New Humanism in the time of Neurosciences and Artificial Intelligence

BEING HUMAN IN THE TIME OF NEUROSCIENCE AND ARTIFICIAL INTELLIGENCE

Research-action project

Crossed points of view in 9 countries | 1st results

Press Kit

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UCLy LYON CATHOLIC UNIVERSITY | UNITÉ DE RECHERCHE confluence SCIENCES ET HUMANITÉS EA1598

IFCU International Federation of Catholic Universities

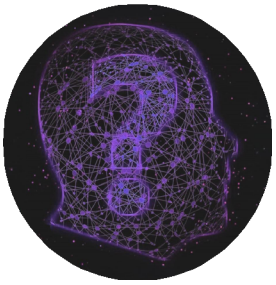
Summary

Everyone's talking about AI... Let's talk about it!

NHNAI, the project at a glance
9 countries engaged in the discussions

Recent developments in artificial intelligence never cease to generate excitement and controversy, between enthusiasm and anxiety. In this unprecedented context for mankind, the ethical stakes are as dizzying as they are decisive, and merit profound collective reflection.

NHNAI is unique in that it creates a dialogue between citizens and a network of experts in 9 countries on 5 continents.



What does it mean to be human in a world where machines are increasingly taking over? This is the question that occupies the international research-action project NHNAI (New Humanism in the time of Neurosciences and Artificial Intelligence), carried out by 27 researchers from 9 countries since 2022.

The purpose? To enrich the exercise of democracy through collective reflection involving a network of academics and society around the issues raised by neuroscience and artificial intelligence.

Favoring an **integral approach** that brings out the various relevant and interesting perspectives, **even if they seem to conflict and create tensions**. Help everyone to become aware of the complexity of the issues and to be better equipped to deal with them.

> **EXAMPLE.** Delegating the care of the elderly to AIs would appear to be an effective solution (notably to compensate for the exhaustion of caregivers or staff shortages). But in practice, this means depriving them of the social and human ties that are essential to their well-being. How can we resolve this kind of paradox?

The idea? To invite every citizen to take part in a wide-ranging debate on major ethical issues. To enable everyone to express themselves, to gather information, to confront different opinions and to freely exercise their critical faculties.

The means? Face-to-face and online discussion workshops, to define the real needs for regulation of these powerful technologies in the light of a shared vision of humanity's future.

13 partners in 9 countries (including 10 universities) are engaged in the debate since 2 years, around **3 sensitive and fundamental themes:**

- **Health**
- **Education**
- **Democracy**

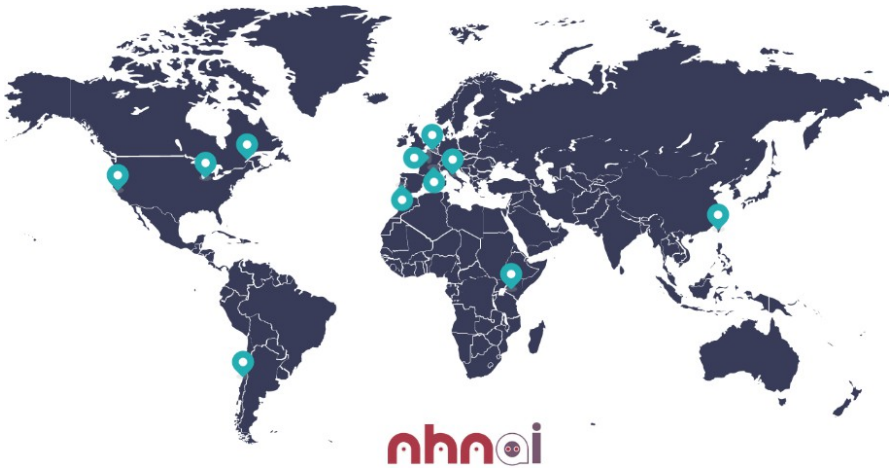
NHNAI network: an international partnership

NHNAI is a research-action project under the aegis of the **International Federation of Catholic Universities (IFCU).**

It is coordinated by **Mathieu Guillermin** (PhD in physics and in philosophy), member of the research unit **"CONFLUENCE : Sciences et Humanités (EA 1598)" of Lyon Catholic University (UCLy).**

NHNAI operates in 9 countries

- Chile
- USA
- Taiwan
- Kenya
- Portugal
- Italia
- Belgium
- France
- Canada (Québec)



NHNAI involves 13 partners worldwide, including 10 Catholic universities, as well as a wide range of international actors from different academic backgrounds: philosophers, ethics specialists, sociologists, theologians, historians, specialists in religions, scientists, anthropologists...

