Global synthesis of 1st wave discussions

Global-Democracy analysis

In 2023, discussions on what it means to be human in the time of neuroscience (NS) and AI have been facilitated by NHNAI partners in 9 different countries. In each country, 3 lines of discussions have been opened to explore this question in the **3 thematic fields of education, health, and democracy**. Each partner then produced 3 **local syntheses** reporting on the content of discussions in these 3 fields in the corresponding countries.[1] On this ground, the coordination team proposed 3 **global thematic syntheses** (one per field explored, education, health and democracy). Finally, ideas of these 3 global thematic syntheses have been grouped to generate one **global-transversal synthesis**, gathering ideas that were more general and have been expressed in different thematic field.

This document presents **ideas of the global-Democracy synthesis**, together with nexuses in which some ideas emerging from discussions enter in conflict and tension, manifesting possible complexities and delicate points of questions related to the topic of health.

[1] For an exact total of 8*3 + 2 local syntheses. In Canada (Québec), Cégep Sainte-Foy organized discussions focused on Democracy and Education, but not on Health.

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Part 1: Global-Democracy ideas

Being human in the time of NS and AI means …

Preserving the specificity of human beings (compared to machines)

Certain values and features are unique to human beings, as spirituality, wisdom, emotionality, creativity, autonomy, critical thinking, imagination, consciousness, empathy… Unlike machines, Humans, who have a palpable experience of the world through their bodies, are also endowed with the ability to manage uncertainty.

Corresponding ideas from local thematic syntheses:

2 countries (FR, PT) 7 ideas

- (France – Democracy) Participants express worries about the prospect of being able to create a duplicate or an improved version of themselves
- (Portugal – Democracy) The ability to manage unpredictability is exclusive to humans
- (Portugal – Democracy) Humans' approach to tasks is unique
- (Portugal – Democracy) Having a body is integral to the human experience
- (Portugal – Democracy) Artificial intelligence will tend to mimic human abilities
- (Portugal – Democracy) Values are essential to humans' decision-making
- (Portugal – Democracy) Humans do not always act in accordance with their values

Preserving empathy, human contact and relationships

Humans are social beings who can only flourish in relationship with their fellow human beings. Unlike machines, they have the indispensable social ability to put themselves in other people's shoes and form strong emotional bonds (importance of feeling and dialogue to do so). AI is not able to replace human interaction, especially in fields like political decision-making. Trust and representativeness are built through human dialogue.

Involvement in nexuses of complexity (see below Part 2: Global-Democracy nexuses of complexities):

- AI and digital technologies for public services and democratic life
- AI at the service of human collective intelligence

Corresponding ideas from local thematic syntheses:

2 countries (CH, PT) 4 ideas

- (Chile – Democracy) Humanization of Politics and democracy
- (Portugal – Democracy) Interpersonal relationships are essential to humans
- (Portugal – Democracy) Interpersonal attachment is exclusive to humans
- (Portugal – Democracy) Human fulfillment comes from performing different social roles

Preserving human responsibility on ethical choices/decision-making

Only human beings, thanks to their awareness and critical thinking, are able to make ethical choices and responsible decision-making. Humans are therefore the only ones responsible for

technological orientations and the consequences of AI uses. This human responsibility is ethical, legal and political and must not be delegated to machines.

Involvement in nexuses of complexity (see below Part 2: Global-Democracy nexuses of complexities):

- AI and digital technologies for public services and democratic life
- AI at the service of human collective intelligence

Corresponding ideas from local thematic syntheses:

4 countries (BE, CA, FR, IT) 7 ideas

- (Belgium – Democracy) Technology without ethical responsibility is detrimental
- (Canada – Democracy) Desirable: A human must be kept in the loop
- (France – Democracy) The complex question of the legal status of artificial intelligence is widely debated
- (France – Democracy) Undesirable: The recognition of a legal personality for AIs is not desirable
- (France – Democracy) Reflection on the use of algorithms emphasizes that it's the human application compromising our critical sense, rather than the algorithms themselves
- (France – Democracy) Desirable: Algorithms remain tools
- (Italia– Democracy) AI and Ethical Decision-Making

Recognizing that human persons exceed the sole measurable dimensions

Although one can get a lot of information of someone else through objective and empirical observation (e.g. with video surveillance or lie detection technologies), the latter does not exhaust what a human person is and what can be meaningfully said about her.

Involvement in nexuses of complexity (see below Part 2: Global-Democracy nexuses of complexities):

- AI and digital technologies for public services and democratic life
- Ensuring safety and security without undermining fundamental rights

Corresponding ideas from local thematic syntheses:

2 countries (CA, PT) 2 ideas

- (Canada – Democracy) Taking care of not reducing persons to their actions
- (Portugal – Democracy) Desirable: Neuroimaging should not be used for lie detection

Finding the right balance between human labor and AI task automation

AI may deeply transform the manner humans work. It may lead to mass unemployment, especially among the most vulnerable persons. Such major economic shifts have the potential to deeply affect democracy.

Involvement in nexuses of complexity (see below Part 2: Global-Democracy nexuses of complexities):

- AI and work automation

Corresponding ideas from local thematic syntheses:

3 countries (IT, KE, USA) 3 ideas

- (Italia – Democracy) AI's impact on Employment and Society
- (Kenya – Democracy) Undesirable: Automation of tasks or process
- (USA – Democracy) The economic conditions created by AI with respect to work and human purpose will influence democracy

Preventing AI from undermining humans' critical thinking, decision-making abilities, and collective intelligence

AI becomes pervasive and sometimes indispensable in many aspects of our lives, especially to editorialize information and contents available on internet and social networks. Fairness, transparency and absence of biases thus become key. Biased and/or unfair algorithms may automatically and silently propagate discriminations, create information or cognitive bubbles isolating individuals in uniform informational landscapes. (Generative) AI can facilitate and foster the production and dissemination of (deep) fake news.

In sum, AI can damage our ability to find accurate, trusted and sourced **information**, introducing **mistrust** among uninformed citizens, compromising good democratic choices and pluralism. To avoid such a compromission of the democratic process, it is therefore of primary importance to protect humans' critical thinking, decision-making abilities, and collective intelligence (by ensuring fair and unbiased AI algorithms as well as by putting AI at play to reinforce democratic processes).

