Futures, ethics, and opportunities for public algorithms

A speculative exploration

DESIGN FRICTION

& etalab gouv.fr

Futures, ethics and opportunities for public algorithms

A speculative exploration

By Design Friction
For Etalab
As part of Nos Algorithmes initiative
June 2021 - Licensed under CC BY-SA 3.0

TABLE OF CONTENTS

FOREWORD

Questioning public algorithms ethics and opportunities to guarantee their mission of general interest, today and tomorrow.

When to implement an algorithm?

Why choose an algorithm instead of other measures?

Is the algorithm a solution or an ignored issue?

These are the starting points of this speculative exploration which aims at questioning the myths and fantasies behind those systems as much as opening perspectives on their futures. The common thread: a critical and prospective reflection on the ethical opportuneness that would condition the implementation of public algorithms.

This publication is thought of as a base of projection and reflection. It presents a series of six speculative scenarios materialised with design fictions. Those stories jump into the future and the possible. They are simultaneously invitations to futurist and reflexive thinking and benevolent provocations.

Thus six futures, to think differently about public algorithms, to go beyond technocentric logics and to question its *raison d'être*.

Four speculation angles structure this exploration:

— Making public algorithms visible
— Documenting opportuneness and rewriting History
— Avoiding, altering or unmaking public algorithms
— Algorithms opportunities and ethics in time of crisis

METHODOLOGY

Speculative futures and design fiction
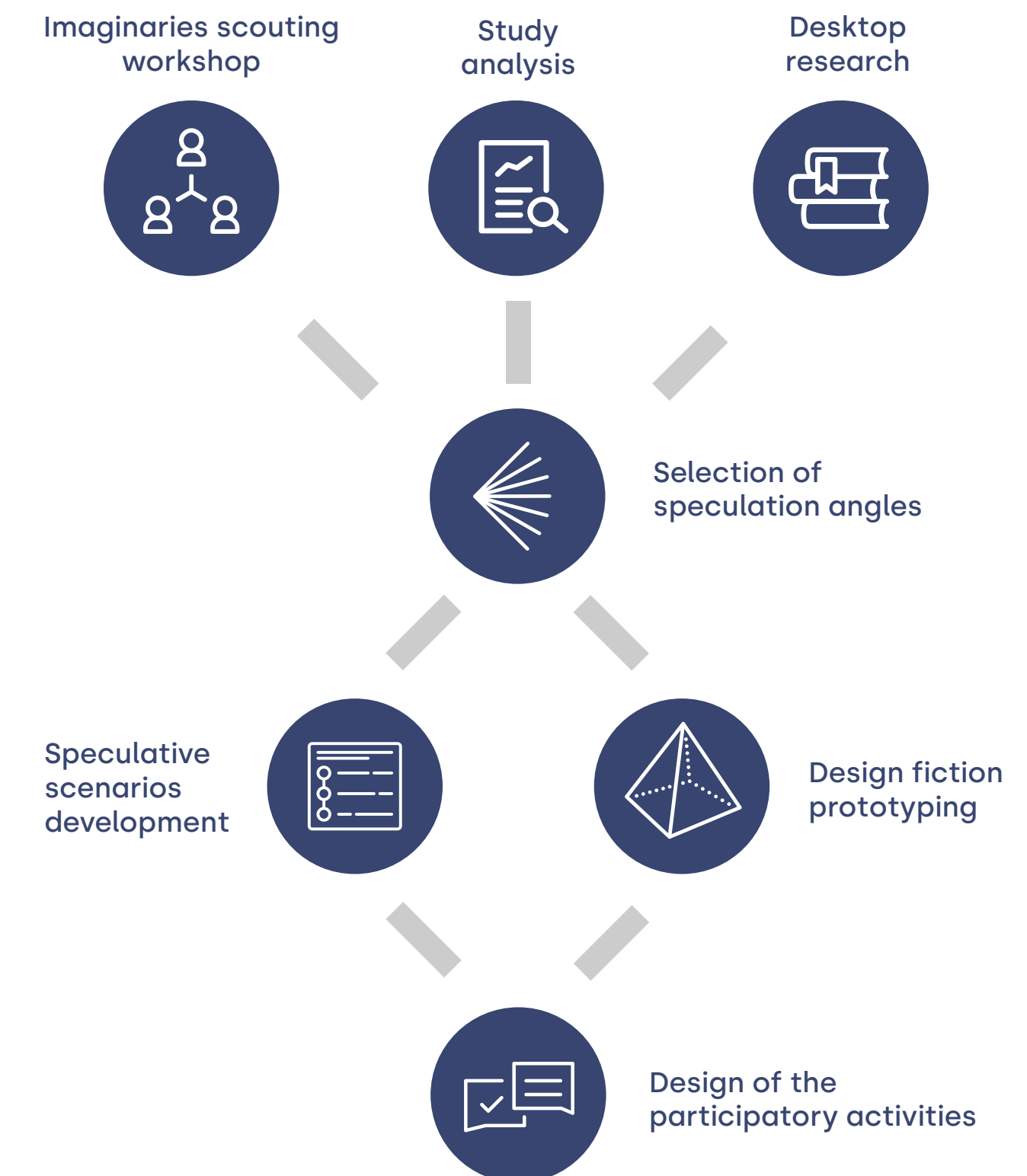
Scouting imaginaries...