NHNAI ACADEMIC NETWORK

"The question of AI and neuroscience is a major issue for the future of humanity. The debates have already made it possible to bring several continents into dialogue and reveal various points of tension, but also to start building a common understanding of what matters to be authentically human."

Mathieu Guillermin (UCLy), coordinator of NHNAI project.

2022-2026: A 4-year international project

Initiated by academic researchers, the NHNAI project initially involved the university world, before broadening its scope to **include associations, companies and the general public**. The results of this large-scale debate are expected to **serve collective exploration of all the dimensions of an existential question for humanity**, to engage public authorities and economic players, and to gather valuable food for thought for research.

January - December 2022:

- Upstream work by researchers in consultation with extra-academic contacts and representatives of the various stakeholders to identify key themes, objectives and methods.

June 2022 - April 2024:

- Facilitation of face-to-face workshops in 9 countries.
- Upload of multilingual contributions on the CartoDEBAT platform in open access, communication and online continuation of discussions.

February 2023 - August 2025:

- Collection and synthesis of results by theme (education, health, democracy) and analysis of country specificities.
- The results of international discussions and points of tension requiring further study are made available to (academic and extra-academic) stakeholders.

September 2024 - 2026:

- International conference in Rome from September 2-5, 2024 to explore the question of freedom at the test of AI and neuroscience, with contributions from around sixty researchers.[1]
- Continuation of the 1st phase debates, with an enlargement of the network to include all members of society: associations, economic players, the general public...

1 https://www.youtube.com/playlist?list=PL1icHN83Y0GKfvNcbJF9HUj55iYfoSjZv

States of mind and states of soul
Debates on AI, what for?

Never before has technology had such an impact on the very concept of the human being and its values. At a time when AI innovations are accelerating, it seems both legitimate and urgent to take time for reflection. The NHNAI project's ambition is precisely to strengthen the capacity for ethical orientation, through reflection and collective intelligence, on what it means to "be human in the age of AI". Exchanges and contributions gradually bring out areas of tension on the various subjects, and enable us to work towards shared recognition of the complexities thus brought to light.

The AI and us

This is the fundamental question: **what does it mean to "be human" in the age of AI?** The NHNAI project aims to make progress on this pressing topic of our common future. Reflecting on the ethical stakes of AI and its consequences, raising the question of regulation, governance and limits - these are societal choices that commit us all.

A REAL-LIFE DEMOCRATIC EXERCISE

The NHNAI project is designed to generate engagement. It encourages experts and citizens from around the world to share their views on a crucial issue. In an age marked by growing individualism, **the practice of debate, both face-to-face and online, recreates bonds, while strengthening individual and collective reflection skills.**

DISCUSS, EXCHANGE, ARGUE, DEBATE... EVEN DISAGREEMENT MAKES US MOVE FORWARD!

In the workshops organized by the NHNAI network, whether face-to-face or on the online platform, the aim is above all to open up the possibility of authentic exchange and to accept confrontation with the opinions of others.

In-depth reflection shows that it's sometimes very difficult to come up with a simple, universal answer to a problem that turns out to be more complex than first thought. It's impossible to give a simple true / false or for / against answer. **Agreeing upon a disagreement is then more constructive: it's a matter of recognizing together that certain subjects contain ideas in tension, i.e. contradictory ideas, without any of them being wrong.** In this case, several truths need to coexist, and priorities need to be defined. How can we allow constructive disagreement on priorities without first establishing agreement on all legitimate ideas and options?