Involvement in nexuses of complexity (see below Part 2: Global-Democracy nexuses of complexities):

- AI and digital technologies for public services and democratic life
- AI at the service of human collective intelligence

Corresponding ideas from local thematic syntheses:

7 countries (CH, FR, IT, KE, PT, TW, USA) 18 ideas

- (Chile – Democracy) Impact of AI in democracy
- (Chile – Democracy) Challenges of Truthfulness and Information Manipulation
- (Chile – Democracy) Value of traditional voting
- (France – Democracy) AI and social media underscore the need to make recommendation algorithms more transparent to foster critical thinking
- (France – Democracy) Desirable: Transparency of recommendation algorithms
- (Italia – Democracy) Fair and Non-biased AI
- (Italia – Democracy) Ethical Boundaries in Neuroscience-AI Integration
- (Kenya – Democracy) Desirable: Transparency in decision making, processes and governance
- (Portugal – Democracy) Undesirable: Humans may become unable to establish the reliability of a given information
- (Portugal – Democracy) Undesirable: Humans may cease to be exposed to (and grow with) pluralism
- (Portugal – Democracy) Undesirable: Access to personal data may threaten the common good
- (Portugal – Democracy) Desirable: Artificial intelligence may compensate humans' limitations
- (Taiwan – Democracy) AI can shape human mind
- (USA – Democracy) AI, particularly generative AI, will influence democracy and democratic debate
- (USA – Democracy) AI, the information environment, and democracy
- (USA – Democracy) AI puts at risk trust in government
- (USA – Democracy) Undesirable: AI damaging democracy
- (USA – Democracy) Undesirable: Media sensationalism and extremes regarding AI

Privileging AI cooperation and support instead of human replacement

AI and technology should contribute to a more humanized society. AI can be a useful tool to help humans save time on certain tasks. For example, fake news and deepfakes will be increasingly common and humans will have increasing difficulty in fact-checking. Artificial intelligence may be a helpful tool for distinguishing between reliable and unreliable sources. But machines should not replace humans. So democracy is one aspect of society that could be assisted by AI, by providing more accurate information to voters, tallying public opinion in more detail, improving human cognitive capacities and reducing human cognitive limits thus helping human agency and choice, etc. If this works, it may improve trust in government and society. But machines should not replace human.

Involvement in nexuses of complexity (see below Part 2: Global-Democracy nexuses of complexities):

- AI and digital technologies for public services and democratic life
- AI at the service of human collective intelligence

Corresponding ideas from local thematic syntheses:

5 countries (IT, KE, PT, TW, USA) 7 ideas

- (Italia – Democracy) IT-LUMSA: Humanism and human-centric approach to AI development
- (Kenya – Democracy) Undesirable: Automation of tasks or process
- (Portugal – Democracy) Desirable: Artificial intelligence should be used to help, not replace, humans
- (Portugal – Democracy) Desirable: Neuroimaging could be used for lie detection
- (Portugal – Democracy) Desirable: Artificial intelligence may compensate humans' limitations
- (Taiwan – Democracy) Desirable: AI as a tool in assisting humans
- (USA – Democracy) AI may be able to assist democracy and human agency by improving human capacities

Acknowledging the positive (potential) impact of AI on human life while asking the right questions

Depending on the use that humans make of it, AI can be a danger or an opportunity to human in general and to democracy particularly. Can AI help humans and help the common good? Can AI help to connect regions and people? Can AI and NS help improve democracy by assisting humans, for instance, to make informed decision-making?

Involvement in nexuses of complexity (see below Part 2: Global-Democracy nexuses of complexities):

- AI and digital technologies for public services and democratic life
- AI at the service of human collective intelligence

Corresponding ideas from local thematic syntheses:

4 countries (BE, FR, KE, PT) 6 ideas

- (Belgium – Democracy) Is technological progress a danger or is it an opportunity?
- (France – Democracy) Artificial Intelligence (AI) is currently perceived as a powerful tool, although it remains, for the moment, limited compared to the complexity and diversity of human brain capabilities
- (Kenya – Democracy) Enhancing governance in a continent with multiple diversity
- (Kenya – Democracy) Enhancing efficiency

- (Kenya – Democracy) Desirable: tracking development
- (Portugal – Democracy) Humans and machines may bond

Fostering literacy and critical thinking to preserve and strengthen democracy

Every citizen should be aware of the nature, limits and risks of technologies they're using or they are confronted with. Fostering awareness about AI issues concerning democracy and digital literacy is key to preserve and strengthen democracy. It is more broadly essential to preserve and develop ethical literacy and critical thinking.

Involvement in nexuses of complexity (see below Part 2: Global-Democracy nexuses of complexities):

- AI at the service of human collective intelligence

Corresponding ideas from local thematic syntheses:

3 countries (IT, PT, TW) 4 ideas

- (Italia – Democracy) Ethical Literacy
- (Portugal – Democracy) Undesirable: Humans are ill-prepared to prevent the potential negative impact of artificial intelligence and neurosciences
- (Portugal – Democracy) Desirable: It is possible and relevant to increase humans' preparedness to manage scientific and technological advancements
- (Taiwan – Democracy) AI-literacy is needed for the appropriate use of AI

Setting limits, control and regulation of AI to preserve democracy

A world without human control of technology is a dystopic world where democracy can be harmed. Then encouraging a reasoned use of AI technology (including Video surveillance, algorithms, big data, social media), always under human control, is an important concern to preserve democracy. Setting limits, control and regulation means, for example: to implement updated normative tools and juridical rights for citizen (which is a multidisciplinary concern); to develop and implement ethical codes for professional groups (e.g., web developers); to take specially care about vulnerable groups; to identify responsible parties for a given harmful outcome (e.g., disinformation); to apply penalties for entities and/or individuals that break the law…

Corresponding ideas from local thematic syntheses:

8 countries (BE, CA, CH, IT, KE, PT, TW, USA) 16 ideas

- (Belgium – Democracy) Undesirable: the positive impact of technologies on society is questionable
- (Belgium – Democracy) Desirable: digitalization should serve human civilization
- (Belgium – Democracy) Desirable: the advantages of regulating digitalization
- (Canada – Democracy) Preserving democratic life
- (Chile – Democracy) Technology regulation: need to establish standards and limits to ensure its ethical and responsible use
- (Italia – Democracy) Ethics of AI in Democracy
- (Italia – Democracy) Ensuring Human Control
- (Italia – Democracy) Ethics at the Crossroads of AI, Democracy, Education, and Neuroscience
- (Italia – Democracy) Call to action
- (Kenya – Democracy) AI is complex in decision making

- (Kenya – Democracy) Undesirable: unethical practices
- (Kenya – Democracy) The ethics surrounding use of AI and NS
- (Portugal – Democracy) Desirable: Regulation should be updated to minimize risks and maximize benefits of the use of artificial intelligence and neurosciences
- (Taiwan – Democracy) AI can disrupt human society without strong regulations
- (USA – Democracy) AI will require governance by those in power
- (USA – Democracy) Machines are to serve humanity, therefore humanity must maintain appropriate control of AI

Taking into account vulnerable people and contributing to human rights, social and political inclusion

Vulnerable people (poor, children, seniors, migrants…) has to be considered when using AI in social and political fields as the digital gap (which has to be filled in) widens inequalities and harm social justice and democracy. It is important to consider access inequalities as well as (at the level of nations) inequalities in the ability to develop sovereign AI systems. One must also consider the problem of possible automation of discrimination and biases. If correctly employed, AI and digital technologies can enhance social justice and human rights defense.

