Integrating the Ethics of Artificial Intelligence in Higher Education :

A Toolkit

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Introduction

The Montreal Center of Higher Education in Artificial Intelligence (PIA, which stands for Pôle Montréalais d'enseignement supérieur en intelligence artificielle), is an initiative launched in 2019 by a group of higher education institutions in Montreal. PIA rallies a network of researchers, teachers, professors and administrators from twelve Cegeps, seven universities and several members affiliated with Montreal's artificial intelligence community, including Mila, the Quebec Institute of Artificial Intelligence and the University of Montreal's Algora Lab. PIA aims to promote and enable the development and adaptation of training programs that focus on AI through a call for collaborative projects that unite colleges and universities.[1]

With the financial support of the PIA, Rosemont College and the University of Montreal have developed the project *Ethics and Artificial Intelligence in Higher Education : For the Responsible Development of AI With And Beyond the Montreal Declaration (Éthique et intelligence artificielle en enseignement supérieur : pour un*

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[1]   Pôle montréalais d'enseignement supérieur en intelligence artificielle. (2020). « Au devant de l'IA ? Qui sommes-nous ? Que faisons-nous ? ». https://poleia.quebec/

développement responsable de l'IA avec et par-delà la Déclaration de Montréal). The main goal of this initiative is to develop a flexible educational program, applicable at both the college and university levels, focused on the main ethical concerns surrounding AI. Our approach is inspired by the deliberative and inclusive process that led to the Montreal Declaration for the Responsible Development of Artificial Intelligence. The project also aims at enabling students and professors from Rosemont College and the University of Montreal to tackle ethical concerns related to the use of AI and to take action in their communities.

To help guide students and teachers, our team has developed and made available the following document: *Integrating the Ethics of Artificial Intelligence in Higher Education: A Toolkit*. This toolkit begins with a presentation of the principles and process of the **co-creation** method that was used in drafting the Montreal Declaration, to allow students and teachers to gain a better grasp of the fundamentals. Secondly, to teach students and teachers the basic principles of artificial intelligence, the toolkit discusses the realities and myths surrounding AI. Then, a few scenarios show

some of the possible ethical issues related to AI. Finally, the document offers guidelines intended for teachers eager to host deliberative co-creation workshops on the ethical issues of artificial intelligence.

This way, teachers can get accustomed to the methodology of the co-creation process, and, ultimately, host their own deliberative workshops on the ethics of artificial intelligence. This will offer students the opportunity to discuss these issues and get acquainted with the deliberative process.

Co-creation

Co-creation is a creative process through which citizens are invited to exchange and debate their views regarding a certain topic. This method allows for all participating parties to partake in the creative process of a given project.

Algora Lab. Université de Montréal. (2020). Penser l'intelligence artificielle responsable : un guide de délibération p. 23. https://opendialogueonai.com/ wp-content/uploads/2020/07/FR_De-lib.pdf

The Montreal Declaration

At the turn of the last decade, artificial intelligence became increasingly and significantly more present in our everyday lives, with the exponentially growing popularity of smartphones, social media and targeted advertising. Now, while most people were unaware of the fact that these devices are powered by AI, questions pertaining to the repercussions of artificial intelligence in our lives nevertheless arose. These questions concern both users of AI as well as those who, despite not being users themselves, are still affected in some way.

In January 2017, prominent scientists in the field of computer science met in Asilomar and published the *Asilomar Principles for AI*. Developed exclusively by experts, these principles are directed at, first and foremost, scientists developing artificial intelligence.

In November of the same year, the University of Montreal implemented a drafting process for the

creation of a declaration on the ethics of AI. This declaration, made possible thanks to the financial support of the Quebec Research Fund (Fond de recherche du Québec), is intended to guide the development and social implementation of AI. This declaration is the result of an open and collective reflection, open to citizens of the global community.

All members of the research group agreed that participation in the debate regarding AI should be open to all. AI impacts all of our lives, regardless of whether we are young or old, building a career or retired, connected to the internet or not. This overarching reach of AI is the main reason why the research team insisted that the Declaration should result from an inclusive discussion, one in which everyone could participate. From February to October 2018, through their participation in co-creation workshops, more than 500 people participated in the co-creation workshops of the Declaration.

Co-creation. What does this mean? In essence, saying that the Declaration was co-created insists on the fact that it arose from a collaborative effort, an effort which the team of experts merely guided, rather than lead. Enabling this co-creation process required establishing a minimal and provisional draft of the Declaration beforehand. This preliminary version offered seven rather general principles. Then, participants were presented with fictional scenarios designed to guide them in their reflection and force them to foresee the possible impacts of AI. These scenarios were presented in the form of short stories showcasing examples of plausible future developments of AI. Without falling into the domain of science fiction, the scenarios cast participants into a not-so-distant future, where AI could be used in a predictable manner and give rise to possible ethical dilemmas. Incidentally, some of the scenarios presented actualized less than a year after having been ideated.

The co-creation workshops allowed for significant improvements and modifications to the initial draft of the Declaration. In its final version, the Declaration is composed of **ten main principles**, **sixty secondary principles and thirty-five recommendations.** Its primary purpose is to set important guidelines for the elaboration of responsible and socially acceptable policies framing the development of AI. While considerations such as the environment or solidarity had been left out of the initial draft of the declaration, in its final version, not only were these concepts considered, they have been labelled with the same level of importance as concepts such as autonomy, well-being and privacy.

The Montreal Declaration is an ethical framework for the development and use of AI. Furthermore, it is a source of inspiration not only for its content, but also in virtue of the process from which it arose.

Myths and Realities

The myths and realities section was intended for students. It presents a critical review of four popular beliefs surrounding artificial intelligence and offers valuable insight to help untangle certain subtleties on the subject. The four myths that this section addresses are as follows:

