

Furthermore, a growing number of us tend to go study and then work abroad, learn another language, which challenges the (sometimes fictional) homogeneous culture on which the nation state was built.

G. C. We'll always need some level of local govern-

ment to fix a sidewalk or build a new bridge, for example, but I also wonder whether the nation state will survive the great transformation we're going through, as climate change provides humanity with a common destiny, as the internet connects individuals like never before, meaning that your identity and sense of community goes well beyond what's written on your passport.

D. K. This poses two big questions. First, if nation states no longer exist, who will work together in international institutions to solve global problems? Secondly, who will fulfill the traditional role of the nation states, which have historically protected us against enemies and taken care of our health?

"We should therefore do with diplomacy what Wikipedia has done with the encyclopedia, i.e. provide local communities and individuals with the right resources so that they can become players for change."

Guillaume Capelle

To conclude, I also believe that the way we think about global risk will have to go beyond earth, as space is the next frontier. Several countries and companies are currently trying to go back to the Moon, and yet space regulations are totally outdated. And then there is Starlink! A few years ago, who could have predicted that an eccentric billionaire would help a country at war push back against its aggressor by providing it with a satellite connection when its internet infrastructure had been bombed? That is why making long-term predictions is so challenging!

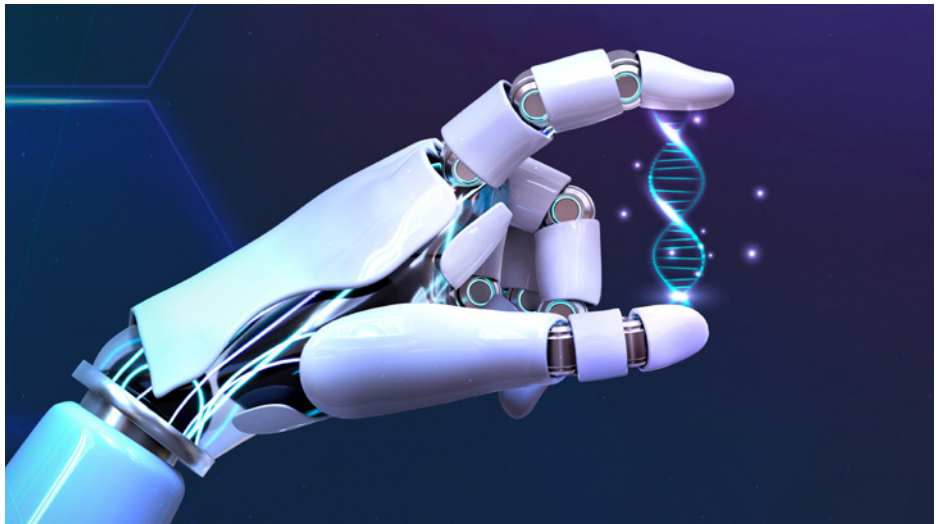


SECTION 3

Searching for trust

Science fiction is full of dystopian futures where artificial intelligence has taken over and threatens humanity. While the myth of the technological singularity still seems a long way from becoming reality, advances in synthetic biology, quantum computing, and artificial intelligence have opened the door to new threats. As global uncertainty dominates the horizon and crises seem to multiply, which actors will people trust to manage potential crises? How is technological progress reshaping our vision of future risks? This section analyses the reshaping of trust relationships in light of current upheavals, evaluates the influence of major technological breakthroughs, and imagines the future of protection in 2050 through three scenarios.

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Emerging risks: Who's afraid of new technologies?

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By Timothy Shoup & August Leo Liljenberg (CIFS), in collaboration with the AXA Foresight Team

Some technological advances are so great that they create a major break in our understanding of what is possible. Eighty years ago, such a rift took place with the invention of the atomic bomb, which transformed the way we conceived of warfare and reshaped the world order.

Today, scientific and technological progress hold the same potential. From artificial intelligence to synthetic biology, experts and policymakers are beginning to dissect the potential consequences of these unfamiliar, highly advanced, and potentially devastating new additions to the toolboxes of adversarial powers.

When referring to the world order, we often operate within a “Great Power” discourse and assume that geopolitical disruptions require geopolitical might. The democratization of destructive technologies, however, will likely create the conditions for smaller non-state players, or even individuals, to have a greater international impact.

How will these cutting-edge technologies reshape our society in the next 10 to 20 years? Where will they lead us? To answer these questions, we must first understand the complex interplay between humans, technology, and geopolitics, and how this relationship will evolve in the future.

There has been a clear decline in people's trust of technology between 2020 and 2022.

Over the past two years, the percentage of people who think that new technological advances actually create more risks than they solve has increased. This growing distrust could be a proxy for deeper alienation from and fears of emerging technologies in the future.