This exploration started with a study and an online workshop that took place during the Public Innovation Month in November 2020. The aim of this first phase was to scout the imaginaries surrounding public algorithms. It has allowed us to identify and understand the representations and assumptions that live within those who build or decide to implement these systems. With over a hundred contributions, the study and the workshop helped inspire and frame the speculative futures presented in this publication.

... to explore futures

To imagine and tell possible futures, the process relied on a design fiction approach. Design fiction envisions fictional products, spaces or services that show and make possible futures experienceable in a critical and engaging way.

Each design fiction scenario is embodied through one or several *provotypes* (provoking prototypes). Those different speculative artefacts highlight the issues, unthought consequences and stakes of the ethics of public algorithms.

Process overview:

Imaginaries scouting workshop

Study analysis

Desktop research

Selection of speculation angles

Speculative scenarios development

Design fiction prototyping

Design of the participatory activities

ABOUT THESE SPECULATIVE SCENARIOS

What these scenarios are:

— Possible speculations

— Supports for projection, discussion and decision

— Inspiring-but-disturbing perspectives

— France-centred stories

— Narrative bases to be augmented and/or disputed

What these scenarios are not:

— Utopias nor dystopias

— Predictions about what the future will be

— Prescriptions about what the future should be

— A visionary roadmap or a hidden agenda

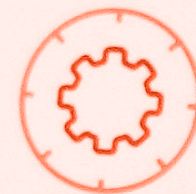— Guidelines for public algorithms ethics

DISCOVER
THESE FUTURES

MAKING PUBLIC ALGORITHMS VISIBLE

Humanity tokens

Your humanity tokens available for 2026

Available from 01/01/2026 to 31/12/2026

25 Machine Tokens

15 Human Tokens

The volume and distribution of the tokens have been established according to your interaction history with the public administration and to the preferences of use you have reported.

What are my tokens used for?

Personalise your experience with the administration to fit you.

For any administrative procedure, choose when **to get human's attention and care** and when **to profit from an algorithm's responsiveness.**

Did you know?
The 'Humanity tokens' name was voted for by more than 12,000 French people during a 2023 consultation.

How to use my tokens?

1. For an online procedure:
Select the ⚙ **button** to discover and customise your administrative procedure.

For an on-site procedure:
Tell the public servant your preferences and let them guide you.

2. **Discover the steps** forming the administrative procedure.

3. **Customise certain steps** by using your humanity tokens:
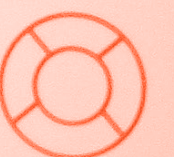Add a **Human** token 👤 to discuss or get the support of a person.
Add a **Machine** token ⚙ for your request to be processed by an algorithm.

4. **Track your token use** from your FranceConnect dashboard or with a **TousNumériques advisor** near you.

Need help?
The toll-free number **0 800 404 000** gets you in touch with a TousNumériques advisor ready to help you.

Humanity tokens

Horizon 2025

In 2026, algorithms and artificial intelligence have taken off in public administrations. To make them visible is to implicitly reveal where the human is.

Before starting their administrative procedures, the user can now visualise their request process. In a transparency logic supported by the state, they thus discover which steps are carried out by humans or by machines, be it algorithms or artificial intelligence.