1. Artificial intelligence is infallible.

2. Artificial intelligence is a "Big Brother" type mass control system.

3. Artificial intelligence can solve all of humanity's problems.

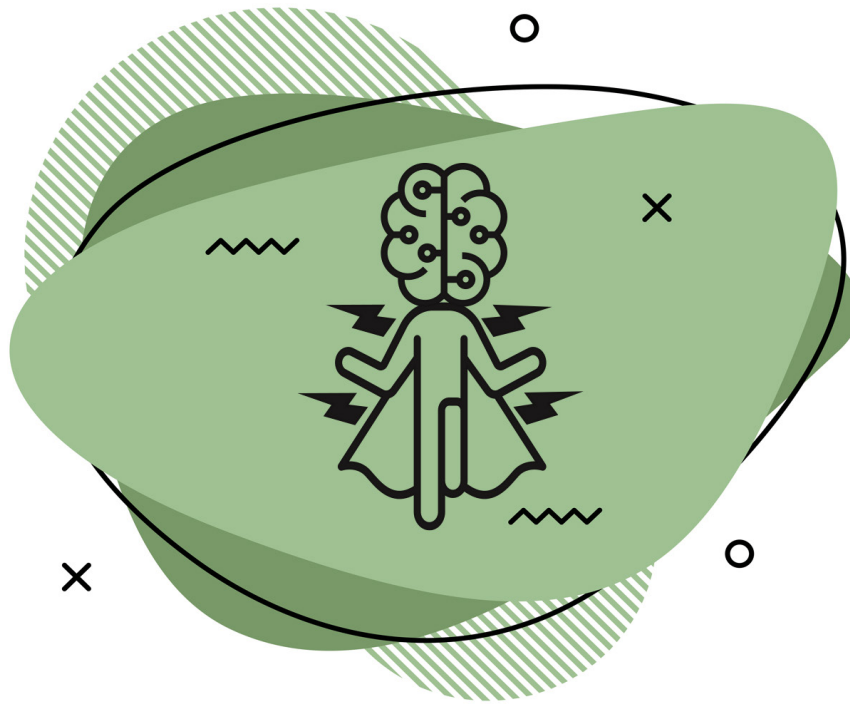4. Artificial intelligence will supersede human beings.

Artificial Intelligence Is Infallible

When human beings deliberate, we consider the quality and quantity of available information and are motivated by the desire to exercise our judgment well. Indeed, the quality and quantity of information that we possess is a determining factor in our decision-making process. For example, when Frederick chooses his clothes for the next day, he requires reliable information about the weather (temperature, wind factor, humidity, etc.) Yet, if the information available to Frederick is unreliable, he will not be able to make a good decision, not because of faulty judgment, but rather because his deliberative process would be hindered by uncertain bits of information.

On the other hand, regardless of the information at hand, Frederick's judgment could also be swayed negatively by his prejudices and biases, another factor known to influence our deliberative process. A bias is a preconceived idea or concept, which can be conscious or not, that influences the way we perceive our surroundings, and alters our worldview. Hence, Frederick could choose to acknowledge only some of the information available, bad weather for example, and neglect other bits of relevant data.

Artificial intelligence systems (AIS) present a certain advantage in this regard, by eliminating the risk of such faulty judgment. AIS can store various types of information in impressive amounts, which they can rapidly and easily

survey to guide people toward the right decision. Furthermore, another advantage of a non-human system such as an AIS is that these systems are, in principle, incapable of holding biases which can influence their deliberative process.

However, while AIS can be very useful for making judgments due to the fact that they can take many factors and criteria into account when deliberating, they are not always immune to biases and prejudices. AIS are human-made systems and therefore, like any other computer system, they are at risk of presenting certain flaws, which can lead to bad decisions. For example, mistakes can occur due to technical malfunctions or design errors. Furthermore, AIS rely on social data. Hence, biases can result from the personal representations of the developer or, more broadly, the social representations of the society in which the AIS was created. In turn, this can lead to invalid or dubious output decisions.

Artificial Intelligence system (AIS)

System designed to simulate functions of the humain intellect in order to acomplish certain tasks initially intended for humans.

Artificial Intelligence Is a "Big Brother" Type Mass Control System

With all the devices and apps that surround us, we seem to be submerged in a thick digital fog. However, through this cloud the impact of AI-powered surveillance systems in our lives emerges. These systems are, in fact, fed by users themselves as they leave a trail of metadata while they search the web, shop online and interact on social media. This personal information is used by AIS to generate targeted advertising. Are we under surveillance? Or worse: are we being controlled?
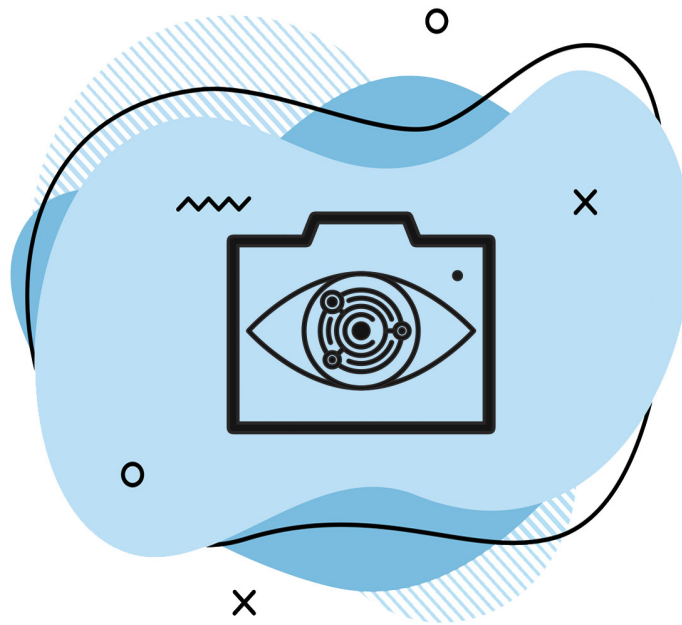
The fear of losing our freedom is exacerbated by the fantasy of a Big Brother surveillance scheme. Certain countries, namely China, go to great lengths to monitor their population, using cameras, GPS tracking, profiling and facial recognition. Omnipresent, like the unblinking eye atop the pyramid, AIS would serve the interests of police states, information agencies and internet giants (Google, Apple, Facebook, Amazon and Microsoft [**GAFAM**]) in order to predict our behaviour[2] or manipulate our decisions. Alas, are we witnessing the actualization of the totalitarian hell depicted in the novel *1984?*

The comparison seems to hold, except for one small detail: today's oppressed frantically give in to this double-blind system: "Feed me or I will die. But my death entails your vanishing from the social sphere." Here AI is the master of no slave. Our dependence to a virtual existence and this technological[3] bubble generates a deep-rooted

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2   In 2017, a Chinese company tested a mass surveillance and crime prediction system by exploiting a synergy between AIS, megadata and facial recognition systems. De GrandPré, Hugo (2017, 26 novembre). « Sommes-nous en train de créer un monstre? ». La Presse+. https://plus.lapresse.ca/screens/040e37d9-b227-4ade-bd45-f4d59d63feea__7C___0.html

3   Alain Damasion is very critical of technological "progress" in his writings as he inquires into what we lose when we abandon ourselves to the ongoing techno craze.

addiction to this reassuring 'Big Mother'[4] whose matrix is designed to create and maintain silos of affinity and conformity. Without fully adhering to the clickbait lies, the user nevertheless maintains an ambivalent relationship with AI. On the darker side, the user gives away tons of personal information[5], sacrifices privacy for social visibility and entrusts certain mental operations to AI. On the positive side, because we can no longer imagine our lives without these devices, they now bear the promise of fulfilling humanity's every desire.