Involvement in nexuses of complexity (see below Part 2: Global-Democracy nexuses of complexities):

- AI and digital technologies for public services and democratic life
- Ensuring safety and security with undermining fundamental rights
- The stake of sovereign AI capabilities (for economic development)

Corresponding ideas from local thematic syntheses:

5 countries (BE, FR, IT, KE, PT) 17 ideas

- (Belgium – Democracy) Digitalization is not always the best option
- (Belgium – Democracy) Automation and social rights
- (Belgium – Democracy) Digitalization and migration
- (Belgium – Democracy) Undesirable: mechanisms of social exclusion should be countered
- (Belgium – Democracy) Desirable: automation should enable citizens to access to basic services
- (Belgium – Democracy) Desirable: the duties of administrative bureaus
- (Belgium – Democracy) Desirable: technological progress should not leave behind social inclusion
- (Belgium – Democracy) Desirable: a transparent normative framework for an inclusive digitalization
- (France – Democracy) There is concern about the risk of targeting and oppression by authoritarian regimes through algorithms
- (Italia – Democracy) Humanism: Human Rights and Ethical Standards
- (Italia – Democracy) Fair and Non-biased AI
- (Italia – Democracy) Humanism: AI and Human Values
- (Kenya – Democracy) AI promotes human rights
- (Kenya – Democracy) Discrimination and Non-inclusivity
- (Kenya – Democracy) Vulnerable persons and Refugees
- (Kenya – Democracy) AI and NS is undeveloped
- (Portugal – Democracy) Undesirable: The use of digital tools may increase social inequalities

Ensuring privacy protection

The rise of AI raises concerns about privacy. For instance, private and public entities have massive access to all kinds of personal data (about health, opinions, choices, habits and customs…) putting a strain on privacy (one should add to the top of that emerging problems

concerning neurotechnology and brain privacy). To protect democracy and ensure individual freedom, it is imperative to strengthen privacy protection laws and clearly distinguish between private and public life not only online (public opinions and online anonymity) but also on public space (the use of data obtained from videosurveillance as facial recognition must be restricted to certain places, and their use should be justified). Do citizen privacy and safety clash?

Involvement in nexuses of complexity (see below Part 2: Global-Democracy nexuses of complexities):

- Ensuring safety and security with undermining fundamental rights

Corresponding ideas from local thematic syntheses:

6 countries (BE, CA, FR, IT, PT, TW) 11 ideas

- (Belgium – Democracy) Undesirable: the positive impact of technologies on society is questionable
- (Canada – Democracy) Preserving a living space for human beings away from the gaze of others
- (Canada – Democracy) Preserving democratic life
- (Canada – Democracy) Desirable: The use of video surveillance with AI technologies must be restricted to certain places and justified
- (Canada – Democracy) Desirable: The use of data obtained from video surveillance and AI technologies must be carefully controlled
- (France – Democracy) The rise of artificial intelligence raises concerns about privacy, illustrated by massive access to personal data by private and public entities
- (France – Democracy) The complexity of privacy in the digital age is a crucial issue
- (France – Democracy) Desirable: Preserve boundary between the private and public spheres
- (Italia – Democracy) Ethical Boundaries in Neuroscience-AI Integration
- (Portugal – Democracy) Desirable: Humans should change the way they use digital tools
- (Taiwan – Democracy) Human privacy should be respected

Being aware of challenges regulation raises

A clear consensus emerges on the fact that powerful new technologies such as require governance and regulation. However, regulation raises many acute issues making it a very difficult challenge. One can for instance mention the topic of social media moderation: who is the right actor? AI technologies may contribute but what is the place of humans? Such a topic reveals very fundamental questions about truth, democracy, and legitimacy. More broadly, regulation of AI is challenging for several reasons: the pace of technological development, the obfuscation of patterns of responsibility (with digital technologies in general and more specifically with machine learning), the often "easy" access to powerful tools (in the hand of badly intentioned actors, technology such as image / facial recognition can become extremely harmful), the global scale of research and development (with diversity of value systems around the world as well as constellations of conflicts of interest), …

Corresponding ideas from local thematic syntheses:

3 countries (FR, PT, USA) 3 ideas

- (France – Democracy) The challenges and dilemmas surrounding the use of artificial intelligence (AI) in social media moderation are perceived as significant issues
- (Portugal – Democracy) Undesirable: It is difficult to minimize the potential negative impact of artificial intelligence and neurosciences through regulation
- (USA – Democracy) AI regulation is difficult due to values diversity and conflicts of interest

Using AI to ensure safety and security

Participants highlighted the benefice of using AI to fight against various threats and difficulties, thus ensuring better security and safety for human societies. For instance, videosurveillance or facial recognition might help to identify people in fault in public space, so potentially leading to more security. AI may also help anticipate the vagaries of the weather and climate change, thus improving food and water safety of communities, especially in poor areas.

Involvement in nexuses of complexity (see below Part 2: Global-Democracy nexuses of complexities):

- Ensuring safety and security with undermining fundamental rights

Corresponding ideas from local thematic syntheses:

2 countries (CA, KE) 2 ideas

- (Canada – Democracy) Ensuring the safety of people in society
- (Kenya – Democracy) Desirable: Climate change mitigation

Part 2: Global-Democracy nexuses of complexities

Being human in the time of NS and AI implies carefully exploring nexuses of complexities where valid ideas are nonetheless in tension, manifesting subtleties and challenges one should not overlooked. Here are below some examples of **nexuses of complexities** in the field of **Democracy**, identified based on **local and global syntheses**.

The democratic challenge of regulation

A clear consensus emerges on the fact that powerful new technologies such as require governance and regulation. It is crucial to encourage a reasoned use of AI technology (including Video surveillance, algorithms, big data, social media), always under human control. We need to implement updated normative tools and juridical rights for citizens (which is a multidisciplinary concern); to develop and implement ethical codes for professional groups (e.g., web developers); to take special care about vulnerable groups (preventing the automation of discrimination for instance).

However, part of the exchanges also highlights that regulation raises many acute issues making it a very difficult challenge. One can for instance mention the topic of social media moderation: who is the right actor? AI technologies may contribute but what is the place of humans? Such a topic reveals very fundamental questions about truth, democracy, and legitimacy. More broadly, regulation of AI is challenging for several reasons: the pace of technological development, the obfuscation of patterns of responsibility (with digital technologies in general and more specifically with machine learning), the often "easy" access to powerful tools (in the hand of badly intentioned actors, technology such as image / facial recognition can become extremely harmful), the global scale of research and development (with diversity of value systems around the world as well as constellations of conflicts of interest), …

To cope with the challenge of AI regulation, many participants insist on the importance of digital literacy and critical thinking that should be fostered.

Ideas from local and global synthesis mobilized in this nexus of complexity:

- (Global – Democracy) Setting limits, control and regulation of AI to preserve democracy
- (Global – Democracy) Taking into account vulnerable people and contributing to human rights, social and political inclusion
- (Global – Democracy) Being aware of challenges regulation raises
- (Global – Democracy) Fostering literacy and critical thinking to preserve and strengthen democracy

Expertise input:

A. From the lawyer's point of view

Yves Poullet[2]

[2] Professor in Law of new technology of information and communication (Université de Namur, ESPHIN – CRIDS, Belgium)

In light of the depth of the challenge of AI regulation, we might recall some basic principles of law, notably with the importance of the rule of law, as a fundamental principle to ensure vivid democracy. The rule of law principle means that for limiting our liberties or to prevent the risk of doing it, it is necessary to go through legislative measures, expressed clearly and in a comprehensive manner, published, having strictly proportionate content according to its purpose and acceptable within a democratic society.