The dangerous rise of garage biology

The intelligence and information thresholds required to use advanced technologies in a competent manner are declining fast. Years, even decades, of education and training used to be the norm before people could acquire in-depth expertise in a form of technology. Not so much anymore. There are three main areas in which the democratization of emerging technologies poses a threat: synthetic biology, quantum computing, and artificial intelligence.

Similarly to how individuals and small groups build computer viruses today, do-it-yourself biohacking tools could in the future significantly lower the bar for individuals with very basic training in biology to enhance biological pathogens. And that is where the next global pandemic could potentially originate. Whereas concern was once directed toward off-beat experiments held at university labs—see, for example, the Dutch virologist successfully making the 2011 H5N1 “swine flu virus” more transmissible to humans—technology is now making “garage biology” an international threat¹.

Gene-editing tools such as CRISPR have drastically lowered the skill requirements for potential bioterrorist groups to modify (or replicate) deadly pathogens. By some estimations, it could cost as little as \$10,000 to bioengineer smallpox at home². We have, in many ways, already entered a world where, through the internet, several laboratory processes can be followed as simply as a recipe to bake chocolate cake. Furthermore, the genomes of a range of organisms and pathogens are already publicly available online.

Deciphering the implications of quantum supremacy

Whereas the risks of synthetic biology can exist on a micro-scale, the race toward quantum computing operates at a global level. While not yet mature, quantum computing holds enormous potential for biotechnology, artificial intelligence, and machine learning. However, the ability of these computers to process a huge amount of data in a short time is also a threat for current data encryption methods. The first country to achieve quantum supremacy would have a decisive advantage if they decided to engage in cyberwarfare against the military systems of other nations.

Such potential has caused a techno-nationalist quantum race among global powers. In the U.S., the Trump administration made it harder for Chinese students to study quantum-related degrees and got the Netherlands to block exports of lasers which are essential to quantum computing in China³. On the other hand, through its “Thousand Talents Plan,” China has tried to lure academics from the U.K. and U.S. to work on quantum computing in China⁴. Current practices in strategic intelligence, military warfare, and corporate IP strategies are all based on certain assumptions regarding cybersecurity, and the proliferation of quantum computing platforms could completely shatter them.

Artificial intelligence and the virtues of cautiousness

The potential that artificial intelligence holds is far more uncertain. According to the American political scientist Ian Bremmer, we have been living in an “AI Cold War” since 2018, the year when China announced its ambition to become a world leader in AI by 2030⁵. Although parallels could be drawn here with the race toward quantum computing—both rely on advanced semiconductors, for example—a key difference exists in terms of the scope of geopolitical players.

Big Tech companies such as Meta, Amazon, Microsoft, and Alphabet have all heavily invested in the AI marathon⁶. The binary view of an “AI Cold War” risks neglecting the immense amounts of data, and therefore control over information and communication, that Big Tech companies already hold. Apart from technological and informational infrastructure, some scholars argue that the *rhetoric* around an “AI Cold War” poses an equally existential risk in the immediate term as AI itself.

For example, the philosopher Stephen Cave has developed a model demonstrating that greater enmity between regional AI powers, as well as simply possessing greater information about other powers’ capabilities, significantly increased the risk of AI “corner-cutting” and ignoring safety protocols⁷. Within AI, the risk of a lack of code of conduct—let alone a technological lingua franca in the scenario where AI becomes sufficiently advanced—is much too great to ignore.

1- Nell Greenfieldboyce: “Scientists Publish Recipe For Making Bird Flu More Contagious,” NPR (2014).

2- Izabella Kaminska: “The garage biohackers who manipulate DNA,” Financial Review (2021).

3- Stu Woo & Yang Jie: “China Wants a Chip Machine from the Dutch. The U.S. Said No,” Wall Street Journal (2021).

4- Zhanna Malekos Smith: “Make Haste Slowly for Quantum,” Center for Strategic and International Studies (2021).

5- Nicholas Thompson & Ian Bremmer: “The AI Cold War That Threatens Us All,” Wired (2018).

5- Nicholas Thompson & Ian Bremmer: “The AI Cold War That Threatens Us All,” Wired (2018).

6- Steven Rosenbush: “Big Tech Is Spending Billions on AI Research. Investors Should Keep an Eye Out,” Wall Street Journal (2022).

7- Stephen Cave: “An AI Race for Strategic Advantage: Rhetoric and Risks” in Conference on AI, Ethics, and Society (2018).

AI perception, a culturally grounded issue

Public concerns about the potential risks posed by AI revolve around different aspects of the technology, varying from country to country and largely depending on each country's history and stage of development. In China, the largest concern about the development of AI technology lies in the risks of liability and lack of across-the-board regulations⁸. This concern is not unfounded, given that the state has been advancing AI technology at a rapid pace for a few decades, while its supporting policy and legal infrastructures are still under development.