However, despite the virtuous intentions that led to the development of this wide array of AI uses, these innovations threaten to undermine the very foundation of our democracies and alter our connection with others and the world. This is why we have the duty to build awareness and promote citizen deliberation. More than ever, it is crucial that we cultivate our critical thinking and independence of thought in order to regulate and orient the development of AI towards serving the greater good.

Big Brother

Big Brother is the iconic figure from George Orwell's novel *1984*. This omniscient entity watches over the citizens through screens and microphones to intervene when a thought crime is committed.

GAFAM

GAFAM is an acronym that stands for Google, Amazon, Facebook, Apple and Microsoft. There is also BATX: Baidu, Alibaba, Tencent, Xiaomi.

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4   Rousseau, F. (2005). Michel Schneider, Big Mother : Psychopathologie de la vie politique: Paris, Odile Jacob, 2002, réédition 2005. Chez vous, 23(1), 219-222. https://doi.org/10.3917/ chev.023.0219

5   Think of Siri, Alexa or Google Home. These devices generate personal data through the use of vocal recognition algorithms.

Artificial Intelligence Can Solve All of Humanity's Problems

AIS can accomplish many high complexity tasks. For example, an autonomous electric vehicle can drive a passenger safely to a given destination. On a larger scale, these systems could monitor the speed of all vehicles on the road to maximize traffic efficiency and reduce the negative impact of traffic both at the human and environmental levels. Can AIS really solve all of humanity's problems?

Technological solutionism is an ideology which holds that information and communication technologies, e.g., AIS, have the ability to solve all of the world and society's greatest problems, such as climate change, world hunger, diseases and criminality.[6] In the example above involving an autonomous electric vehicle, AIS embody an

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[6]   Vigouroux-Zugasti, E. (2018). MOROZOV Evgeny, 2014. Pour tout résoudre, cliquez ici : l'aberration du solutionnisme technologique. Revue française des sciences de l'information et de la communication. vol. 13. https://doi.org/10.4000/rfsic.3573

elegant solution to the traffic problem.

At first glance, many great problems can be solved through technology. A more profound analysis of the causes of the problem, considering the political and economic dimensions, can inspire some very different solutions. In the case of the autonomous vehicle, one possible solution could be the implementation of an extensive public transportation network, designing bicycle paths and working on changing the transportation habits of citizens.

When all dimensions are understood and considered, AIS present interesting and relevant technological solutions that contribute to solving some of the greatest problems we face.

Artificial Intelligence Will Supersede Human Beings

Will intelligent machines ever surpass human intelligence and, ultimately, compete with, dominate or supersede human beings? This is one of the favoured hypotheses in science fiction and dystopian tales, as it has been explored and revisited many times. We could think of the movies *The Matrix*[7] *or Bladerunner*[8] as examples. In both scenarios, humans must defend themselves against intelligent robots endowed with consciousness and the will to dominate humankind.

The progress made in the last decade in AI, especially in the field of deep learning which allows machines to be rather autonomous in their learning, does, at times, tend to blur the line separating reality from sci-fi. Research seems to suggest that within 10 to 20 years 47%[9] of current jobs could be replaced by robots. It is true that today's artificial intelligence, what is referred to as **weak AI**, competes with many of our cognitive skills, such as calculation, memorization and even reasoning in specific tasks. The speed at which AI can process massive amounts of data and execute highly specialized tasks while maintaining very low margins of error surpasses by far what we humans can do. These advantages push experts to predict that the fields of industry, banking, healthcare and defence will be the most transformed by AI.[10]
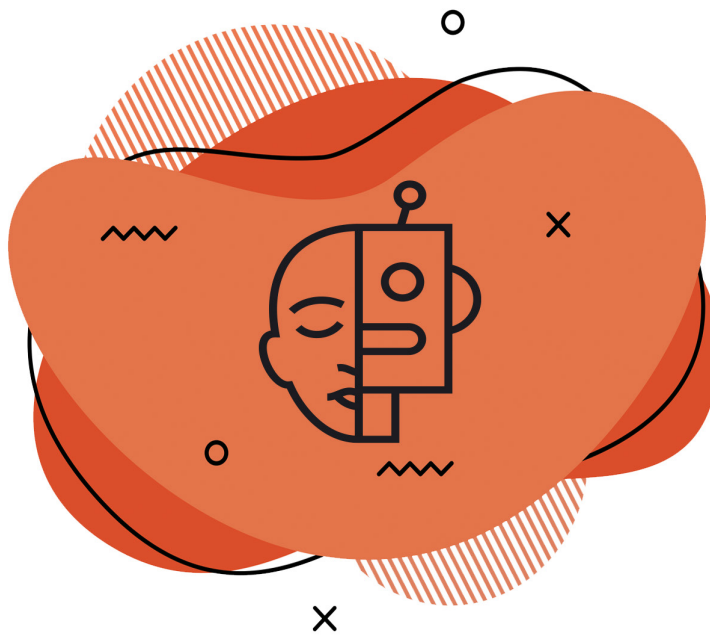
As for **strong AI**, which is truly booming today, it can detect, copy and react to human emotions. It can read non-verbal language, evaluate someone's

7   Wachowsky, L. (1999). *The Matrix*. [Movie]. Warner Bros, Village Roadshow, Pictures Groucho II Film Partnership, Silver Pictures

8   Scott, R. (1982). *Blade Runner*. [Movie]. The Ladd Company or more recently Villeneuve, D. (réalisateur). (2017). Blade Runner 2049. [Movie]. Black Label Media, Thunder Road Pictures Scott Free Productions.

9   Commission de l'éthique en sciences et technologie. (2019). Les effets de l'intelligence artificielle sur le monde du travail. p. 12. https://www.ethique.gouv.qc.ca/assets/documents/IA_travail/CEST_effets_intelligence_artificielle_travail_A.pdf

10   UNESCO. (n.d.) « Entre mythe et réalité ». https://fr.unesco. org/courier/2018-3/intelligence-artificielle-mythe-realite

mood or the level of confidence of a user. However, strong AI struggles when it comes to taking decisions in a context with infinite possibilities because the human mind is much more intricate and vast. As mentioned above, one distinguishing aspect of the human intellect is what is known as emotional intelligence. This type of intelligence is closely connected to experience and allows us to feel empathy for others, to understand the context of a given situation and adapt our interactions accordingly, thus creating true bonds with others. Here we see the true strength and richness of human communication.