In terms of the content of AI regulation, the transparency about the functioning and the purposes pursued by the data controller should be reinforced, together with the right to contest the use of one's data (notably to protect persons' autonomy). In the same vein, we must assert the accountability of the AI developers. This accountability principle leads to impose to them a multidisciplinary and multistakeholder assessment of the applications they are developing and the risks linked.

Furthermore, it is the responsibility of the States to set up a forum where society might openly discuss the ethical aspects of certain large public innovations.

B. Open societal discussions on ethical questions

Based on insights from Brian P. Green,[3] and Mathieu Guillermin[4]

This resonates with the question of where the intervention to "protect" people from AI should occur. Should we rely on individuals to be educated enough to protect themselves? Or on politicians to be educated enough to protect citizens? Or on businesses to know enough? Or on the engineers making the product? All involved stakeholders need a say in their own realms of action. No one group can be responsible for all because the problem of AI literacy and control is too complex and needs to have many points of intervention to direct it towards good.

Some things should be automated and others not; how do we know which is which, and what is our rationale for making this distinction? We need a "why" for determining what is legitimately automatable and what not. Collectively exploring this "why" question, the question of our needs, may prove extremely tricky. As our civilization rapidifies there would seem to be no opposing the force of delegation through AI automation because humans simply cannot be fast enough. We already see this in areas of high-frequency trading and cyber offense and defense. When we ask: what can be delegated and what not? This is not only a question about what is technically feasible. It also means wondering WHY?

This question about the "why" pushes us in the domain of evaluative reflection, of values and interests. As mentioned by some participants in the discussions, this reflection may prove difficult as values and interests can be highly divergent. However, it may be interesting to adopt a nuanced approach. Although there can clearly be strong disagreements in moral and ethical matters, this does not necessarily mean that common ground is impossible. As a first approximation, there seems to be some foundational values to build from. Some authors suggest 5 values that could be universal: survive, reproduce, live in society, educate young,

[3] Professor in AI Ethics, Director of technology ethics at the Markkula Center for Applied Ethics (Santa Clara University, USA)
[4] Associate professor in ethics of new technologies (UCLy (Lyon Catholic University), UR CONFLUENCE : Sciences et Humanités (EA 1598), Lyon, France)

seek the truth.[5] These values could be said *objective* as they are reasonable to a wide variety of people because they exist by logic, in this case proof by contradiction / *reductio ad absurdum*.

In addition, the existence of strong disagreements does not in itself mean that there are strong divergences between values people uphold. Very often, values are shared but can enter in tension and then people disagree about priority to be given to some over others (security versus privacy protection, individual freedom versus common good, etc.). It thus means that we should always reflect on our disagreements and what they bear upon (there may be more agreement than we believe at first sight, more ground for constructive divergences).

This allows us to highlight the importance of reinforcing the capabilities of all actors to participate to these societal open discussions. As we just saw, it demands fostering critical thinking. It also necessitates to cultivate tech and digital literacy to warrant as informed as possible discussions.

You can also find this complexity on the NHNAI website: https://nhnai.org/focus-on-nexuses-of-complexity-democracy-6/

AI and digital technologies for public services and democratic life

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 and digital technologies also seem to be seen as interesting for facilitating democratic life and political decision-making (notably with data analysis to better understand currents within public opinion).

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). Collective (democratic) life necessitates to preserve (or even increase) empathy and relationships between humans. 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). Mobilized AI technologies must be reliable (deceiving hopes triggered by announcement of digitalization may undermine even more trust in governments), and display

[5] https://arxiv.org/pdf/2311.17017

strong levels of fairness, accountability and transparency (to ensure trust-building and social acceptance).

On a more fundamental level, many participants claim a kind of right not to be reduced to their digital data.

Ideas from local and global synthesis mobilized in this nexus of complexity:

- AI and digital technologies can improve public services and democratic processes, but only if used correctly:
  - (Global – Democracy) Acknowledging the positive (potential) impact of AI on human life while asking the right questions
  - (Global – Democracy) Privileging AI cooperation and support instead of human replacement
- Decision-making must remain under human control: (Global – Democracy) Preserving human responsibility on ethical choices/decision-making
- (Global – Democracy) Taking into account vulnerable people and contributing to human rights, social and political inclusion
- (Global – Democracy) Preserving empathy, human contact and relationships
- Right to not being reduced to one's data: (Global – Democracy) Recognizing that human persons exceed the sole measurable dimensions
- Risk of undermining trust in case of low reliability, unfairness or lack of transparency and accountability: (Global – Democracy) Preventing AI from undermining humans' critical thinking, decision-making abilities, and collective intelligence

Expertise input:

Based on insights from Brian P. Green, Mathieu Guillermin, Nathanaël Laurent,[6] and Yves Poullet

A. Improving efficiency of democratic processes without undermining persons' singularity

AI may help us in many domains. We want to use AI to become more efficient at good things and at the same time use AI to make bad things less efficient. Can AI help to make it easier to help people? Can AI be used to catch corruption? What other good things can AI help with and what bad things can AI help to stop? The use of AI to reinforce democratic processes is an interesting one, also likely fraught with controversy, but perhaps capable of doing things never before possible with democracy, like giving surveys to entire populations and finding what "the people" really think about many political issues, with uncertainty bars around them, and so on. A new form of democracy might be possible. That does not mean it will be any better, but it might be worth doing a pilot study and experimenting with it.

Any effort in this sense should nonetheless never undermine the centrality of the human person (and of other living beings). A first fundamental principle that we should assert is the right for everyone to participate in the information society. This right must be progressively enlarged since more and more the use of the infrastructure and certain digital services are today becoming essential for the development of our personality. This right implies a right to education to digital literacy[7] and as well as the right to the 'core platform services' offered by such as communications' social networks and search engines.

[6] Associate professor in philosophy of biology (Université de Namur, ESPHIN, Belgium)

[7] As a striking illustration of this issue of inequalities of access to basic digital services, a recent Belgian survey pointed out that, in 2023, "40% of Belgians remain in a situation of digital vulnerability, due to poor digital skills or non-use of the internet. The acceleration in the digitization of our society is therefore not leading to a proportional increase in digital skills" (https://kbs-frb.be/fr/quatre-belges-sur-dix-toujours-risque-dexclusion-numerique).

Preserving the centrality of the human person also means respecting the principle of human oversight (the control by human people of the functioning of AI systems). Moreover, people should never be integrally subject to decisions taken by automated systems. Explanations of decisions must be furnished by human people and a right of recourse must be warranted.

This respect for the centrality of the human person ties in with one of the strong axes of Pope Francis' positioning on AI in connection with resistance against what he calls the "technocratic paradigm": "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 determine how we understand human rights, to set aside the essential values of compassion, mercy and forgiveness, or to eliminate the possibility of an individual changing and leaving behind the past."[8]

B. Are algorithms more neutral than humans?

With this in mind, it is important to solidify our collective acculturation to digital technology. Indeed, the notion of algorithm can easily convey the idea of an absence of bias and, the idea of enhanced rationality or objectivity by comparison to human judgment (after all, algorithms are logical-mathematical procedures that leave no room for arbitrariness or human subjectivity). Yet this connotation masks a much more contrasting reality.