China's AI technology lagged behind that of most western countries until the early 2000s. Facing a lack of resources in

addition to economic challenges, the state adopted a "catch-up" approach to its AI development⁹. Now, the Chinese AI market is worth about \$23.2 billion, and this figure is projected to reach \$61.9 billion by 2025¹⁰. This rapid advancement in the field has, however, inevitably led to regulatory, data privacy, and data sharing issues. By contrast, in Japan, where the introduction of computer technology and the start of early research on AI can be traced back to the 1960s, concerns focus on the inherently existential character of this technology. Around 46% of respondents in Japan consider the "emergence of advanced AI an existential threat to mankind" as the main risk in the arena of Artificial Intelligence and Big Data.

Unfortunately, when pondering the consequences of future technologies in the realm of geopolitics, it is easier to find questions than answers. Ultimately, the future will depend on the values held by citizens, what individuals think of the trade-offs between liberty and freedom versus a sense of safety and security, and who they will turn to in order to meet those needs. Such a world, characterized by uncertainty around the development of emerging technologies, may very well require greatly amplified capacities for preventive policing as a means of global governance.

8- 37% of respondents in China chose "Liability challenges and lack of uniform regulation of Artificial Intelligence" as their main concern about risks related to Artificial Intelligence and Big Data.

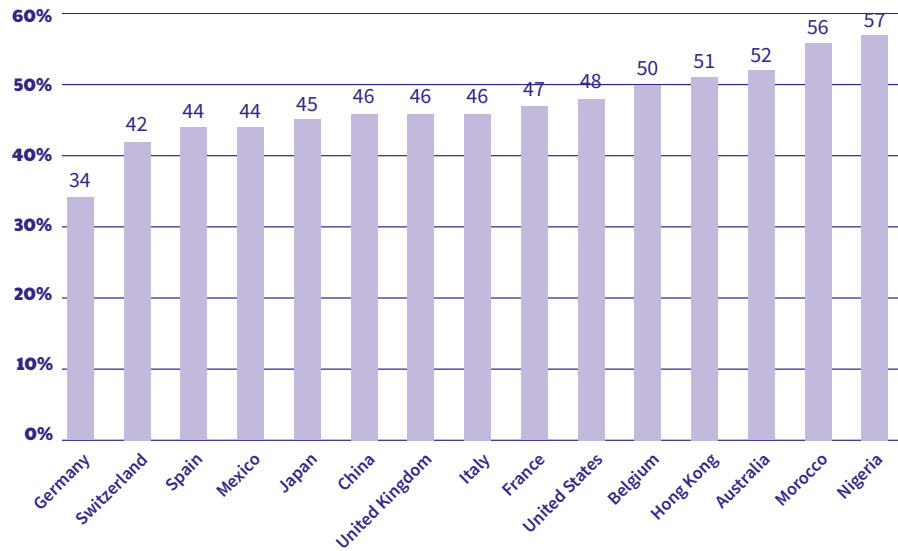
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10- Alexander Chipman Koty: "Artificial Intelligence in China: Shenzhen Releases First Local Regulations," China Briefing (2021).

Appendix

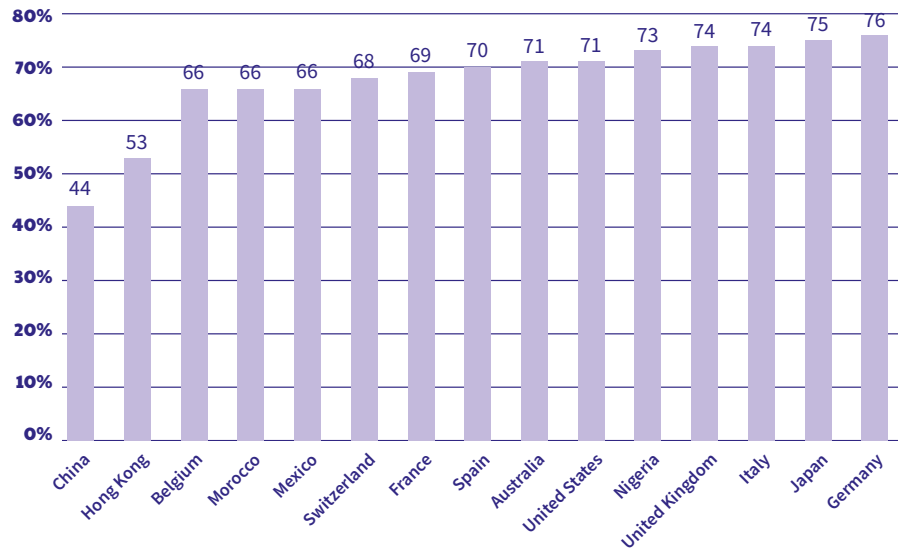
Country differences in viewing technological advances and risks

Percentage of respondents who agree with the statement “Technological advances create more risks than they solve.”