Another human distinction can be found in our capacity to create, to give meaning and value to our inventions as well as our capacity for self-determination according to our needs. Many anthropologists have attributed the success of humankind in the animal kingdom to this very trait.

Incidentally, it is this inventiveness that led to the development of technologies such as AI. On its own, AI does not possess the independent will nor the moral autonomy required to set out its own goals. For that, it requires human thought.
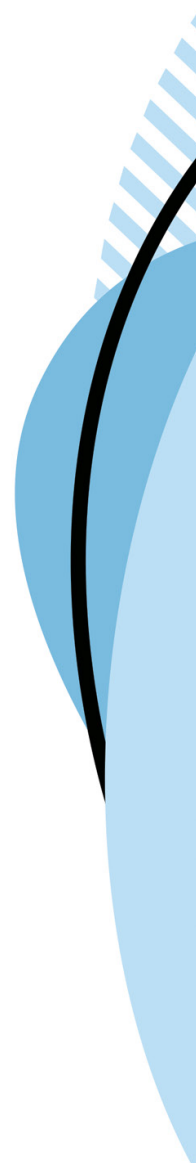
Deep Learning

Deep learning is an automated learning system that generally uses a network of artificial neurons composed of multiple layers of artificial neurons hierarchized according to the complexity of the concepts they are designed to process. Through their interactions, these neural networks allow the system to progressively learn from the mega data it surveys.

Weak AI

Weak AI is an artificial intelligence system designed to imitate a specific function of human intelligence, allowing it to replicate certain tasks.

Strong AI

Strong AI is an artificial intelligence system designed to simulate human intelligence by replicating such capacities as questioning, analysing and understanding its own reasoning.
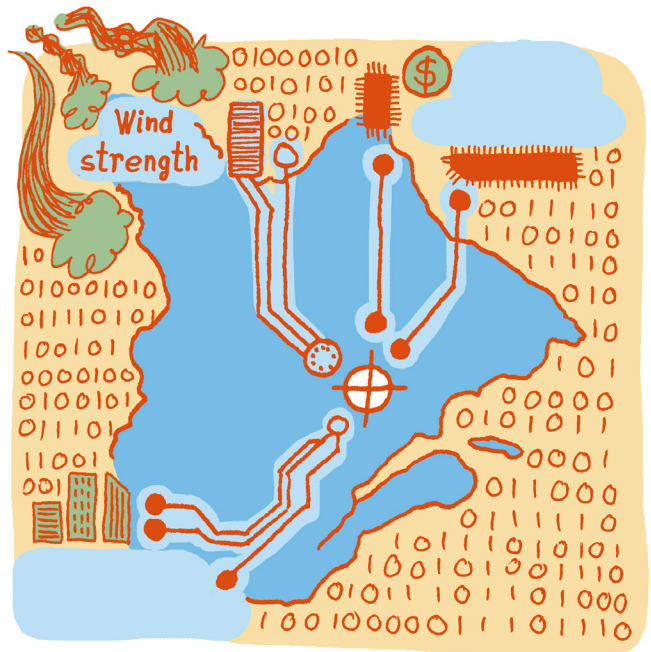
Scenarios

This section is intended for teachers and students. These scenarios have different objectives: they aim to launch the discussion process. Each case presents a scenario that could plausibly be actualised in the near future. They also present ethical dilemmas, i.e., situations in which a tension can be felt between conflicting values and principles. Lastly, these scenarios are open and non-normative, meaning that no norms or obligations are prescribed. This section aims to:

1) Confront the reader with concrete situations in which AI is deployed, and 2) Bring the reader to reflect on the ethical implication of the application of AI. Each scenario includes three elements:

1.   A scenario intended to be read collectively or individually;

2.   A set of questions to initiate and enrich the discussion;

3.   A drawing composed of four labels.
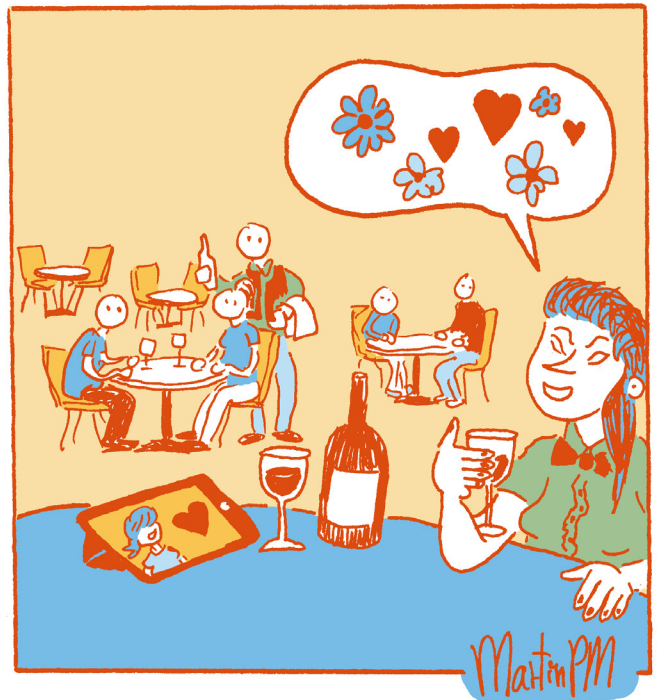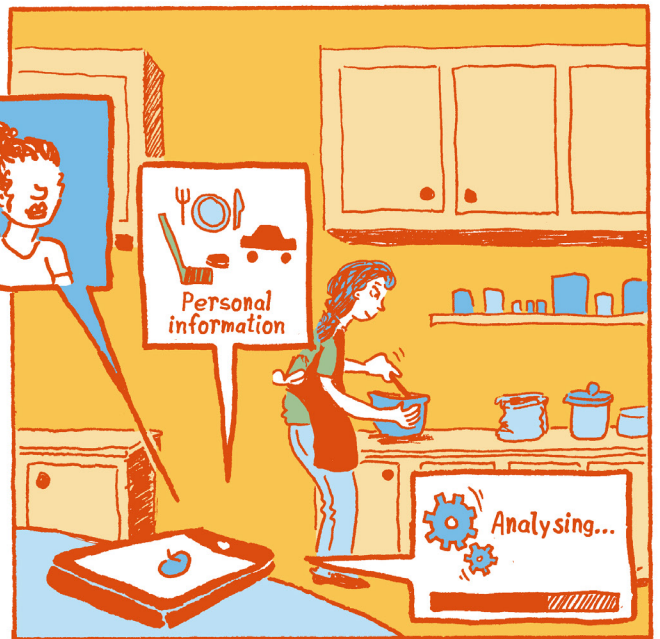
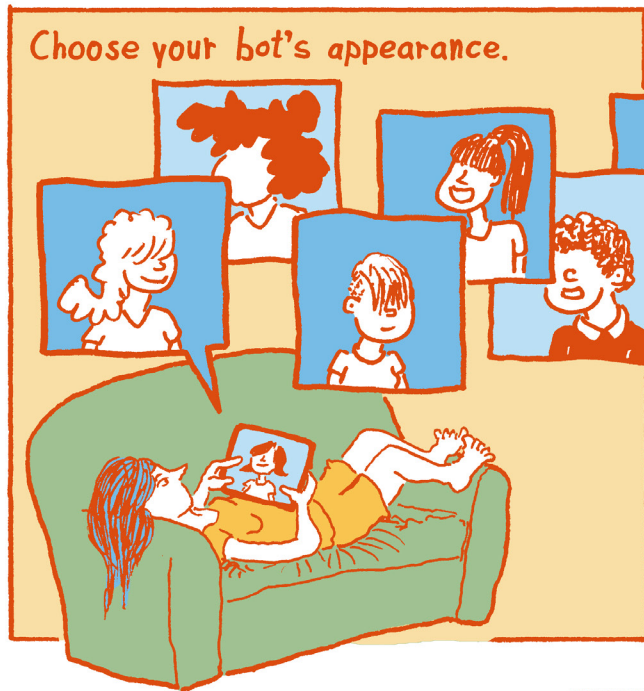# Ecological Transition, AI and Territories