The basic intuition is valid: if a discrimination is explicitly programmed, it will "show up" in the program and the programmer can be called to account. However, this transparency is not necessarily the case with AI programs obtained through so-called machine learning. Without wishing to join the ranks of commentators who present these programs as black boxes (we can watch the calculations being made, nothing is hidden or invisible on principle), it is important to understand that they can very easily include biases and lead to discrimination that is difficult to detect by looking directly at the program's content.

Indeed, the general idea behind machine learning is to attempt to bypass limitations in our ability to explicitly write programs for complex tasks. For example, we can easily write a program to distinguish between black and white monochrome images ... all it takes is a few simple calculations on the numbers encoding the color of the pixels in such images ... but what calculations can we make on these same numbers to obtain a program to distinguish between multiple images of everyday objects? At this stage, we can try to go a step further by writing a program with "holes", or rather "free parameters", i.e. an outline of a program capable of performing many different logical-mathematical operations (multiplication by coefficients, additions, other more complex operations) and chaining them together in a multitude of ways. The details of the operations will be determined by setting the parameters to a certain value. The idea of machine learning is to say that, with a bit of luck (and above all a lot of skill and astuteness from the behalf of developers), there is a set of parameters that will produce an efficient program for the task that was resisting until now (e.g. classifying images of everyday objects). Then, we'll try to find this famous set of parameters (or at least a satisfying set of parameters) automatically, with another program that will test a large number of parameter-

[8] Message of his Holiness Pope Francis for the 57th World Day of Peace, 1st january 2024, https://www.vatican.va/content/francesco/en/messages/peace/documents/20231208-messaggio-57giornatamondiale-pace2024.html

setting possibilities by grouping around more or less efficiently. A very effective way of guiding this automatic parameter-setting program is to give it numerous examples of the task at hand (i.e. numerous examples of images already classified according to what they picture). If all goes well, the result is a correctly parameterized program that reproduces the examples (we say we've learned a model or trained an algorithm... but it's still automatic parameterization).

C. Algorithms embed humans' (intended and unintended) objectives and tendencies

With this basic understanding of machine learning, it's easier to see how "successful" learning process can still lead to a highly problematic program. If we guide an automatic parameterization with biased data at the outset (reflecting sexist or racial discrimination, for example), successful learning will lead to a program that reproduces these biases or discriminations.[9] Similarly, if we "train" a program on non-representative example bases (for example, because groups or minorities are not represented in the data), it is very possible that the program will not work as well for all the persons who will use it or be subjected to it.

In general, it is very important to debunk the illusion of digital technology as mere neutral tools humans create, store aside and mobilize only when needed. Rather, digital technology, as any technology, is better conceived as networks of interrelated human actors (computer scientists, designers, programmers, engineers, users, etc.) and non-human components (servers, rare earths and lithium mines, water resources mobilized for data centers cooling, etc.). Accordingly, the behavior and outcomes of AI systems (and more broadly of digital technologies) will always result from (and reflect) what humans willingly or unwillingly made them with (programming, examples in training datasets, socio-ecological impacts, etc.).

In particular, AI will reflect, propagate and possibly reinforce power asymmetries in society. Because AI is a centralizing technology (centralizing data, computing power, and human talent), it disempowers those who are not centered. In this way, AI is antidemocratic. But democratic societies can control antidemocratic influences if they are smart enough to perceive them and determine how to keep them on the democratic "leash." Those with control over AI need to be responsive to those who are subject to their power, whether it is businesspeople, government officials, engineers, and so on.

This means that delegating some tasks of governance to (machine learning) algorithms and AI systems can prove beneficial only if conducted with extreme caution. The point of view of Antoinette Rouvroy (Belgian philosopher and lawyer) is particularly enlightening in this respect:[10]

> *Machine learning and, more generally, the ability of machines to make us aware of the regularities in the world that can only be detected in large numbers, is intended to increase our individual and collective intelligence by giving us access to a 'stereo-reality' that is both analogue and digital, and that can improve the way we govern ourselves and coordinate our behavior in a*

[9] One example among many others (here with generative AI): https://restofworld.org/2023/ai-image-stereotypes/

[10] Interview of Antoinette Rouvroy on the topic of "algorithmic governmentality" (2 December 2019 by Catherine De Poortere) (our translation): https://www.pointculture.be/articles/focus/gouvernementalite-algorithmique-3-questions-antoinette-rouvroy-et-hugues-bersini/.

> *sustainable way (provided, however, that we recognize that algorithms are, just as much as human decision-makers, always 'biased' in their own way, even if these 'biases' do not appear to be easy to detect because they seem to have been 'absorbed', However, we must recognize that algorithms are just as 'biased' in their own way as human decision-makers, even if these 'biases' are not easy to detect because they seem to be 'reabsorbed' in the hidden layers of neural networks).*

In her criticism of "algorithmic governmentality", Antoinette Rouvroy warns against the risk of a too large and undiscriminated delegation of decision-making to machines that would lead to replace our human and living ways of enunciating, verifying and justifying our convictions by "a regime of optimization and pre-emption":[11]

> *The categories or forms (ideologically contestable, subjectively biased, always a little 'inadequate', etc.) through which we are socially, culturally, politically or ideologically predisposed to perceive and evaluate the events of the world and its inhabitants are thus replaced by the detection of signals in 'real time' and an anticipatory evaluation not of what people or events 'are', but, in the mode of 'credit', of the opportunities, propensities, risks, etc. that their forms of life 'carry'. The aim of algorithmic modelling is no longer to produce 'knowledge', but to provide operational information that is neither true nor false, but sufficiently reliable to justify pre-emptive action strategies.*

Moreover, as already evoked, algorithms must not be understood as neutrally processing facts. Facts themselves are never neutral. Humans are always endowed with the responsibility of establishing the facts, interpreting, making sense of reality. This is of course a fallible endeavor that can be perverted. But algorithms do less (and not more) than this:[12]

> *For algorithms, the only 'facts' are the data, rendered amnesiac of the conditions under which they were produced. Yet facts, or data, are never more than the reflection or effects of power relations, domination, discriminatory practices or the stigmatization with which social reality is riddled.*

You can also find this complexity on the NHNAI website: https://nhnai.org/focus-on-nexuses-of-complexity-democracy/

AI at the service of human collective intelligence

Many participants point out that policy and decision making must remain based on human interaction and collective reflection and deliberation. There is a large consensus against government by machines (technocracy), a large consensus on the fact that AI should not

[11] Ibid. (our translation).
[12] Ibid. (our translation).

replace humans in decision making, in particular in the key field of collective political decisions (see the related nexus of complexity). Indeed, human relationships and empathy are key for collective decision making and should be preserved and reinforced.

In this respect, digital tools already have deep positive as well as negative impacts. They provide tremendous possibilities for information exchange and collective debates at unprecedent geographic scales and temporal pace. With internet and social networks, information sharing has become extremely liberalized. Nevertheless, this liberalization of our collective information landscape also triggered the problem of having too much information available and the need to editorialize it more efficiently. In this respect, discussions reflect serious worries about recommendation algorithms that can reinforce biases and isolation of given groups by creating echo chambers and information bubbles. They also highlight the rapid increase of production of deep fake news with generative AI. These processes can even be exploited for voluntary manipulation. In any case, this leads to weakening of our collective relationship to truthfulness in policy and societal debates, thus diminishing instead of enhancing our collective intelligence capacities, our ability to be genuine persons in our citizen life with autonomy.