Country differences in viewing the future evolution of geopolitical tensions

Percentage of respondents who agree with the statement “Geopolitical tension is getting more and more serious and could lead to a new era of global warfare.”





Who (or what) will we trust to protect us? Three future scenarios

By Guillaume Renouard from Usbek & Rica

Our world is becoming more and more uncertain, which naturally leads us to wonder: who will we trust tomorrow, and where will safety come from?

These days, it seems like we rely more and more on artificial intelligence to make decisions. We also use wearables to monitor our own health, while blockchain opens up the possibility of safe, anonymous internet transactions. All of which shows we are putting more and more trust in technology. **This idea is played out in the first scenario.**

At the same time, Big Tech is also experiencing growing skepticism from the public, as well as increasing regulations from governments around the world. In the meantime, the Covid-19 pandemic proved that public authorities, far from being obsolete, are still our point of reference in times of crisis, with big corporations working hand in hand with governments to help solve those crises. **In the second scenario, we explore whether this type of cooperation between leaders and big corporations can retain our trust in the future.**

Finally, climate change is one of the biggest risks we will face in the years to come. Confronted with the limits of capitalism and the infinite growth model, individuals could be tempted to press the brake pedal and shift their trust back toward their close community. **This possibility is further developed in the third scenario.**

1st scenario:

What if trust came from technology?

The year is 2050. Big data, artificial intelligence, the internet of things, and 8G are all merging to protect us and reduce uncertainty, catering to the needs of a society with less and less tolerance for individual risks and whose people want to protect themselves against every possible threat. Technology is everywhere, embedded in every aspect of daily life. People wake up, shower, and cook breakfast using multiple smart home appliances, move around using self-driving cars, and exercise and monitor their health with wearable devices.

From office employees to factory workers, everyone uses artificial intelligence at work, which improves efficiency and eliminates the most cumbersome tasks. For leisure, many individuals turn to the metaverse, where they can indulge in dangerous activities (skiing, base jumping, MMA, etc.) in a safe environment. Tech is widely adopted, used, and trusted by most people.

By means of smart contracts regulated by blockchain, people are now protected against most types of hazards and are immediately compensated or refunded whenever anything happens.

In 2030, Sally Maxwell, an entrepreneur from New Zealand, made headlines when she advertised a smartphone that she claimed would end planned obsolescence, by means of a smart contract regulated by blockchain that would entirely refund the owner if his or her smartphone stopped working due to a material issue in under five years. These contracts have become mainstream, not only in the smartphone industry, but wherever planned obsolescence used to be the norm. Consumers are saving money, and the environment can take a breath.

These contracts also work beyond planned obsolescence to cover all kinds of risks. Thanks to a mix of security cameras, algorithmic treatment, and connected devices, the police are more efficient than ever, and violent crime has all but evaporated. With self-driving cars and algorithms constantly monitoring traffic, car accidents have become rare and almost exclusively happen as a result of hacking. When temperatures rise too high in the summer, people are warned automatically about the risks of dehydration and sunstroke and are advised to stay hydrated and in the shade. The same applies whenever an extreme climate event happens, be it a flood, tornado, or wildfire. It has become fairly easy to avoid risk. Provided a person follows the rules, they can very effectively reduce their exposure to danger, and be certain to receive compensation in the event of an accident or issue.

But step out of line and things can get pricy—all the more so because with omnipresent artificial intelligence, it has become virtually impossible to fly under the radar. If you had a car accident and were driving too fast, weren't concentrating, didn't respect traffic regulations, or didn't update your vehicle's software properly, you can wave goodbye to your money. Safety does come at a price. Technology has proven useful to fight crime, but is also being used by a growing number of authoritarian governments to monitor and arrest dissidents.

In healthcare, we are living in the era of wearables and the quantified self, a dream that first appeared and was short-lived in the early 2010s, but which finally took flight many decades later. Everyone is now closely monitored and can enjoy the best targeted treatments whenever something goes wrong—as long as you don't deviate from a strict healthy diet and lifestyle designed for your genome. We've never been so well protected—nor so well monitored.

Why this is plausible: China is already using a combination of AI, big data, and video cameras to monitor street safety, arrest criminals, and even predict crime before it happens.

From the results of the survey, 66% of respondents in Germany disagree that technological advances create more risks than they solve.

2nd scenario:**What if trust came from third parties?**

We're still in 2050, but this time a succession of events has led to technology being an unsuitable way of protecting society against risks. Civilian groups, nonprofits, and regulators have pushed back against technology services that closely monitor individuals, claiming that these pose a threat not only to personal freedom, but also to democracy.