Users can reconfigure this administrative process using *'humanity tokens'*. Those tokens allow to adjust human and machine involvement for each of its steps. In other words, it is possible to assign the humanity or the algorithmic portion for each stage of the process.

Each user gets a limited number of *'Human'* and *'Machine'* tokens each year. This number is defined according to their profile, whether they are identified as digitally literate or whether they experience issues with the digital realm.

Design fictions illustrating this future:

— **The humanity tokens annual statement**

— **The setup of an administrative procedure with one's tokens**

DISCOVER THE DESIGN FICTIONS

Your humanity tokens available for 2026

Available from 01/01/2026 to 31/12/2026

25 Machine Tokens

15 Human Tokens

The volume and distribution of the tokens have been established according to your interaction history with the public administration and to the preferences of use you have reported.

What are my tokens used for?

Personalise your experience with the administration to fit you.

For any administrative procedure, choose when **to get human's attention and care** and when **to profit from an algorithm's responsiveness.**

Did you know?
The 'Humanity tokens' name was voted for by more than 12,000 French people during a 2023 consultation.

How to use my tokens?

1. For an online procedure:
Select the ⚙ **button** to discover and customise your administrative procedure.

For an on-site procedure:
Tell the public servant your preferences and let them guide you.

2. **Discover the steps** forming the administrative procedure.

3. **Customise certain steps** by using your *humanity tokens:*

Add a Human token 👤 to discuss or get the support of a person.

Add a Machine token ⚙ for your request to be processed by an algorithm.

4. **Track your token use** from your FranceConnect dashboard or with a **TousNumériques advisor** near you.

Need help?
The toll-free number **0 800 404 000** gets you in touch with a TousNumériques advisor ready to help you.

The humanity tokens annual statement

(Cover)

Frequently asked questions, transparent answers

Why is my token number limited?

So everyone gets a chance to enjoy the personalisation of their administrative procedures. And doing so, without degrading the public service quality.

Can I reload my tokens throughout the year?

This is not possible, for the same reasons that the number of tokens per person is limited.

What happens once all my tokens have been used?

You won't be able to personalise your administrative procedures anymore.
They will be processed in the default way.

The Lab tests for you

An even more customisable administration?
We are beta testing the option for you to:
1. Let the administration process the available data about you.
2. Add yourself the data that will be used by the public services you request.

RÉPUBLIQUE
FRANÇAISE
Liberté
Égalité
Fraternité
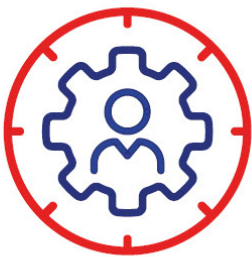
Sarah,
your **humanity tokens**
annual statement
for **2026**

An initiative by   **Interadministration committee for public digitalisation**

The humanity tokens annual statement

(Internal pages)

Your humanity tokens available for 2026

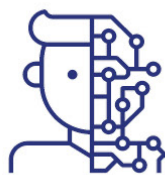Available from 01/01/2026 to 31/12/2026

25 Machine Tokens

15 Human Tokens

The volume and distribution of the tokens have been established according to your interaction history with the public administration and to the preferences of use you have reported.

What are my tokens used for?

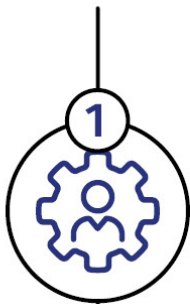**Personalise your experience** with the administration to fit you.

For any administrative procedure, choose when **to get human's attention and care** and when **to profit from an algorithm's responsiveness**.

Did you know?
The *'Humanity tokens'* name was voted for by more than 12,000 French people during a 2023 consultation.

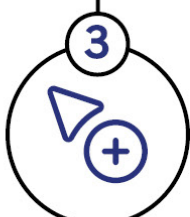## How to use my tokens?

1

For an online procedure:
Select the ⚙ **button** to discover and customise your administrative procedure.

For an on-site procedure:
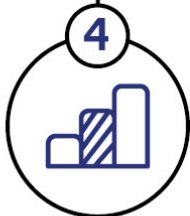Tell the public servant your preferences and let them guide you.

2

Discover the steps forming the administrative procedure.