Some participants highlight in this respect the problem of mediatic hypes and the tendency to fall for sensationalism (including hypes and sensationalism about AI itself) which reinforces the problem of information editorialization while more responsible journalism is more necessary than ever.

In general, participants insist upon the need for fostering critical thinking to better navigate our information landscapes and to support our collective intelligence and policy- and decision-making abilities. AI could be of great help in this respect, for instance by contributing to improve the quality of information or by supporting the fight against (deep) fakes news and their dissemination (social networks moderation).

Ideas from local and global synthesis mobilized in this nexus of complexity:

- Governing should remain a human activity, with decision-making based on human interaction;
  - (Global – Democracy) Privileging AI cooperation and support instead of human replacement
  - (Global – Democracy) Preserving empathy, human contact and relationships
  - (Global – Democracy) Preserving human responsibility on ethical choices/decision-making
- AI put our collective intelligence and decision-making capabilities at risk:
  - (Global – Democracy) Preventing AI from undermining humans' critical thinking, decision-making abilities, and collective intelligence
- Need to foster critical thinking: (Global – Democracy) Fostering literacy and critical thinking to preserve and strengthen democracy
- AI supporting our collective intelligence and decision-making processes:
  - Privileging AI cooperation and support instead of human replacement
  - Acknowledging the positive (potential) impact of AI on human life while asking the right questions

Expertise input:

Based on insights from Brian P. Green, Mathieu Guillermin, Nathanaël Laurent and Yves Poullet

The health of our democratic societies partly rests upon the quality of the information landscape and of citizens' collective intelligence. The latter are deeply impacted by digital and AI technology.

A. AI, information landscape and collective intelligence

Given the enormous amount of content available on the internet (even restricted to digital platforms), (at least) partly automated editorialization of information is inevitable. AI tools for profiling users and recommending them some content are thus key pieces of technology. However, we must wonder about the criteria and purposes of these operations of profiling and recommendations. As Gerald Bronner explains,[13] the liberalization of our information landscapes associated with an economic model based on gratuity leads to fierce competition for catching as much as possible users' attention. Recommendation algorithms are designed to push forward contents that will lead users to stay connected (thereby ensuring maximal exposure to personalized advertising and most efficient data collection). This is very different from recommendation systems that would promote flourishing-conducive contents (which can often be less attractive at first sight).

Profiling and recommendation systems can in particular lead to (unintended or intended) deleterious effects in the political domain. Echo chambers can lead to strong polarization of public opinion. Digital content can be tailored to exploit recommendation systems and echo chambers. It is in particular true of deep fake news produced more and more easily with generative AI tools. Furthermore, the concentration of revenues and economic power in the hands of large platforms might lead to concentration of political power, especially in terms of influence upon public opinion. This can deeply weaken the ground and basic conditions of possibility of democratic societies, for instance threatening the organization of free and transparent elections. Echo chambers and (deep) fake news can even employed as weapons of political destabilization in geostrategic conflicts. Recommendation and profiling systems could also be used by authoritarian regimes to reinforce their control over populations. In the same time, AI technology may help fighting against these threats. We could talk about a kind of AI war,[14] defensive systems combating offensive ones with the information landscape as a battleground. AI system can be trained to detect deep fake images or videos. It could be possible to develop recommendation and editorialization systems that limit the virality of fake news.

Globally speaking, we can expect from AI that it helps us improving our information landscape and our collective intelligence (recommendations of more flourishing conducive content, fight against fake news, …), but it will largely depend on our ability to encourage the development of the right technology and the adoption of most positive uses. to foster digital and ethical literacy. This in particular means fostering digital and ethical literacy to enable concerned actors (from developers to users) to establish adequate conditions. We could for instance mention the necessary reflection on the economic model behind digital technologies and the issues raised by the mirage of gratuity).

More fundamentally, we may also fruitfully reflect upon the meaning of expressions such as "right technology" and "positive uses". Using AI to support human intelligence or flourishing and not stifle them is another version of the "balancing" question runs through several themes of discussions. If we want AI to support adult humans being "adults" and oppose the use of AI

[13] Gérald Bronner (2012), *Apocalypse cognitive*, Presses Universitaires de France

[14] https://www.latribune.fr/opinions/tribunes/lutte-contre-la-desinformation-la-guerre-des-intelligences-artificielles-997066.html

to turns us into dependent "infants" with AI as our "parent," there is a lot more to say here about what sorts of support are good and which are bad. A part of the question touches upon refining our understanding of what this collective or human intelligence is we expect AI to improve.

B. What does it mean to foster human collective intelligence?

It can prove fruitful to question our preconceived ideas about what it means to be rational or intelligent, about how we can/should go about developing ideas that deserve to be called **knowledge**, that deserve to be **held as true**. It's certainly tempting to think that we gain in rationality or intelligence by purging our inference procedures of subjective judgments, choices, trade-offs, questions of value, etc. ... This vision certainly encourages the idea that algorithms and learning machines have a head start, since they are ultimately based solely on logical-mathematical computations on data. Endowed with superior neutrality, algorithms thus could support humans in purging the pollution of their subjectivity to improve their rationality. This view may also lead to grant strong credit to algorithmic governmentality we evoked in another nexus of complexity.[15]

However, recent history and philosophy of science (since at least the second half of the 20th century) has shown us the limits of such a purely algorithmic or procedural conception of rationality and intelligence. Any scientific approach, even the most experimental, inevitably relies on human judgments and arbitrations (concerning the basic vocabulary to be used, the major methodological orientations, the objectives to be achieved... but also concerning fundamental intuitions such as the idea that empirical observation does not systematically deceive us).[16] Computer programs are no exception to this indispensability of human judgment. Even in the case of machine learning, humans must for instance arbitrate about the quality of corpus of examples, about the type of program with free-parameters that we will try to automatically tune, or about the automatic parameterization procedure itself.[17] These kinds of judgments or arbitrations are not made "arbitrarily" (in the sense that everyone could do as they please in their own corner). A great deal of skill and experience is required, and it will never only be a matter of applying criteria or procedures in a purely neutral or objective way.

To be intelligent or rational is, of course, to be able to apply criteria, procedures or algorithms correctly (objectively or neutrally), but it is also, and perhaps above all, to be able to judge the quality of criteria and procedures, to have a reflexive and critical attitude towards what we are doing... and therefore to be able to judge and arbitrate fallibly, to make mistakes sometimes, to correct oneself, to evolve (and to help each other in this respect, to collaborate with good will)... Being intelligent in this sense is something fundamentally alive, something that each of

[15] See: AI and digital technologies for public services and democratic life.