In 2038, a lot of press coverage was given to the story of Hartmut Steiner, a 60-year-old German citizen who successfully sued a hospital which wanted to force him to use a technology to monitor his eating habits if he wanted to continue to receive free treatment for his diabetes. The case was used by many activists as proof of the danger that new technologies represented for personal freedom.

Two years later, to the delight of activists and despite some intense lobbying efforts from the tech industry, the EU adopted the New Data Regulations, an update of the 2018 GDPR, aiming to protect the privacy of European citizens against invasive technologies that could take away their freedom and ability to make their own choices in the name of safety. Many countries, including the U.S., India, and Japan, followed suit.

As a result, rather than putting their trust in technology, individuals rely on public institutions and big corporations to protect them against various threats. This is even more important as risks have become both more intense and wider in their geographical span, particularly with climate change and geopolitical conflicts, while an aging population has also become more risk-averse compared with a few decades ago. Individuals now expect many things, including excellent health coverage, protection against the various climate events that pose a threat to their possessions, and aid during economic downturns that may put them out of work or wipe out their savings.

Faced with various regulations limiting the use of invasive technologies, both governments and private institutions have drastically increased their human workforces to be able to help and monitor everyone that relies on them as they take on the risks of daily life. Further, the state and corporations now work hand in hand to offer citizens the best possible protection against those various risks. Big public/private conglomerates have grown and now control most of the economy, hiring most of

the workforce and offering them good health protection, as well as financial compensation in the event of an accident, illness, or disaster.

As a result, individuals looking for protection turn massively toward these big corporations, where they receive good customer service and can easily be put in touch with a human agent in case of an issue. Despite the unavoidable delays and inefficiencies attached to these large structures, the experience is pleasant, efficient and easy to navigate.

These companies have also benefited from adopting new technologies carefully and conservatively, using the most popular innovations available while setting aside those that raise privacy concerns among the public. Big data and automation to detect extreme weather events and protect against cyberattacks are really popular, for example, while invasive healthcare monitoring technology has received a clear thumbs down.

This model has numerous advantages. As a huge number of workers have been hired to compensate for government-imposed limitations on technology, employment rates are now very low in most developed economies. People continually rate governments and big corporations as some of the most truthful players in public life, and political extremism is at an all-time low as most countries enjoy a stable, democratic form of government.

But not all is rosy—market concentration is hampering innovation. This model also offers little space for dissent, because anyone who, for whatever reason, is excluded from this oligopolistic labor market ends up losing basically any protection they had against life's many and various risks. Some activists are starting to wonder whether, two centuries after Alexis de Tocqueville prophesied the tyranny of the majority, we should have listened to his warning.

Why this is plausible: In September 2022, a UN report warned that people's right to privacy is coming under ever greater pressure from the use of modern networked digital technologies, whose features make them formidable tools for surveillance, control, and oppression. As these technologies become more mainstream, governments may regulate or even possibly ban them. In the meantime, during Covid-19, big companies joined forces with the government to tackle the pandemic, producing medical supplies or deploying digital tools for remote consultation and contact tracing. Such partnerships could happen again in a more sustained way in the future.

From the results of the survey, 45% of respondents trust the role of companies in limiting the consequences of a potential global crisis in the next 12 months.

3rd scenario:

What if trust came from the community?

This time (and yes, this is still 2050), we're not in a high-tech world—quite the opposite. In order to protect natural ecosystems, prevent species from becoming extinct, and limit the negative effects of climate change, society has chosen degrowth, restraint, and simplicity. In 2040, the United States elected its first “green socialist” president, two years after the UN made the ocean a “worldwide public good.” In France, the Sixth Republic made the duty to protect nature part of the Constitution and the economy massively converted to renewables.

While we obviously haven't gone back to the Stone Age, this frugal society makes renewable energy and low-tech top priorities, as well as soft and active mobility. Most individuals now live closer to nature, working on the land while gathering in rural communities or around small and mid-sized agglomerations. They have bonded and formed closed, convivial groups with a strong sense of solidarity. On the other hand, they don't really trust strangers, anonymous big corporations, or the government, which appears more remote than ever. And trust in new technologies is at an all-time low.

While this society cares first and foremost about limiting environmental risks, as well as the threat of global conflict that could have been made both likelier and deadlier by digi-

tal technologies, it also has a higher tolerance for individual risks. Citizens are convinced that danger is inherent to all forms of living, and that it is impossible to eliminate risk without cracking down on civil liberties.

For this reason, individuals also opt for austerity when it comes to protection against risks. They barely use any sort of digital technology for this purpose and prefer to rely on organic help from their family, friends, and community. In this context, some ancestral practices, such as the tontine, are making a surprising comeback. In this society, which places human relations at the forefront, life runs on a smaller scale and disdains gigantic, powerful conglomerates. People would rather put their trust in their neighbors and community when navigating the risks of everyday life.