NURTURE RESEARCH AND BENEFIT FROM ITS CONTRIBUTIONS

With the synthesis of international contributions currently underway, the various fields of expertise in academic research have a valuable resource to work with in real time. This enables them to reflect on the complex issues raised by the debate on AI, and to contribute their insights to the collective reflection.

ENGAGE POLICY- AND DECISION-MAKERS

The outcome of the discussions reinforces the idea that AI needs to be regulated in a way that puts people at its heart. This regulation is the responsibility of policy-makers. But we still need to clarify this notion of the human being that we want to put at the center: here again, the contributions of the participants constitute a relevant resource on an international scale, in order to collectively build landmarks, milestones and limits for a development and use of AI that preserves the place of the human being.

Key figures

- **13 partners.**
- **70 academic actors.**
- **About 2 000 participants all around the world:** citizens, stakeholders, students…
- **More than 70 non-profit institutions and organizations connected with excluded or vulnerable persons.**
- **About 3 400 online contributions** (in November 2024), either restituted by facilitators after exchanges during face-to-face workshops, or produced directly online.
- In the 9 participating countries, syntheses of discussions on **the 3 fundamental themes: education, health, democracy.**
- **4 global syntheses:** one per theme and a transversal one.

And now?
Everyone can join in!

2024 - 2026 – NHNAI project's 2nd phase

After having organized the 1st wave discussions, the NHNAI network actors produced global and local summaries of these discussions, which also identify points of tension and complexities.

- Syntheses are available on NHNAI project's website.[2]

NHNAI's network of experts strives to enrich these summaries by bringing insights into the points of complexity.

- Online debates inviting to continue reflections and enrich exchanges around complexities are open to all on the CartoDEBAT platform.[3]

2 https://nhnai.org/2023-results/

3 https://cartodebat.org/nhnai/topic/international-discussions

Debates & Results

The debates in the first phase of the NHNAI project were rich and brought out a series of strong ideas around the question "What does it mean to be human in the age of AI and neuroscience?"

These strong ideas manifest a tension between:

- **The affirmation of AI's many positive contributions**
  - *"We can improve our lives with technology."*
  - *"It is legitimate to aspire to self-improvement, to seek for enhanced performance and efficiency".*

- **The risk of losing the sense of the human, of no longer recognizing its depth and thickness**
  - Respecting people's singularity.
  - Preserving human autonomy.
  - Fostering human flourishing.
  - Preserving human relationships.
  - Preserving human responsibility.

Reflecting on this tension, a number of important ideas emerged that need to be taken into account.

- **Points of attention expressed by participants to appropriately respond to this tension**
  - Fighting inequality
  - Promoting human-IA cooperation
  - Regulating despite challenges
  - Protecting privacy
  - Encouraging critical thinking

Interdependent perspectives on AI

NHNAI paves the way for **mutual cultural enrichment** that goes beyond quarrels of opinion towards a shared recognition and joint exploration of the complexity of these subjects. So, it's not primarily a question of pointing out international oppositions between ways of thinking, but rather of showing that differences between countries broaden and enrich the debate.

This collective new awareness enables us to create and explore a common ground of shared issues.

After all, one country's problems are often those of many others.

Kenya, for example, has brought to light a specific tension. AI has a positive impact (drones, translation, help for the most vulnerable...), it's a booster for economic development. But the country has little sovereign digital infrastructure, and therefore risks losing control over its data and failing to develop its own technological capabilities. There is therefore a risk of technological dependence, which in certain respects can be assimilated to a new form of colonization (technocolonialism or digital colonialism), with a possible drain on the economic benefits linked to AI.

Emerging issues by theme

For both the first and second phases, debates are organized around the following themes: **Humanity and AI** (cross-cutting theme), **Democracy**, **Health**, **Education**.

Within each theme, the discussions were marked by points of tension, revealing the complexity underlying the issues at stake. It is precisely on these points of tension that we need to stop and reflect together, soliciting the contribution of experts to enlighten the exchanges and deepen the shared understanding.