3

Customise certain steps by using your *humanity tokens*:

Add a **Human** token to discuss or get the support of a person.
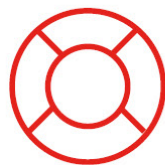
Add a **Machine** token for your request to be processed by an algorithm.

4

Track your token use from your FranceConnect dashboard or with a **TousNumériques advisor** near you.

Need help?
The toll-free number **0 800 404 000** gets you in touch with a TousNumériques advisor ready to help you.

The setup of an administrative procedure with one's tokens

Screen 1

Your request for environmental housing subsidies

You'll find below the default steps to process your request.
You can change the processing mode for each step according to your preferences.

Steps

Documents validation
The documents you've provided are verified in order to make sure they correspond to the request of the administration.
> Show the documents list

Customise with a token

Subsidies amount calculation
The subsidies amount you can receive depends on your situation as described in your file.
> Show the documents list

Customise with a token

Subsidies amount checking
To be sure of the accuracy of the subsidies you'll receive, the previously calculated amount is systematically checked.

Customise with a token

Notification of the request answer
You'll receive the decision by email to the address you've filled in your preference.

Customise with a token

Your procedure should be processed by 11/07/2026

Confirm my procedure

Screen 2

8/25
9/25
0/15
1/15

Your request for environmental housing subsidies
Request made on 21/06/2026

Steps   1/4

Documents validation
> More information

0 jeton

Subsidies amount calculation
> More information

1 jeton

Subsidies amount checking
> More information

1 jeton

Notification of the request answer
> More information

0 jeton

Your procedure should be processed by 28/07/2026

MAKING PUBLIC ALGORITHMS VISIBLE

Plurialgorithmics

C 🏠 🔒 https://solidarites.sud/demarches

REGION SUD
PROVENCE
ALPES
CÔTE D'AZUR

Preparing your request for social assistance

The law related to public plurialgorithms allows you to choose the algorithm that will process your request. Each of the suggested algorithms complies with general interest requirements and has been certified by e

Select the algorithm that will process your request:

Mistralgo

Developed by **Marianne H.**

Last update: **37 days ago**.

Specificities for this algorithm :
> **Co-design by the community.**
> **Migitation of validist biases.**
> **Recognising citizens' transidentity.**

Select this algorithm ›

Orion

Developed by
NGO Ellières

🔍 Discover

Select ›

Trace3:

Devel
Écor raiso

🔍 Di

Se

See more
⌄

📖 **How to choose the right algorithm?** Don't hesitate to read the related guide

Plurialgorithmics

Horizon 2035

The 2030s see the advent of a French society more profoundly transformed than it seems. The personalisation of experiences, the rise of communities and the search for social justice are at the heart of public innovation.

In this specific context appears the public plurialgorithmics law, supported by an empathetic State, rather than strategic. Plurialgorithmics is a radical shift: for the same public action or decision, there is no more one, but a multitude of algorithms adapted to the different publics that may be affected or impacted.

Each and every one can choose their algorithmic regime, according to their community, their profile, even discrimination they may consider suffering from. Each algorithm behaves differently depending on the user's profile and adapts its calculation mode according to matters of gender, ethnic group, sexual orientation, citizenship status or even handicap. If the modes of calculation and of decision are different from one person to the other, public services, however, stay available to everyone.

The stake is now to choose the *'good'* system: a public algorithm is now presented under all its variations so that the user can choose the most appropriate one in regard to their personal situation. As a mirroring effect, the algorithm – now plural – makes visible the necessity to adapt and deconstruct some public measures in front of the inherent difficulties met by the communities using them.

It is important to note that many algorithms are co-designed with members of the communities in which they will be used. They are improved afterwards, thanks to data coming from the usage, the user profiles and the context of use that the community accepts to provide.

Questions related to the opportuneness of putting in place an algorithm have profoundly evolved: we don't ponder about when to implement an algorithm for a public service, but about when to develop hundreds of different algorithms for the same public action. It goes without saying that substantial means have been used to answer this challenge.

Plurialgorithmics

With no surprise, the plurialgorithmics shift creates controversies: its detractors see in it the end of equity and universalism proper to France. According to the same criticisms, the rupture is acknowledged with the republican dogma of the nation's indivisibility.
In response, the plurialgorithmics advocates highlight that this universalism offered through algorithms is a carrier of oppression and discrimination because it is - by design - aligned with the interests of the powerful ones.