Communities place particular importance on protecting farmers against unforeseen events and the consequences of climate change. Everyone still remembers the winter of 2036, when an Arctic polar storm hit Western Europe and wreaked havoc on harvests. In France, many farmers lost everything. Now, community cooperatives make sure that individuals can cope with such hardships and get back on their feet quickly.

However, the reach and range of assistance that these small circles of people can provide remain naturally limited, and there are many instances where people simply cannot recover financially after a disaster.

Why this is plausible: To fight against the poor treatment of workers by digital platforms in the industry, several food delivery collectives, such as Khora and Eraman, have recently emerged. They offer better employee benefits and give workers a voice in the company. This model could very well expand to other fields into the future, reshaping the way society organizes itself.

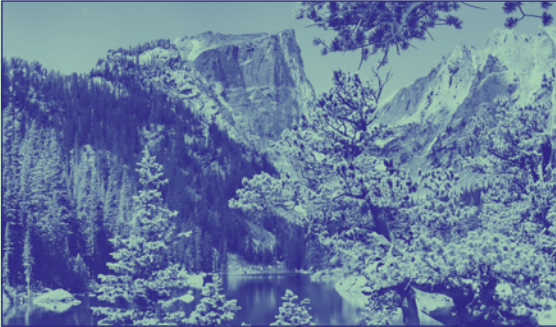
From the results of the survey, 66% of respondents in Nigeria trust the role of private citizens in limiting the consequences of a potential global crisis in the next 12 months.

To fear or not to fear, that is the question

As risks evolve in the future, so will the way society approaches and confronts them. Starting from the findings highlighted in this document, we imagined a few fictional scenes questioning how we'll deal with risks in the decades to come. Jump into our time machine and enjoy the ride!



How a society obsessed with control, safety, and risk mitigation can foster its antithesis.



The most dangerous place

Grand Junction, Colorado, 2051

Dear visitors, I wish you the warmest welcome to Glenwood Park, known everywhere in North America (yes, including in Cleveland) as the most dangerous place! An adventure park of two million acres to camp, hike, and practice all kinds of outdoor activities! I see that as usual, most of today's daredevils are young men, but I'm delighted to see that we also have some young ladies, as well as some guests whose hair is starting to turn gray. Here, as you may already know, there are no digital devices, nor security cameras, no geolocalisation, no wearables: ladies and gentlemen, you are strictly off the grid!

Please don't try to cheat, as this would cost you much. Yesterday, our excellent team once again had to kick out a young chap who tried to get in wearing connected contacts. A pity, knowing that our waiting list is currently—let me double check that—yes, two years and eight months, no less! Here, dear visitors, you're as free as birds. If you feel like hiking alone on our windy trails, full of razor sharp rocks, camping in our forest populated with angry brown bears, or even swimming in the dangerous waters of the Springfield River, please, be my guest—no one will stop you!

Now, of course this is all at your own risk. No one will cover you and the park can't be held responsible if some tragic event were to befall you, dear visitors. Come on, get in, and get ready for the riskiest week of your life in Glenwood Park!

How digital technologies could lead to a new form of totalitarianism in the name of fighting crime.



Big brother is watching you

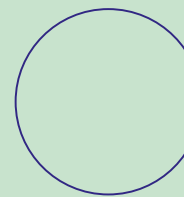
Riyad, 2031

From security cameras to facial recognition and patrol robots, the Saudi government has, over the last few years, massively invested in digital technology—officially to fight criminality, but also to better monitor its population. However, the new technology deployed by the Riyadh police goes one step further.

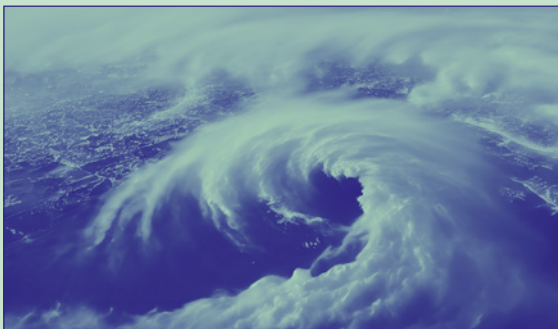
Using quantum data, it will give individuals a harmfulness score. Uttering threats, destroying material in an angry moment, or getting into a fight will decrease one's score, and lead the police to monitor them more closely. If one's score goes under a certain level, one could even be deprived of certain rights, such as receiving welfare, entering a mosque, or working for the government.

Whilst this currently only applies to people who already had issues with the law, human rights associations are claiming that this will soon be used against the population as a whole and will provide the government with a yet another new tool to crack down on dissent.

Arthur Mayer, for the Boston Globe



How climate change will lead international organizations to come up with new tools and solutions to inform the public about weather-related risks.