[16] Philip Kitcher, *Science, Truth and Democracy*, New York, NY: Oxford University Press, 2001, ISBN : 0-19-514583-6. Mathieu Guillermin, «Non-neutralité sans relativisme ? Le rôle crucial de la rationalité évaluative». Dans : Laurence Brière, Mélissa Lieutenant-Gosselin, Florence Piron (dir.), *Et si la recherche scientifique ne pouvait pas être neutre ?* Éditions Science et bien commun, 2019, 315-338. https://scienceetbiencommun.pressbooks.pub/neutralite/chapter/guillermin/

[17] For more details, see the expertise input in the nexus of complexity entitled: AI and digital technologies for public services and democratic life, especially section B. Are algorithms more neutral than humans?

us can only undertake rooted in our own lived experience (with all the richness but also the limits that this entails)[18] and in healthy collaboration with others.

This collective and relational dimension of human intelligence is of paramount importance and leads us back to the topic of democracy as relying on a robust intersubjective space for deliberation. I become more intelligent when I interact with other people, for instance because they use different categorizations (or use mine differently). Democracy and collective deliberation are more than just the blind concatenation of individual opinions, with predominance granted to ones accepted by the majority. It is first and foremost a way of living and flourishing altogether. AI systems, as smart or "intelligent" they may be, cannot be expected to replace or automate this form of deep collective human intelligence. This would in no way be a support to humans but rather a kind of obliteration of their life and intelligence. The key question we should thus wonder about then is: how can the machine help us to be more intelligent? As more and more pervasive actors of our social environment (we may say that we form techno-social or hybrid systems), digital technology (including AI) not only inform us, but also transform us. We must reflect upon this transformation and where we would like it to lead us. How can digital technology contribute to deepening our life experiences that make us wiser and more experienced? What type of AI systems and digital services will genuinely foster our collective and human intelligence?

You can also find this complexity on the NHNAI website: https://nhnai.org/focus-on-nexuses-of-complexity-democracy-2/

Ensuring safety and security without undermining fundamental rights

Participants to the discussions acknowledge the interest of using AI technologies in many aspects of our lives, in particular to better live together in our democratic societies. In addition to the possible support AI may bring to collective political decision-making or to collective intelligence (which are discussed in dedicated nexuses of complexity[19]), some participants highlight the fact that AI could help improving security, for instance with enhanced video surveillance capabilities. Others point out the benefits of AI in terms of safety, with increased ability to forecast and manage crisis such as epidemics or natural disasters.

At the same time, discussions clearly manifest concerns about fundamental rights and privacy protection, especially mind privacy (already with profiling algorithms, and even more when neuroscience is added to the picture). Participants notably worry about private and public entities having massive access to all kinds of personal data (about health, opinions, choices, habits and customs…), thus putting a strain on privacy.

[18] See for instance: François Laplantine, *The Life of the Senses: Introduction to a Modal Anthropology*, Routledge (Sensory Studies), 2020, 176 p., ISBN 9781472531964

[19] See the following nexuses of complexity: AI and digital technologies for public services and democratic life and AI at the service of human collective intelligence.

Weakening privacy and blurring the limits between public and private spheres may notably impede freedom of thought and expression as well as democratic and social life. In addition, participants insist upon the fact that improvements in security and safety should not be achieved at the expense of the most vulnerable, who may encounter more difficulties in asserting their rights. In general, persons should never be reduced to their data.

Ideas from local and global synthesis mobilized in this nexus of complexity:

- (Global – Democracy) Using AI to ensure safety and security
- (Global – Democracy) Ensuring Privacy protection
- (Global – Democracy) Acknowledging the positive (potential) impact of AI on human life while asking the right questions
- (Global – Democracy) Taking into account vulnerable people and contributing to human rights, social and political inclusion
- (Global – Democracy) Recognizing that human persons exceed the sole measurable dimensions

Expertise input:

Based on insights from Federico Giorgi,[20] Brian P. Green, Nathanaël Laurent, and Yves Poullet

A. Privacy, a cornerstone of democracy

Privacy protection is a key component of collective life, especially in democratic societies. The right to keep some things secret, to keep them outside of the public sphere is extremely fundamental. As recalled by the Belgian philosopher Corentin de Salle, privacy is extremely important for several basic reasons:[21]

> *First, to preserve people's **dignity**. Out of decency, you might say. Secondly, because revealing things that should remain secret **makes people vulnerable**. It can undermine their authority if they have responsibilities. It makes it more difficult for them to assume the social role they must play in their professional lives. It can also lead to their weaknesses being revealed, enabling unscrupulous people to exploit them to manipulate, defraud, steal their identity or do them harm. Finally, protecting privacy is important because everyone needs a **refuge**, a place where they can recharge their batteries without worrying about what they say, do or think. (…)*

Moreover, privacy "is not a fundamental freedom alongside other freedoms, but a condition of other freedoms. In particular, freedom of expression and freedom of movement. [As says Yves Poullet, if I know] that I am constantly being spied on, I will no longer dare to express myself as I wish, even in more intimate and private settings. If I feel controlled at all times, how can I move around as I wish?"[22] With emerging neurotechnology providing new powers of analysis and manipulation of brain functioning, privacy issues may become even more acute, with the possibility to undermine what our mental integrity and psychological identity. It may be time to recognize 'neuro-rights' as certain countries have already done.

Another way of looking at the foundation of the right to privacy is the issue of the power differential between the individual and the state. Because knowledge is power, and the state

[20] Post-doctoral researcher in philosophy (Université de Namur, ESPHIN, Belgium)
[21] De Salle C., Tellier S., De Cooman J., Petit N., Duquenne E., Lombardo A., Hublet L. & Leduc P. (2018) *La vie privée à l'ère des big data*, Les Études du Centre Jean Gol, p. 9. https://www.cjg.be/les-etudes-du-cjg-la-vie-privee-a-lere-des-big-data/
[22] Ibid.

has vastly more knowledge and power than the individual, the state is to be made to be more transparent to the individual (freedom of information about the government, narrowly scoped government secrecy), and the individual more opaque to the state (right to privacy). Digital technology and AI systems somehow extend this problem of power asymmetry as, AI is a power that can be controlled by states, but also by other organizations, and these organizations should likewise be made more transparent to the public and the public likewise protected from these organizations through privacy rights.

The desire for public safety via surveillance is, of course, in tension with the right to privacy noted above. The balance between safety and privacy is extremely contextual and so will vary from place to place, but in general, the transparency of the government side (or powerful organization) of the equation can be similarly enhanced in order to still protect individuals even if they are being more surveilled. It is also important to mention that privacy should never be considered from a pure individualistic approach. For instance, with profiling and recommendation technology: we must consider the fact that our profiles are deduced not only from our data but from big data where our data are mixed with data about other people. This means that our individual decision to allow our data collection and processing by AI applications also somehow engage other people. Our data might be used for profiling other people who refused the collection and processing of their data. In fact, behind the exploitation of people (personal) data there is a global question about the type of social and economic model we want to live in, a question that goes beyond the sole question of states' surveillance of their citizens.