Over the years, this variable geometry gradually instils until it gets called for by public administrations and services themselves. Indeed, civil servants are bothered with using *'monolithic'* algorithms that disregard disparities between territories.

The design fiction illustrating this future:

— **The selection screen for an algorithm to obtain social welfare**

https://solidarites.sud/demarches

Preparing your request for social assistance

Your services   Your documents   Your profile

The law related to public plurialgorithms allows you to choose the algorithm that will process your request.
Each of the suggested algorithms complies with general interest requirements and has been certified by etalab.

? What is an algorithm?

Select the algorithm that will process your request:

Mistralgo

Developed by **Marianne H.**

Last update: **37 days ago**.

Specificities for this algorithm :
> **Co-design by the community.**
> **Migitation of validist biases.**
> **Recognising citizens' transidentity.**

Select this algorithm >

Orion

Developed by
NGO Ellières

🔍 Discover

Select >

Trace3.1

Developed by
Économistes raisonnés

🔍 Discover

Select >

Sudlidaire

Developed by
La Région Sud

🔍 Discover

Select >

See more
⌄

📖 **How to choose the right algorithm?** Don't hesitate to read the related guide from the NGO 70 Million Users   >

DOCUMENTING OPPORTUNENESS
AND REMAKING HISTORY

Archaeology and historiography of public algorithms

Remise de rapport
Mercredi 23 Octobre 2030

Mission interadministration
d'archéo-algorithmie publique

Archaeology and historiography of public algorithms

Horizon 2030

In the early 2030s, the professions of history have never been so topical. Historians work with public administrations in doing public algorithms archaeology. Those inquiries are far more than just a dive into code strata.

The stake is to understand what conditioned the implementation of those digital systems several decades ago to better inform the making of tomorrow's algorithms.

The design fiction illustrating this future:

— **An interview with a public algorithms historian and archaeologist**

DISCOVER THE
DESIGN FICTION

Opportuneness stories and historical opportunities

Interview with **Amel Atay,** historian at the interministerial mission for public algorithm archaeology.

— Interviewed by Magan Durieux

For the last twenty years, it has become common to meet sociologists, philosophers or designers in the corridors of French public administrations.

It now includes historians and archaeologists. Far from being only interested in paper archives, their subject of study is the most contemporary of all: algorithms that are ubiquitous in public actions.

Hello Amel, you're a trained historian and you lead the inter-ministerial mission for public algorithm archaeology.

Can you explain to us what entails this mission?

" This might be the most singular mission in the public administration right now. Our goal is to answer an often complex question: why, in this specific case, have we developed and deployed an algorithm or artificial intelligence?

Among the inspiring practices at the start of this mission, there is the practice of software archaeology. In broad terms, this IT methodology is a way to study the implementation and evolution of software. In our case, the process of algorithm archaeology focuses on the decision-making behind an algorithm. We try to trace back the opportunity that brought to build the algorithm in the first place: why was it implemented? What were the conditions in which it was developed? What factors influenced decisions about it? etc.

Today, we are eight investigators of algorithm archaeology within the mission, with primary training in archaeology or history.

Remise de rapport
Mercredi 23 Octobre 2030

Mission interadministration
d'archéo-algorithmie publique

Why is this work of algorithm archaeology important for public administrations?

" With the spread of public algorithms, it seems essential to understand why they work or not. More often than not, the answer lies in the motives and conditions of their implementation.

Part of the answer can be found with a technical audit of the algorithm carried out by developers. It allows us to trace back the life cycle of the algorithm. It is necessary to confront the technical factor with the human one. This is when we, digital historians and archaeologists, enter the scene. We work on cross-referencing our sources to trace back and map what shaped yesterday's choices, so we avoid making tomorrow the mistakes we may have made yesterday. Or, conversely, exhume forgotten good practices!

Public administrations are responsible for the general interest. They have a duty to detect the hints that invite us to make, not make or unmake an algorithm. Our historical inquiry allows them to make the most appropriate decision.

In practice, how does an archaeological inquiry on a public algorithm happen?

" It is first and foremost teamwork! Historians, developers, sociologists and even economists work together.

As a team, we go through the algorithms and learning systems updates strata and try to untangle the legacy code (Editor's note: an old computer code present in an application and that has to be maintained). We establish a chronology to understand what came into play, despite a recurring lack of documentation.