In the appendix, you'll find leaflets presenting, by theme, the key questions emerging from these discussions, the strong ideas in tension evoked by the participants, and the contribution from research:

- **Sheet 1 - Humanity and AI. Living with AI? How should we relate to machines?**

- **Sheet 2 - Democracy. How to use data and AI in public services and the management of collective life without creating a discriminatory and destructive system for humanity?**

- **Sheet 3 - Where is the line between care, legitimate improvement and dehumanization?**

- **Sheet 4 - Education. How can we make quality education more accessible with AI, without sacrificing social cohesion and community life?**

Work in progress! The network of researchers was asked to work on the syntheses of the first wave in order to shed light on points of complexity based on the discussions. But anyone is also invited to learn about, react to and enrich these complexities on the CartoDEBAT platform.[4]

Learn more on NHNAI project:
www.nhnai.org

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4 https://cartodebat.org/nhnai/topic/international-discussions

HUMANITY and AI

LIVING WITH AI? HOW SHOULD WE RELATE TO MACHINES?

AFFECTIVE CONNECTIONS WITH MACHINES

Some participants point out that, with the progress of AI, we will tend to develop machines (robots, conversational automatons) **capable of imitating or simulating behaviors and capacities specific to humans and living beings, such as empathy, assertiveness, emotional and affective life**. As a result, it will become increasingly tempting to **become emotionally attached to this type of machine** capable of simulating relational capacities (such as companions or artificial assistants, or robots for personal care).

CAN MACHINES HAVE RIGHTS?

These discussions also raise **the question of the rights** to be granted to advanced robots or intelligent systems. At the same time, many contributions to the discussions emphasize the importance of not losing sight of **the specificity of the living and the human in relation to machines**. Machines are not conscious, do not feel emotions, cannot be wise, creative, critical or autonomous, are not capable of spirituality in the usual sense of these terms, which implies rootedness in lived experience, in a biological body. At best, they can simulate convincing behaviors in these registers (notably through conversation), behaviors that human beings or living beings would have in given circumstances.

From this point of view, many participants agree that AI cannot be a subject of law. The question is widely described as speculative or science-fictional, without being uninteresting.

Thus, it is quite widely expressed in the discussions that it is necessary to resist the (increasingly real and powerful) temptation to perceive certain robots or AI systems as genuine people and to try to connect with them affectively (as one would with a human, or even with another living being). **We must resist the temptation to substitute interactions with machines for genuine human relationships.**

Sources: Ideas outcoming from syntheses and debates

- AI systems and machines cannot be confused with humans and therefore cannot be endowed with rights similar to those of humans
  - "Preserving the specificity of human beings (compared to machines)," an idea from the global synthesis on Democracy (reflecting 7 ideas expressed in 2 countries – France, Portugal)
  - 3 supplementary ideas expressed in France's discussions on Democracy ("Undesirable: The recognition of a legal personality for AIs is not desirable," "Desirable: Algorithms remain tools," "The complex question of the legal status of artificial intelligence is widely debated")
  - 1 supplementary idea expressed in USA's discussions on Democracy ("Machines are to serve humanity, therefore humanity must maintain appropriate control of AI")

- AI systems should not replace human relationships
  - "Preserving empathy, human contact and relationships," an idea from the global synthesis on Democracy (reflecting 4 ideas expressed in 2 countries – Chile, Portugal)
  - "Still having relationships and physical interactions with other humans," an idea from the global synthesis on Education (reflecting 11 ideas expressed in 6 countries – Belgium, Canada, France, Portugal, Taiwan, USA)
  - "Maintaining empathy and human relationship at the core of healthcare," an idea from the global synthesis on Health (reflecting 17 ideas expressed in 7 countries – Belgium, Chile, France, Kenya, Portugal, Taiwan, USA)
- AI systems will increasingly have behaviors that enable / encourage the tendency of humans to want to connect with and attach to them
  - 2 ideas expressed in Portugal's discussions on Democracy ("Humans and machines may bond," "Artificial intelligence will tend to mimic human abilities")

INSIGHTS FROM RESEARCH ON THE QUESTION OF RELATIONSHIPS WITH AI

by Dr. Mathieu Guillermin, UCLy, NHNAI network's coordinator

Fascinating AIs

However marvelous recent developments in artificial intelligence technologies (such as large language models like Chat-GPT) may be, they have nothing to do with the creation of new life forms, and AIs are not new intelligent beings. The real accomplishment lies in humanity's ability to build them.