Stormy weather

**Journal of Marie Dupond
Jakarta, March 7, 2042**

I never liked flying, and this trip was no exception. Coffee was served way too hot and I was sitting near an English man who kept talking about the energy crisis and couldn't understand why it doesn't make headlines more often in France, whilst our media keeps talking about air pollution, which—according to him—is a secondary issue. Quite a character. He's probably changed his mind now: air pollution is, indeed, quite bad here. At least it has helped me cut down on smoking.

The hotel I'm staying at is rather nice, although the food could definitely be better. I'll be here for three weeks, enough time for my team and I to decide whether Jakarta, which has been classified as a "hazardous weather area" since 2038, should now be categorized as a "dangerous weather area." The International Commission for Assessing Climate Risks, which I belong to, evaluates how much a specific geographic zone is threatened by extreme weather events, in order to warn potential visitors regarding the different measures they have to take before and during their visit.

In these conflictual times, climate risks seem to be one of the only things on which every country in the world agrees, hence this commission. There was a typhoon here last month, and a third of the city is still underwater. The electricity has gone off three times already since I've been here. I should remember to mention this to my colleague Raymond, who told me how lucky I was to go for a three week paid vacation in the sunshine...

How cybercrime could exploit high tech weapons to launch new kinds of terrorist attacks.



Star wars

Washington D.C., May 18, 2065

Speech delivered by President Betty Garcia to the U.S. Congress.

Dear members of Congress,

Since the day I took office, I've made protection against cyber attacks a top priority for my administration, knowing very well how the enemies of the U.S., unable to challenge us militarily, are using cyberspace to wreak havoc on our infrastructure. Yesterday, I was unfortunately proven right, as an unidentified group of cyberterrorists managed to take control of our hunter satellite Hamilton, and used it to launch an attack from space on the city of New York.

Fortunately, the shield deployed by the Morris Administration 10 years ago, often nicknamed "Star Wars 2 Initiative," held well and the missiles were all neutralized in space by our counter defense system. The attack thus claimed only one victim, a 98-year-old man living in a retirement community in the Bronx who had a heart attack after being frightened by the explosions.

This tragic death, as well as the much greater disaster that we barely escaped, has only reinforced my determination to fight against cybercrime. My administration will immediately start working on a new bill to significantly bolster our investment in cyberdefense to ensure that this kind of event can't happen again in the future. Together, we can combat the threat of cybercrime. Thank you very much.

The risks of living multiple digital lives as a worker of the future.



Is this real life? **Is this just fantasy?**

Santiago de Chile, 2038

- Good evening, you're on TVN, Chile's first TV channel, this is Martin Rojas and tonight I'm with Doctor Perez. Good evening, Doctor.

- Good evening, señor Rojas.

- You're one of the world's leading researchers when it comes to mental issues and I believe you've come to tell us about a new disorder that you've identified, and that you believe is becoming more and more prevalent among young working adults.

- That's correct. What my team and I have discovered is that, as a record number of young workers are freelancers who often combine two, three, or even sometimes four different part-time, fully remote jobs at a given time, some of them suffer from what appears to be a new kind of multiple personality disorder, which we have named "the dissociative worker's trouble."

- And what does that consist of, exactly?

- Well, it seems like being immersed in several virtual jobs at the same time tends to cut people from the realities of daily life and cause them to seek shelter in the virtual world. Most patients end up spending most of their time in their apartment, neglecting going out to meet friends, eat out, or even buy groceries. With the most severe forms, some patients even confuse reality and the virtual world. They don't know what is real and what is not, which can have severe consequences, such as violent acts against themselves or others.

- That's frightening, indeed. Can the condition be cured?

- There's no silver bullet. For now, we tell our patients to slow down at work and spend more time with their family and friends in the real world. However, we're still early in our exploration of this disorder, and I'm sure we'll come up with new insights and solutions soon.

- Thank you very much for your time, Doctor Perez.

- Thanks for having me, señor Rojas.

Acknowledgements

A special thanks to our external partners and experts for their theoretical input and expertise:

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Design, Artwork, Text Edition & Scenarios

Usbek & Rica, the media that explores the future, chronicles the upheavals of our time, in all fields. With a prospective method, inherited from journalism and humanities, Usbek & Rica seeks to describe the unnoticed present, to detect transformations in the making, and to increase the stock of “thinkable futures.”

For this report, Usbek & Rica explored the major trends and weak signals in our relationship with risk in order to highlight questions and reflections that are being asked in the present and that will serve the future.

About the AXA Foresight Team

Insurance is built on future potential events. Its success is based on understanding and anticipating them through the best possible vision of tomorrow. This is the role of Group Foresight: to help provide a lens into possible futures by identifying emerging trends for the years ahead, allowing us to better navigate uncertain times. Examining long-term transformations and their related challenges allows us to explore the ways in which our societies may be affected in the future and what role insurance might play in a fast-changing world.