To maximise the supply of natural wind energy and to provide electricity to meet the growing needs of the largest centers of Quebec and Newfoundland, a private/public partnership was created, bringing together the government of Quebec, Hydro Quebec and the counselling firm Enervent. The counselling firm Enervent has designed an artificial intelligence system (AIS) programmed to work with satellite information (atmosphere, currents, temperature, humidity). The AIS, intended for optimization and decision-making, has located an area in the Côte-Nord region of Quebec, near the Labrador border, where a very big wind farm is to be built. The land survey has begun in the area. However, the site is in the heart of ancestral Innu territory. Leaders from this First Nations' community question the implementation of such a project on their hunting and fishing grounds. Yet, within the community, many young Innus, some of whom practice a vegan lifestyle, wish that their community follow the recommendations of the system in order to participate in the efforts to save the planet.

Questions

▶ Did the AIS overlook certain parameters in its process? If you believe so, what are these parameters?

▶ Must an informed decision always be considered morally sound?

▶ Must an algorithmic decision be final?

▶ How can we use AIS in the decision-making process?

▶ What aspect should we favour in the fight against climate change?

▶ How may we combine legitimacy and efficiency in a decision?
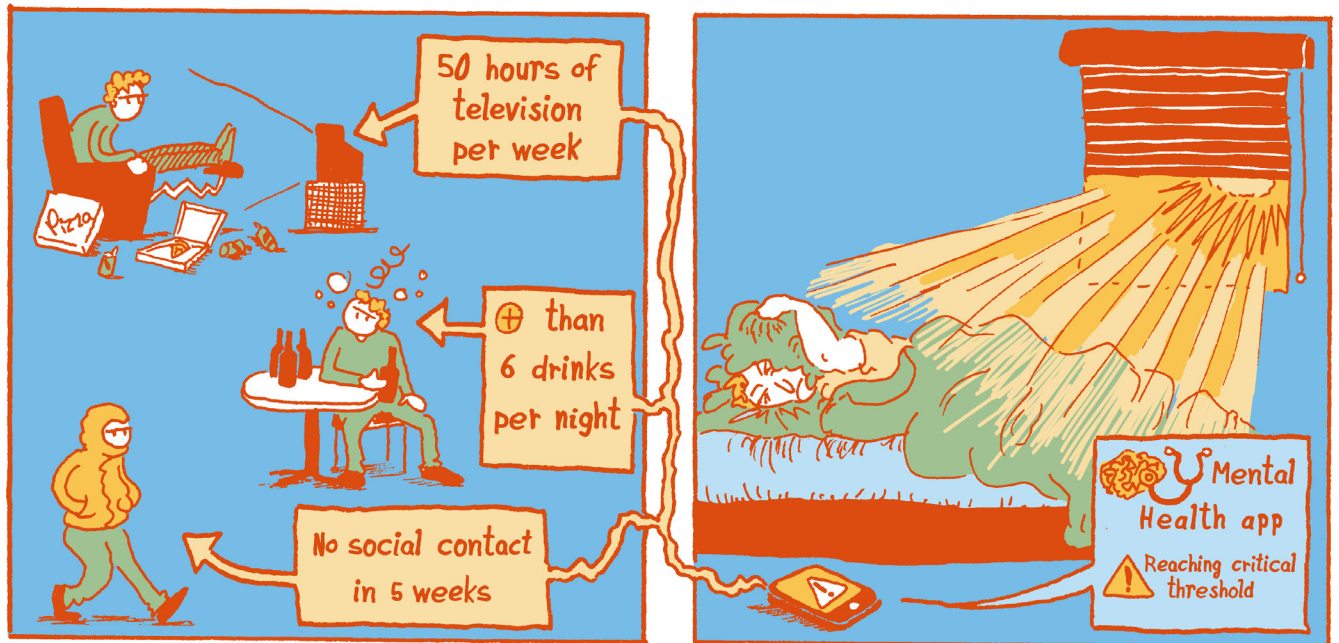
Intimacy and Love With a Bot

Adeline is a 26-year-old nurse who is very busy with her work. In fact, all her time and energy are invested in her job. Consequently, she lacks the time to search for love. A friend advises her to download a dating app. While browsing through the numerous applications out there, she stumbles upon *Eureka,* an application operated by an artificial intelligence system, which creates the perfect partner from a set of personal information. Starting from a series of desires and personal information, such as sexual orientation and general preferences (musical, culinary, fashion, intellectual, hobbies, cultural, etc.), the AIS builds the appearance, personality and identity of a virtual soulmate. To do so, it has access to a database of statistically durable and functional couples. Hence, thanks to Eureka, lonely people can converse with a bot about activities and subjects that they find interesting.