AIs are still machines

No matter how convincing it is, no matter how credibly it simulates human emotions and relationships, what we conveniently refer to as "AI" is still a computer program, albeit a very advanced one, but one that specifies what a computer will do with the data (nothing new there). Nothing to do with the creation of new beings endowed with lived experience. Computers are fantastic machines capable of mechanically and automatically manipulating countless configurations of bits of matter (magnets, transistors...), with incredible efficiency and precision.

They look just like humans

It is important to distinguish between the simulation of a behavior and the actual lived experience of that same behavior. For example, a machine can express to an elderly person words of compassion about the prospect of the end of life. This cannot be confused with the same words uttered by a person capable of experiencing their finitude, feeling and sympathizing in a shared lived experience.

What kind of status for IAs?

However, AIs cannot be treated solely as pure tools. Artificial companions remain objects, designed to resemble a genuine person; it is their vocation to manifest an appearance of humanity. But becoming accustomed to this dual "object + human" characteristic can, over time, lead to destructive behavioral drifts in classic human-to-human relationships: the risk of becoming accustomed to a form of slavery and exploitation of the other, considered as an object. Without going so far as to make them subjects of law, it would therefore be advisable to regulate our relationship with "intelligent" machines, with a view to preventing the development of these extremely toxic behaviors or habits for human beings and other living beings.

- **Find out more:** a detailed version of this sheet can be found on the project website.[1]

1 https://nhnai.org/focus-on-nexuses-of-complexity-transversal/

DEMOCRACY

HOW TO USE DATA AND AI IN PUBLIC SERVICES AND THE MANAGEMENT OF COLLECTIVE LIFE?

AI'S BENEFITS

The content of the discussions shows that many participants recognize **the interest of AI technologies in increasing the efficiency of public services by making them more accessible** (through digitization) **and more efficient** (thanks to the automation of certain tasks, e.g. administrative).

AI also seems to be seen as an interesting way of **facilitating living together by reinforcing personal safety** (video surveillance, but also to cope with climate change, resource scarcity or other natural disasters) or **facilitating political decision-making** (data analysis to better understand the currents within public opinion).

THE RISK OF DOMINATION BY ALGORITHMS

Nevertheless, many participants also point to the importance of **not pushing humans into the background**, and of subjecting people entirely to algorithms. There was a lot of discussion about the importance of leaving algorithms in their place, as tools to serve and cooperate with humans (but not to replace them entirely). It is crucial to preserve (or even increase) empathy and relationships between humans.

THE EMERGENCE OF NEW FORMS OF DISCRIMINATION

The automation and digitization of public services is not necessarily, in itself, beneficial for everyone. Some populations may find it difficult to access digital tools, and **algorithms may contain biases and automate certain forms of discrimination**. It is therefore important that decision-making (at political or public service level) remains under human control.

Automation and the use of data in the conduct of public affairs can therefore be a source of great progress, **but must not be to the detriment of humans (or certain more vulnerable groups)**.

Sources: Ideas outcoming from syntheses and debates

- AI for people's safety and security
  - "Using AI to ensure safety and security," an idea from the global synthesis on Democracy (reflecting 2 ideas expressed in 2 countries – Canada, Kenya)
- AI and digital technologies can improve public services and democratic processes, but only if used correctly
  - "Privileging AI cooperation and support instead of human replacement," an idea from the global synthesis on Democracy (reflecting 7 ideas expressed in 5 countries – Italia, Kenya, Portugal, Taiwan, USA)
  - "Acknowledging the positive (potential) impact of AI on human life while asking the right questions," an idea from the global synthesis on Democracy (reflecting 6 ideas expressed in 4 countries – Belgium, France, Kenya, Portugal)