B. Surveillance capitalism

In this respect we could evoke Zuboff's book *The Age of Surveillance Capitalism* (2018). Zuboff, an emerita professor at Harvard Business School known for her research on technology in the workplace, has taken on a big task: to create a set of terms that capture the excitement around modern tech companies. She argues that surveillance capitalism makes money by collecting, processing, and analyzing people's behavior data using methods that encourage "radical indifference," a way of observing without any witnesses. This sets it apart from industrial capitalism, which profits from exploiting natural resources and labor. Surveillance companies have found a wealth of information from the data they gather for their own use, and they realized they could sell this "data exhaust" to advertisers. For them, the people behind the data are just accessories.

Zuboff sees the resulting economic structures as completely new: a rogue form of capitalism. While previous companies relied on "primitive accumulation," surveillance companies like Facebook and Google depend on ongoing "digital dispossession," a concept she has taken from David Harvey. Each of us is constantly made understandable and profitable for these companies. More than just government surveillance that aims to limit free will, Zuboff worries that these companies will use human free will to achieve their goals, relying on the predictable outcomes we provide.

For Zuboff, this creates a troubling situation with respect to the core idea of modern liberalism: the individual. She views surveillance capitalism as an extension of B.F. Skinner's research in psychology, where people are seen as nothing more than their behaviors and reflexes. Skinner

wanted to improve social unity and workplace efficiency, regardless of individual choice. Zuboff highlights examples that show how surveillance capitalism relates to this kind of behaviorism, such as the development of biometrics and Rosalind Picard's research on affective computing for autistic users, which was later taken up by surveillance startups. All of this shows that surveillance capitalism is gradually undermining our essential right to personal freedom.

You can also find this complexity on the NHNAI website: https://nhnai.org/focus-on-nexuses-of-complexity-democracy-3/

AI and work automation

Participants pointed out the need to find a balance between automation of tasks at work and human labor and dignity. Although it is undeniable that AI technologies will trigger enormous gains in efficiency and productivity, participants worry about the manner the benefits will be shared. Possible impacts on employment and people's financial resources could threaten democracies themselves. Beyond the financial dimension, some participants highlight the fact that human flourishing comes from performing given social roles and from having a purpose. Other participants also express concerns about the prospect of being forced to create a duplicate or an improved version of themselves at the risk of losing their own identity.

Ideas from local and global synthesis mobilized in this nexus of complexity:

- (Global – Democracy) Finding the right balance between human labor and AI task automation
- (France – Democracy) Participants express worries about the prospect of being able to create a duplicate or an improved version of themselves
- (Portugal – Democracy) Human fulfillment comes from performing different social roles

Expertise input:

Nathanaël Laurent

In recent study on AI impact on employment by the Belgian bank ING, one can find an interesting survey reflecting "a paradoxical perception of AI".[23]

> *The ING study was accompanied by a representative survey of a thousand Belgians on the impact of AI on employment and society (conducted at the end of 2023). The most striking result is that 42% of Belgians believe that AI will lead to job losses, but only 3% fear for their own jobs. What's more, 15% think that AI will have a major impact on their work (see graph below). This is true across all age groups, genders and professions.*
>
> *Belgians therefore believe that AI will have a negative impact on the global labour market, but not on their own jobs. This apparent contradiction often emerges from surveys: citizens tend to have a negative perception of the impact of AI on society in general, while a positive feeling often prevails about what (gen)AI can mean for them in concrete terms. The paradox can probably*

[23] (Our translation) https://www.agoria.be/fr/services/expertise/digitisation/intelligence-artificielle/impact-de-lia-sur-le-marche-du-travail-belge-des-bouleversements-mais-sans-augmentation-du-chomage-etude-ing

> *be explained by the many negative communications about the dangers of AI, whereas the positive impact of a new technology should come mainly from practice and personal experience. Many workers using GenAI report a positive experience and make good use of the time freed up.*

You can also find this complexity on the NHNAI website: https://nhnai.org/focus-on-nexuses-of-complexity-democracy-4/

The stake of sovereign AI capabilities (for economic development)

Participants from Kenya expressed their strong hope that AI can better the condition of the most vulnerable and excluded. However, they also worry about the lack of sovereign resources and capabilities, as well as vulnerabilities in terms of literacy and access to technologies. They point a risk of technological dependence and colonization, also implying that AI development in their country may not lead to local economic development.

Ideas from local and global synthesis mobilized in this nexus of complexity:

- (Global – Democracy) Taking into account vulnerable people and contributing to human rights, social and political inclusion
- AI and support to the post vulnerable:
  - (Kenya – Democracy) AI promotes human rights
  - (Kenya – Democracy) Vulnerable persons and Refugees
- AI can foster economic development: (Kenya – Democracy) Desirable: tracking development
- Lack of AI sovereign development: (Kenya – Democracy) AI and NS is undeveloped
- For acknowledgement of AI huge potential for vulnerable persons and for problems of access and literacy, see also: (Global – Health) Using health technologies to better the conditions of life of the most vulnerable persons

Expertise input:

Nathanaël Laurent

The dominant discourse is, of course, that which encourages technological development in Africa and thus leads the continent along the path we have mapped out of a mathesis universalis. As Franck Kié, General Commissioner of the Cyber Africa Forum, explains:[24]

> *It is by answering these key questions that Africa and its 54 States will be able to rise to the challenge of making their digital transformation and the full adoption of artificial intelligence a real lever for growth, to become the digital continent of the decades to come. Some countries are already in the vanguard on this issue, and the others must follow. We have the means, we have the will: let's get to work!* Cyber Africanum est*!*

More critical are the words of Senegalese expert Seydina Moussa Ndiaye:[25]

> *The biggest threat for me is colonization. We may end up with large multinationals in AI that will impose their solutions throughout the continent,*

[24] (Our translation) https://www.jean-jaures.org/publication/cyber-africanum-est-les-enjeux-de-lintelligence-artificielle-et-de-la-cybersecurite-en-afrique/
[25] https://www.un.org/africarenewal/magazine/january-2024/interview-ai-expert-warns-digital-colonization-africa

leaving no room for creating local solutions. Most of the data currently generated in Africa is owned by multinationals whose infrastructure is developed outside the continent, where most African AI experts also operate. It's a loss of African talent.

The other important element to consider is in the context of the fourth industrial revolution. The power of AI combined with advances in biotechnology or technology could be used, and Africa could be the place where all these new solutions are actually being tested. If it's not supervised, we could end up with tests that would take place on humans with chips or even integrated biotechnology elements that we improve. These are technologies that we don't really master well. In regulatory terms, there are certain aspects that have not been considered. The very framework for the application of ideas and existing regulations is not effective.

In concrete terms, and when you don't control these things, it could happen without anyone knowing. We could have Africa being used as a Guinea pig to test new solutions, and this could be a great, great threat for the continent.

Additional interesting resources:

- An interesting report on this subject from an optimistic (non-critical) point of view: https://cpccaf.org/ia-quel-impact-sur-lafrique/
- For a more nuanced and critical account, see: Kouassi Touffouo Frederic PIRA, « Vulgarisation des théories d'adoption et d'appropriation des innovations technologiques pour une intelligence artificielle africaine », *Communication, technologies et développement* [online], 11 (2022), http://journals.openedition.org/ctd/6809

You can also find this complexity on the NHNAI website: https://nhnai.org/focus-on-nexuses-of-complexity-democracy-5/