While cooking, Adeline gets a notification on her phone. After having collected and analyzed all the relevant information, the app informs Adeline that her ideal partner is called Ylis. Overwhelmed by the idea of meeting her soulmate, Adeline immediately begins a conversation with her ideal woman. A few weeks later, Adeline swears solely by Ylis and engages in all her activities with her virtual soulmate, including those most intimate.

Questions

▶ Could we imagine a world in which artificial love relationships could be acceptable and encouraged, or even healthy?

▶ Should we encourage, first and foremost, human love relationships?

▶ Can an AI mimic the behaviour of a human lover?

▶ Did Adeline find love with Ylis?

▶ Should love relationships be evaluated according to objective criteria, as well as according to a rational success model?

Mental Health, Prevention and AI

David is 35, lives alone and uses the app Sovie which allows one to monitor one's mental health. David was curious about the app, so he decided to download it to his phone. Sovie collects various information, such as medication, diagnosed disorders, medical records, regular physical activities, daily teleworking activity, sleep time, meals, time spent for online entertainment and socialization, web browsing and viewing of online programming. With the use of high-performance algorithms, the app can assign a mood level and depression tendency to the user. Then, when necessary, the app alerts the user's contacts as well as suicide prevention help lines.

Lately, David has been feeling the need to seclude and has been ignoring the notifications sent by Sovie. A few days later, Sovie sends out an alert concerning David's mental health to many of his friends as well and the suicide help line *SOS Suicide.* They decide to pay him a visit, leaving David perplexed.
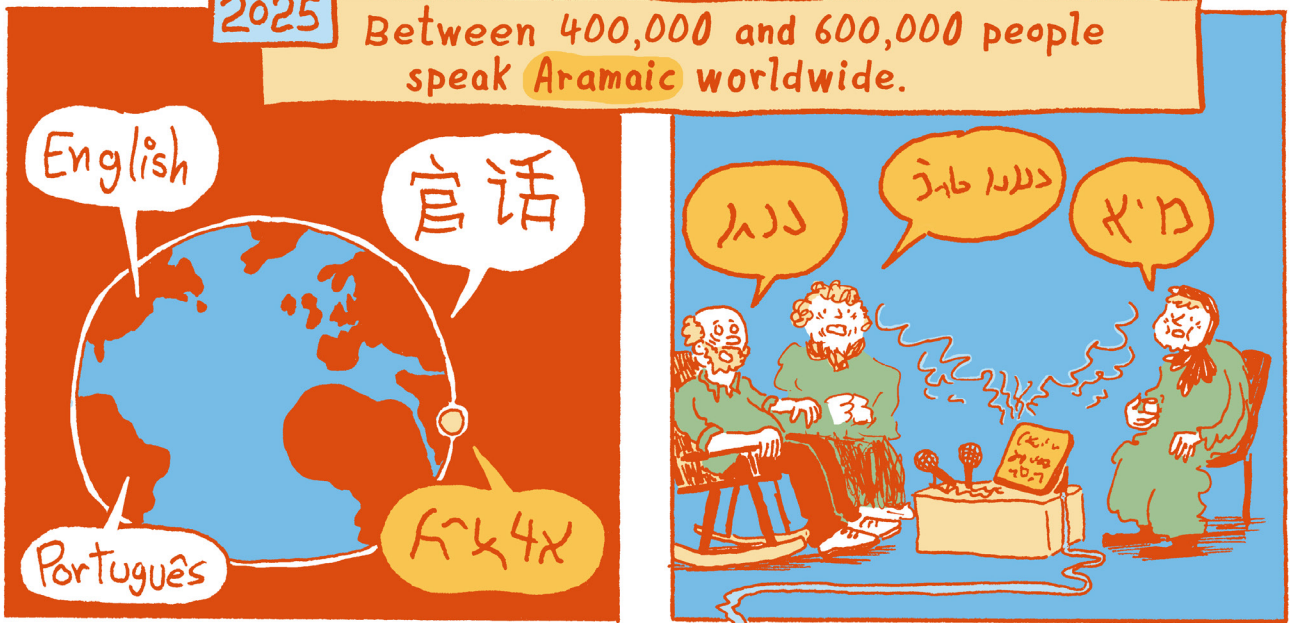
Questions

▶ While attempting to save human lives, does Sovie violate the privacy of its users?

▶ How is it possible to prevent suicide and protect the privacy of individuals?

▶ What role should suicide help lines play in the management of the application.

▶ Should the user be given the choice of sending alerts out to other people?

▶ Could we use the data collected by Sovie for research on mental health? And, if so, would this research be morally and socially acceptable?

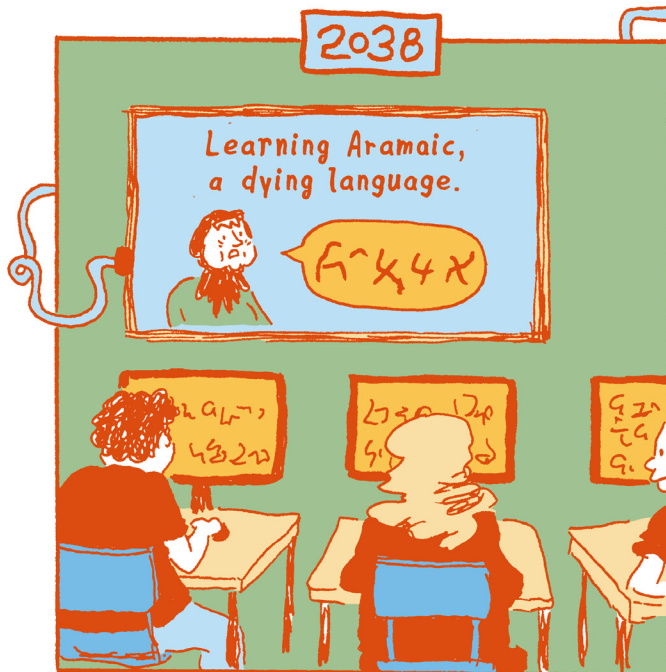# Culture, Inclusion and Protection of Minority Languages

Aramaic is a language spoken in western Asia, from Abkhazia to Yemen. It is used by isolated ethnic Christian and Jewish communities. It was considered one of the most important languages and was the main written language in the Middle East up until 650 AD. The Hebraic and Arabic alphabets are both derived from the Aramaic alphabet. Yet today, Aramaic is at risk of disappearing. The globalization of trade and information technologies seems to accelerate the vanishing of languages used by smaller ethnic groups. To confront this alarming situation, UNESCO is initiating the Living Languages project, which consists of developing an AIS designed to help preserve the language and culture of these minorities. To do so, a web interface converses with both elders and leaders of these declining groups and builds an archive of their discourse, tales, legends, stories and oral traditions. Through another interface their language and culture are passed down to younger generations through conversation in a playful or educational fashion. Despite having been used for almost 20 years with Aramaic children, the project failed to yield the desired results. Merely one generation later and the Aramaic language has been relegated to the museum of dead languages. Experts in the fields of sociology, anthropology and ethnology are left inquiring: who is to blame?