- Human relationships must remain at the center
  - "Preserving empathy, human contact and relationships," an idea from the global synthesis on Democracy (reflecting 4 ideas expressed in 2 countries – Chile, Portugal)
- Decision-making must remain under human control
  - "Acknowledging the positive (potential) impact of AI on human life while asking the right questions," an idea from the global synthesis on Democracy (reflecting 6 ideas expressed in 4 countries – Belgium, Canada, France, Italia)
- Digital and AI must not leave certain groups (especially the most vulnerable) on the sidelines. There is a risk of automating bias and discrimination
  - "Taking into account vulnerable people and contributing to human rights, social and political inclusion," an idea from the global synthesis on Democracy (reflecting 17 ideas expressed in 5 countries – Belgium, France, Italia, Kenya, Portugal)
- Right to not being reduced to one's data
  - "Recognizing that human persons exceed the sole measurable dimensions" an idea from the global synthesis on Democracy (reflecting 2 ideas expressed in 2 countries – Canada, Portugal)

INSIGHTS FROM RESEARCH ON AI & DEMOCRACY

by Dr. Mathieu Guillermin, UCLy, NHNAI network's coordinator

A human being cannot be reduced to a set of data

The intelligent use of data and the refusal to reduce human persons to a set of data is one of the strong points of Pope Francis' position on AI.

> *Fundamental respect for human dignity means refusing to allow the uniqueness of the person to be identified by a set of data. Algorithms must not be allowed (…) to eliminate the possibility of an individual changing and leaving behind the past*
> Message of his Holiness Pope Francis for the 57th World Day of Peace, 1st January 2024

The illusion of objectivity of algorithms

With this in mind, we must collectively acquire a realistic vision of digital technology. The idea that algorithms are based on logical and mathematical procedures that guarantee objectivity and rationality, having eliminated all subjective bias and all forms of discrimination, is relatively valid in conventional programming, but becomes more than questionable when resorting to programming assisted by machine learning techniques. For example, an AI trained on initially biased data with sexist or racial discrimination, or with no representation of minorities, will reproduce the biases.

Intelligence is inseparable from lived experience

To be intelligent or rational is to be able to apply criteria, procedures or algorithms objectively or neutrally, but it is also, and perhaps above all, to be able to fallibly judge and arbitrate, to sometimes make mistakes, to correct oneself, to evolve... To be intelligent in this sense is something fundamentally alive, rooted in lived experience. Purely algorithmic intelligence, like that of a machine, is an illusion. The better question would be: how can the machine help us to be smarter, to deepen the life experiences that make us wiser and more experienced?

- **Find out more:** a detailed version of this sheet can be found on the project website.[1]

1 https://nhnai.org/focus-on-nexuses-of-complexity-democracy/

HEALTH

WHERE IS THE LINE BETWEEN CARE, LEGITIMATE IMPROVEMENT AND DEHUMANIZATION?

AUGMENTED HUMANS…

Some participants in the discussions pointed out that it is in the nature of humans to constantly seek to progress and improve. Advances in AI and neuroscience in the healthcare field may enable us to **increase our physical and mental capacities** (notably with neurological prostheses or implanted brain-machine interfaces). These technologies could also **prevent the loss of capacity associated with aging**. Similar practices (with hip or articular prostheses) are already widely accepted in society.

… HOW FAR?

We can therefore imagine that more recent possibilities linked to AI and neuroscience (such as brain implants) could also eventually become acceptable.

Nevertheless, the discussions also reveal a concern about the motivations and significance of such augmentation practices. **While it seems acceptable to many participants to use health technologies in a curative context (to combat disabilities or degenerative diseases)**, practices aimed at unlimited increases in longevity or brain capacity, or even military applications, are viewed with more caution, and are even often criticized.