The AXA Foresight Team’s work focuses on three main pillars. Its analysis is also supported by the expertise brought by the AXA Research Fund’s community of researchers.

The 2023 Foresight Report is the achievement of the AXA Group Foresight Team:

Olivier Desbiey, Xinyue Zhang, and Margherita Massazza, with great support from our AXA Research Fund colleagues and Marie Bogataj.



Environment & Climate Change



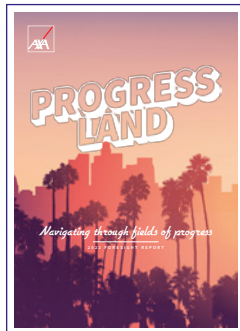
Health



Socio-Economics & Technology

Latest explorations:

Every year, the AXA Group's Foresight publishes its annual exploration report, gathering innovative perspectives and shedding light on the societal transformations relevant to our business. The report contributes to AXA's thought leadership efforts while catalyzing debates with key audiences, such as think tanks, academics, business leaders, and foresight experts.



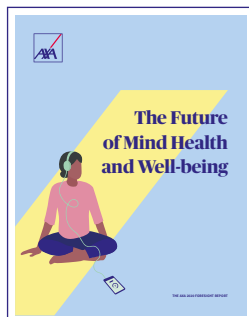
ProgressLand: Navigating through fields of progress

(2022): Through a fictional journey in a four-district territory called “ProgressLand,” this magazine-like publication addresses multiple visions of progress by combining them with major societal shifts such as the future of companies, the environment, social polarization, and mind health & well-being.



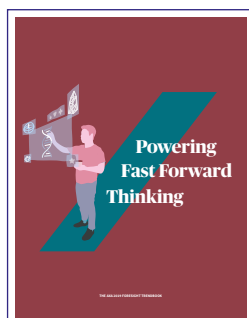
2040 Exploring Society's Future Challenges

(2021): It raises questions on climate change, as well as the growing need for social protection and data-driven health, focusing on their possible outcomes from an insurance perspective.



Future of Mind Health and Well-being

(2020): A pioneering study on one of the major health challenges of the next decade. This report investigates issues of mental health across one's lifespan, understanding if and how technology can support diagnosis and treatment. It seeks to explore the influence of both environmental and socio-economic factors on overall well-being by 2030.



Powering Fast Forward Thinking

(2019): AXA's first foresight report, gathering a compilation of 20 medium-term trends—from “slashers” to “affective computing”—likely to shape society by 2025. This trend book provides a unique overview of signals to be aware of in the insurance industry's key areas.

Methodology

Database

The Future Risks Survey, conducted by IPSOS on behalf of AXA, serves as the database for the Foresight Report 2023. Two groups—experts and the general public—were surveyed online between May 13th and June 9th, 2022. The Foresight Report 2023 leveraged the data of the general public, including 18,999 individuals from 15 countries (Australia, Belgium, China, France, Germany, Hong Kong, Italy, Japan, Mexico, Morocco, Nigeria, Spain, Switzerland, the United Kingdom, and the United States)—4,999 in the United States, and 1,000 across each of the rest of the countries. With countries chosen based on geography and market size, respondents were selected from a sample of adults over the age of 18 to be representative in terms of age, gender, and occupation.

Methods

The data analysis of the report consists of four parts: cross tabulation, correlation test, semi-structured interviews, and comparative analysis.

To begin, all respondents are divided into four groups according to their risk-taking attitudes, which concerns the question “Are you someone who usually takes risks?” Based on the self-reported answers (yes, a lot; yes, a little; not really; not at all), the respondents are respectively categorized into strong risk-taker, moderate risk-taker, moderately risk-averse, and strongly risk-averse. Building on this, we conducted the following quantitative and qualitative analysis to further examine the relationship between risk-taking attitudes and demographic and socioeconomic variables globally and in specific countries.



1- Cross tabulation:

To describe the relationship among various variables, we used cross tabulation analysis to examine how certain social groups perceive risk (see, for example, *The gender of risk*).



3- Semi-structured interview:

For Section 2, based on the results of the data analysis, we conducted five informal semi-structured interviews with experts and scholars specialized in International Relations and Political Science, notably in the five countries examined in this section (France, the U.K., China, Japan, and the U.S.). The objective was to build an academic and comparative framework of how the five countries differ and converge in their perception of certain risks and their underlying relationships with the political and economic system.



2- Correlation test (chi-square test):

The correlation test is used to determine how attitudes to risk correlate with other variables on risk perception and lifestyles (see, for example, *Is risk-taking the key to success?*).



4- Comparative analysis:

Chiefly applied in Section 2, comparative analysis examines how two countries differ in perceiving certain risks. Beyond the descriptive level, the comparative method also touches upon how differences in political and economic structures between two countries influence respondents' attitudes toward those risks.

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