Questions

► What level of responsibility would AI have in the preservation of declining languages?

► What level of responsibility would AI have in the vanishing of declining languages?

► How could AI serve in the preservation of minority cultures?

► Must we intervene to maintain a living language? And, if so, should AI be part of the solution?

► Could the lack of a human interface contribute to the vanishing of a language?

Learning to Lead a Deliberative Workshop

One of the goals of the *Ethics and Artificial Intelligence in Higher Education: For the Development of Responsible AI With And Beyond the Montreal Declaration* project, is to prepare students to face the issues linked to the uses of AI, and ultimately, to undertake actions in their respective fields. To achieve this goal, teachers are invited to host deliberative workshops to lead students to discuss the ethical issues surrounding AI. The following section is mainly intended for teachers and aims at presenting the methodology of co-creation and the principles to observe while hosting a deliberative workshop.

Host's guide

Take off toward deliberation

Preparing for the journey

Visualizing the public

knowing the steps

Anticipating difficulties and questions

Leading: orienting and guiding

Giving clear instructions

Maintaining order

Reminding the objectives

Supporting autonomy in the journey

Reformulating and reviving

Guaranteeing full comprehension

Facilitating and mediating

Landing: returning home with what we gain from the journey

Summarizing the progress made...

Click!

...consensus, compromise, divergence

Paths to pursue

Martin M

What is intended by `deliberation` is a debate-style discussion between several individuals aimed at a collective decision. In other words, we deliberate when we wish to take an enlightened and justified group decision. Deliberation is not merely a discussion; it must be guided by argumentation and rationality. For a deliberation to succeed, the host's role is crucial. Indeed, the host must accompany the group and assure that the deliberation runs smoothly. He or she must be the maestro of the deliberation.
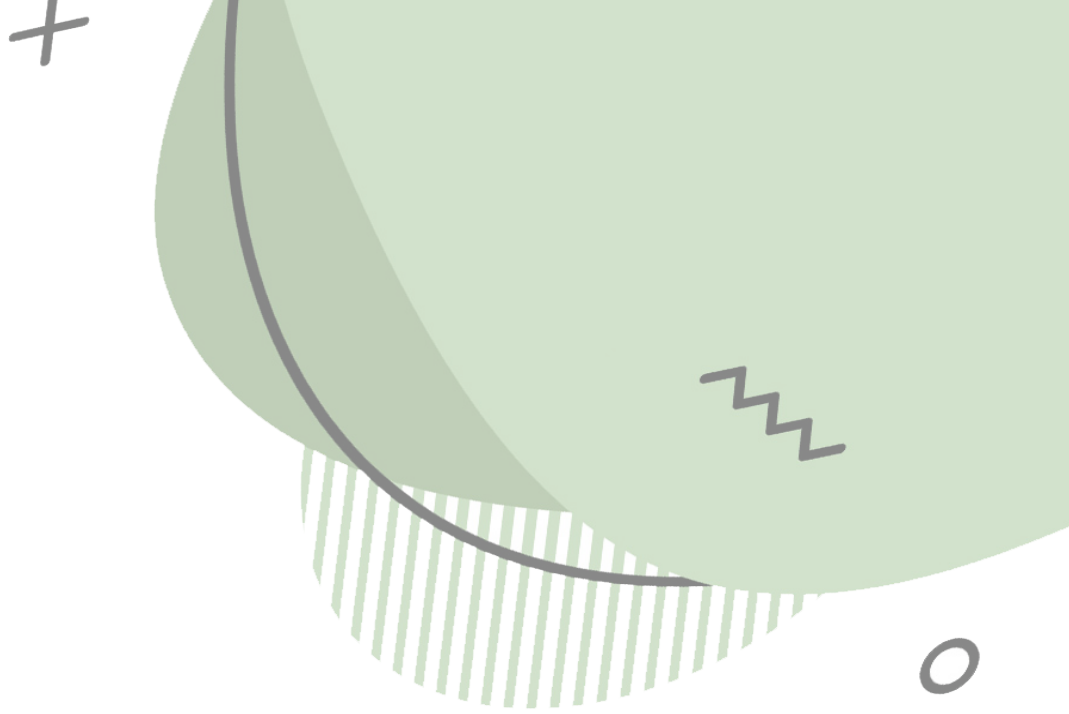
> **Deliberation**
> Method of reasoned discussion through an exchange of arguments aimed at reaching a collective decision. It does not necessarily aim at reaching a consensus, but rather identifying preferences and shared formulations.

The Host's Role

The host must make sure that all participants fully understand the rules of the deliberation, namely, mutual respect, active listening and debating in good faith. The host must promote the participants' autonomy by encouraging them to formulate informed arguments rather than mere opinions, which are not preferred in deliberation, even though they may be widely accepted. The host must not favour any participant over others: each voice counts. The host must guide the group's rational thought process. He or she must see that a collective thought emerges which will lead to a collective decision.

Host Qualities

The host listens to the participants. He or she is attentive to the different arguments raised during the deliberation. The host is accommodating when disagreements arise, for participants do not always share the same views on every subject. The host is not a participant in the deliberation. In other words, the host must remain impartial and refrain from sharing their point of view with the group. Finally, the host is the timekeeper. Time flies... He or she must make sure not to fall behind during any of the stages of the deliberation.

Conditions for a Good Deliberation

The workshop must include at least 8 to 10 participants to allow deep and lively exchanges. Ideally, a workshop should take place at a round table to encourage discussion. A deliberation workshop can last between 3 to 6 hours depending upon the educational goals and the ascribed time for the class.

Co-creation Workshop Steps and Deliverables

The deliberation as a co-creation strategy can be divided into two main moments: firstly, identifying the main ethical issues; secondly, the formulation of public policy recommendations. At each one of these stages, the group must produce different deliverables. Moreover, every deliberation workshop starts with the reading of a scenario, which allows the participants to project themselves in the future and opens the field of possibilities. The scenario presents a potential use of AI in a specific field similar to the four scenarios presented above.