PRESERVING OUR HUMAN VULNERABILITIES

There seems to be a great risk of responding to extreme fatigue or a feeling of weariness with technological solutions (drugs, implants) capable of increasing resistance, without taking into account **the deeper meaning of these warning signals in a person's life**. Not to mention the potential dependence on this type of technology. Some people reject the idea of a systematic desire to surpass limits, which could threaten humanity itself. **Our vulnerabilities (suffering, being mortal) are at the heart of what it means to be human.**

Sources: Ideas outcoming from syntheses and debates

- It's human nature to constantly strive for progress and improvement
  - 1 idea expressed in Portugal's discussions on Health ("Constantly seeking for self-improvement and progress")
- Possibilities for increasing our physical and mental capacities, preventing the loss of abilities associated with aging. Practices that could become acceptable (since it extends uses already existing with other forms of prostheses).
  - "Exploring the potential contributions of health technologies to humans' self-improvement," an idea from the global synthesis on Health (reflecting 2 ideas expressed in 2 countries – France, Portugal)
- Certain limits and vulnerabilities are at the heart of what it means to be human. Some limits carry meaning and teaching for people.
  - "Acknowledging some of our limitations and vulnerabilities as inherent to our human nature," an idea from the global synthesis on Democracy (reflecting 2 ideas expressed in 2 countries – France, Portugal)

- Risks of dependence to technology and of deskilling
  - 1 idea expressed in France's discussions on Health ("The debate about increasing human capacity through technology raises profound concerns")
- Risk of excessive focus on performance, efficiency and productivity, with only measurable and quantifiable aspects taken into account
  - "Withstanding the overvaluation of performance, efficiency or productivity," an idea from the global synthesis on Democracy (reflecting 4 ideas expressed in 4 countries – Chile, France, Portugal, USA)
- Legitimacy of the fight against vulnerabilities in a medical context (particularly against handicaps and degenerative diseases), but caution towards, or even criticism of, a quest for unlimited increases in longevity or brain capacity, as well as of military applications
  - 3 supplementary ideas expressed in France's discussions on Health ("The subject of human enhancement raises complex ethical considerations," "The debate on the integration of cyborgs into society raises ethical, legal and philosophical questions," "Undesirable: Some enhancement abilities are desirable")

INSIGHTS FROM RESEARCH ON AI & HEALTH

Contrary to a fantasized vision of a human being freed from his weaknesses by technology, our various vulnerabilities are so many opportunities for encounters and relationships.

David Doat, associate professor of philosophy at the Université Catholique de Lille, member of the NHNAI network and holder of the Chair ETH+ Ethics, Technology and the Humanities, underlines the real stakes of vulnerabilities of all kinds - social, cultural, economic and health-related - that are part of our human condition: "We are all vulnerable from an anthropological point of view". For him, these diverse vulnerabilities can be positively overcome: they are opportunities to transform.

- **Find out more:** a detailed version of this sheet can be found on the project website.[1]

1 https://nhnai.org/focus-on-nexuses-of-complexity-health/

EDUCATION

HOW CAN WE MAKE QUALITY EDUCATION MORE ACCESSIBLE WITH AI, WITHOUT SACRIFICING SOCIAL COHESION AND COMMUNITY LIFE?

MORE INCLUSIVITY THANKS TO AI

The participants highlighted **the benefits that AI can bring to education**. Starting with digitization, which **makes online teaching materials accessible to anyone**, facilitating instruction outside class hours, enabling pupils and students to extend subjects seen in class, and making it easier to catch up on lessons when absent, thanks to online school platforms.

AI presents itself as a virtual assistant that can help with language learning. AI-assisted language learning is becoming more accessible thanks to translation systems, which are now indispensable for people with language difficulties or for the deaf or hard-of-hearing, as mentioned in Kenya and France. And as language learning partly requires oral practice, conversational robots are sometimes more effective than language books. This is exactly what chatbots like ChatGPT can be used for. Used wisely, **they can be a formidable pedagogical tool, a necessary aid to learning and complementary to the teacher.**

PERSONALIZED PATHWAYS

In addition, **the complementary nature of AI and the teacher** was emphasized several times in the discussions, and this is illustrated in particular in the personalization of learning. **AI makes it possible to personalize learning paths according to each student's pace, level and ability**. As it is physically and cognitively impossible for the teacher to take into account the specificities of each student, AI enables him or her to have an overall view and to identify students in difficulty who are in greater need of support.

BUT A LOSS IN ENGAGEMENT

But participants also recognize that AI's contribution to education (more inclusion, more access…) very often comes **at the expense of physical interaction and human contact**, and this concern was almost unanimous in the discussions. The availability of online learning materials can also have **the negative effect of encouraging students to invest less time in classroom activities**, or even prompting some to drop out and home-school, given that everything is now available online, and within everyone's reach. In Portugal and other countries, there is also a risk evoked that younger people, having become accustomed to this new format of online relationships, will become content with these virtual contacts and underestimate their relational, emotional and physical needs, to the point of becoming distant and cold in contact with others. According to one participant, we can't do without real face-to-face interactions when it comes to learning "how to be, how to know and how to act."

ENCOUNTERING THE OTHER

But beyond this learning, **it's also in face-to-face interactions that empathy, emotion, mutual and reciprocal understanding - in short, the encounter with the other - come into play**. And, as one participant in Canada pointed out, it is sometimes the presence of a teacher and **the transmission of his or her passion and emotions** that play an important role in the learner's motivation and attention, and therefore in his or her learning. So school is not just a place for learning, **but also a place for sharing, meeting new people, and learning to live together, to help society flourish**.

Through face-to-face interaction, we confront each other, learn social codes and pass on values. Digitalized education, or education that takes place too much behind screens, can ultimately run the risk of reinforcing individualism and egoism, which would be a major brake on living together and a threat to social cohesion.

Sources: Ideas outcoming from syntheses and debates

- Using AI to foster social inclusion: personalizing learning, translation services, online debate spaces…
  - "Fostering social inclusion thanks to AI technologies," an idea from the global synthesis on Education (reflecting 10 ideas expressed in 6 countries - Belgium, Canada, Chile, France, Kenya, Taiwan)
- AI to increase performance and efficiency in problem/task solving
  - "Using AI to improve performance and innovation," an idea from the global synthesis on Education (reflecting 5 ideas expressed in 4 countries - Belgium, Chile, France, Portugal, Taiwan)
- AI to improve teaching and learning
  - "Using AI and NS to better teach and learn," an idea from the global synthesis on Education (reflecting8ideas expressed in 6 countries - Belgium, Canada, France, Kenya, Portugal, Taiwan)
- Importance of genuine human relationships and contact for education and human development
  - "Still having relationships and physical interactions with other humans," an idea from the global synthesis on Education (reflecting 11 ideas expressed in 6 countries - Belgium, Canada, France, Portugal, Taiwan, USA)
- Danger of replacing human contact with technology - prefer complementarity
  - "Not replacing human and human's interactions by AI technologies," an idea from the global synthesis on Education (reflecting 7 ideas expressed in 6 countries - Belgium, Canada, France, Kenya, Portugal, USA)

INSIGHTS FROM RESEARCH ON AI & EDUCATION

by Laura Di Rollo, UCLy, member of NHNAI network

Trusting technology more than humans?

What the participants in the discussions are expressing is a paradox that Sherry Turkle illustrates through the title of her book "Alone together" (2015), with the concern that young people are no longer investing in human relationships, and that more is expected of technologies than of humans. For digital natives, the first reflex is to turn to technology when faced with a problem, even if calling on other humans would have been more effective. The other is no longer an option. By working so closely with machines, humans find themselves alone in their dealings with them.

Considering humans as objects

At a deeper level, digital technologies are orienting our way of being in the world towards a mode of being connected to machines, and therefore to objects. There's a risk that we'll end up treating each other more and more like objects, in other words, in an expeditious way (as we do with our e-mails), totally eclipsing the authenticity of human relationships.

Relationships with others are fundamental to humanity

In the age of artificial intelligence and our ultra-connected lives, it seems necessary to strike a balance so as to benefit from what AI can bring us, while preserving those precious human relationships that largely define our humanity, notably through face-to-face contact: voice, face, gaze.

So, we might also ask whether the danger threatening humanity is not precisely indifference to others, and with it, the loss of concern for humanity.

- **Find out more:** a detailed version of this sheet can be found on the project website.[1]

1 https://nhnai.org/focus-on-nexuses-of-complexity-education//