First Step and First Objective: Identifying the Main Ethical Issues at play in the Scenario

Task: This first step aims to identify and hierarchize three main ethical issues for the group regarding the scenario. Hence, the group will be required to choose three issues from the list below, for example privacy, transparency and solidarity. Note that this list is not exhaustive.

Instructions: This stage can last 1.5 hr (for a 3 hr workshop) or 3 hr (for a 6 hr workshop).
Deliverables: A list of three ethical issues along with a justification of the group's choices.

Examples of Ethical Issues

Second Step and Second Objective: Suggesting Concrete Actions to Address the Issues Raised by the Scenario
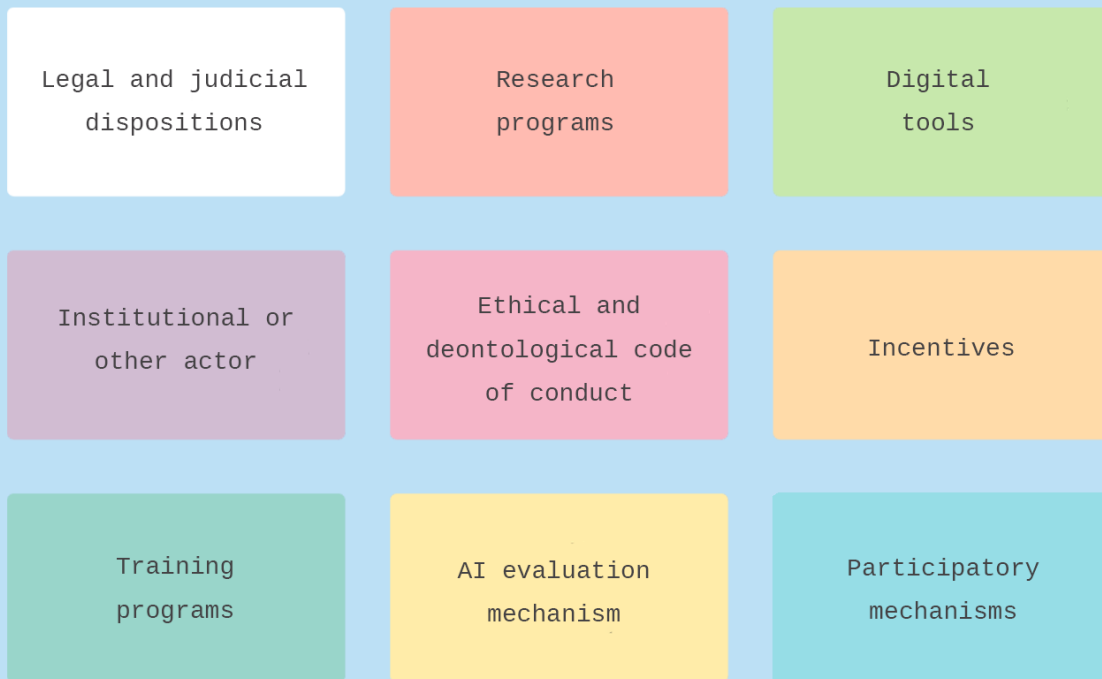
Task: The second stage of the deliberation consists, always as a group, of formulating recommendations for public policies that meet the needs of the issues raised in the scenario. At this stage we formulate the main lines of the recommended public policies as a group, finding inspiration from the categories suggested below. The group must justify its choices.
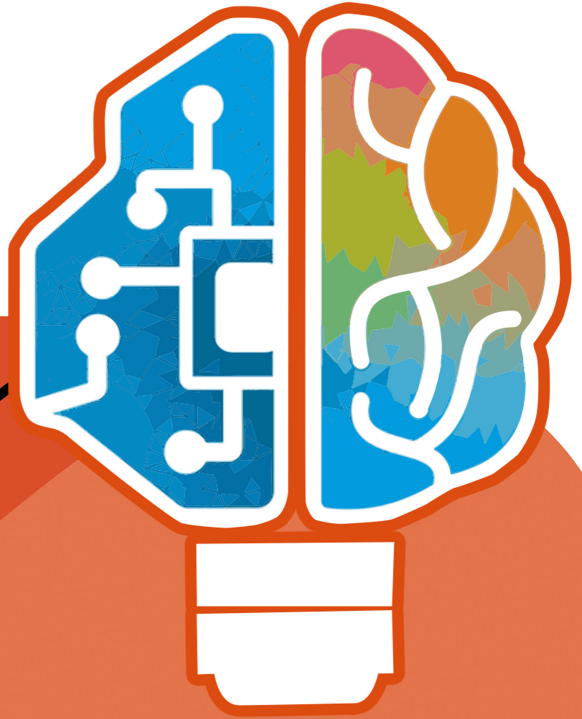
For example: the creation of a consulting committee, the implementation of training programs or the elaboration of a legislative bill.

Instructions: This stage can last 1.5 hr (for 3 hr a workshop) or 3 hr (for a 6 hr workshop).

Deliverables: Three public policy recommendations and their justification.

Public Policy Recommendation Categories

Legal and judicial dispositions	Research programs	Digital tools
Institutional or other actor	Ethical and deontological code of conduct	Incentives
Training programs	AI evaluation mechanism	Participatory mechanisms

You now have a variety of tools to address the ethical issues pertaining to AI and to host a deliberative experience in class.

We wish you a good deliberation!

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Credits

Authors:
- **AUGER, Christian**
  Professor of philosophy— Collège de Rosemont
- **BOUCHARD, Danny**
  Professor of philosophy—Collège de Rosemont
- **DILHAC, Marc-Antoine**
  Professor of philosophy—Université de Montréal
  Director—Algora Lab, Université de Montréal
- **LEMOYNE-DESSAINT, Sophie**
  Student services counselor, CLAP —Collège de Rosemont
- **NOISEAU, Pauline**
  Coordinator—Algora Lab, Université de Montréal
- **NORMAND, Louis**
  Academic advisor—Collège de Rosemont

In collaboration with:
- **CHAMLIAN, Nathalie**
  Academic advisor, Centre de pédagogie universitaire—Université de Montréal
- **LANTEIGNE, Camylle**
  Researcher in ethics and governance of AI— Algora Lab, Université de Montréal
- **MÖRCH, Carl Maria**
  Researcher—Université libre de Bruxelle,
  Associate researcher—Algora Lab, Université de Montréal,
  Associate professor—Université de Montréal

Graphic design
- **GIROUX, Andie**

Illustrations
- **PATENAUDE-MONETTE, Martin**

Translation
- **ALARIE, Stephane**

Layout
- **HAMELIN, Benoit**