You know, what's funny, no one expects a historian or archaeologist to lead that kind of investigation. But looking at those code remains often gives the same feeling as looking at the vestiges of an ancient civilisation. Everything seems simultaneously muddled and weirdly familiar.

Back to your question, the inquiry protocol depends more on the administration that commissions us, rather than the algorithm itself. It is the field that takes precedence over the subject of study.

There are numerous elements to corroborate to understand why it was deemed appropriate to implement an algorithm. The hardest part is to differentiate which aspects were decisive in influencing a decision or a deployment. Sometimes, the key to the mystery is a political stake, a shared belief, a financial constraint or even biased data coming from another algorithm, which we could question the opportuneness.

It is crucial to gather as much information as possible to succeed. It often happens through interviews with direct witnesses that were there. Most of the research focuses on email exchanges or steering committee reports, more so than on the lines of code themselves. Other parts of the historical research are thornier and require the help of sociologists. It is particularly true when the goal is to identify the values, imaginaries and key events that might have influenced short-term decisions on creating the algorithm.

Once we have grasped the reasons for the opportuneness, we are interested in the development conditions and deployment choices.

We carry on like this until we are sure to deliver a chronology that we judge faithful to the historical facts.

›

" In a way, we go from History to stories. "

— Amel Atay

Reading your job description, we notice an accent on the historiography of public algorithms. What does it mean?

" Historiography is the other side of our mission. We can summarise it as the activity of writing History, of one's time or of a previous period.

In the context of algorithm archaeology, this means two things. First, to take an interest in how the decision to build an algorithm was told at the time of the events. Secondly, to ponder how it will be expressed today, in the light of what was revealed through the historical inquiry.

If my job ends when my findings are delivered, the algorithm archaeology mission continues. And it is just as exciting!

We have an extensive team that includes public archivists, scientific popularisers and authors of science fiction. They seize our conclusions of historians to capitalise for future cases.

Their job is to first tell our findings by showing what really happened. Then, they play the uchronia card to imagine how things could have been different and what kind of change it would have brought (Editor's note: uchronia is a kind of fiction that relies on rewriting the historical chronology by changing one past event).

In a way, we go from History to stories.

The algorithm archaeology process goes against the flow of this instantaneity culture that public administrations struggle to get out of.

What becomes of the long-term investigations conducted as part of your mission?

" For sure, this kind of process needs time. Luckily, it is given to us!

Regarding the use of our research, we sat around the table from the start to ponder how to avoid the *'put-on-the-top-shelf report'* syndrome. Or the *'saved-in-the-deep-cloud report'* as a colleague says.

An example that might be more tangible: two years ago, one of our reports clearly showed the social inefficiency of automated systems to detect social welfare frauds.

Of course, some fraudulent people were identified and *'dealt with'* by administrations. But that was at the cost of many other citizens that saw welfare payments suddenly cut off. Our investigation was clear: in this case, it is not appropriate to use an algorithm. This report was released at the time when several administrations responsible for solidarity missions wished to implement a joint artificial intelligence to, I quote from memory, *'put an end to the abuse of social welfare by doubtful individuals who take advantage of the most effective social security system in Europe at the cost of those who need it the most'*.

The findings of our inquiry dealt a blow to this initiative, questioning the rationale supported by the project leaders. It is a good example of how our historical inquiries impact the present decisions made by administrations. Especially when they are still imbued with a kind of technocracy, even of techno-blissfulness. For the first time, the past undid the future!

I stress out that this work is transparent. All the works of algorithm archaeology research are publicly available, in a spirit of openness. The storytelling I mentioned earlier is part of a broader mediation of our work towards decision-makers, public servants and citizens.

On a side note, I am very proud that those works are finally exhibited at the Museum of Public Algorithms (Editor's Note: opened at Tours in 2029, the Museum of Public Algorithms tells the history of algorithms, from paper forms to the first artificial intelligence).

"Decisive choices often depend on our analysis! „

You just mentioned the deletion of an algorithm and the discontent that followed.

Generally speaking, do you feel exposed to the same controversies as those who carry out more traditional historical inquiries?

" Yes, of course! Frankly, we are also subject to controversy. There can be disagreements or differences between historians about the veracity, and sometimes the interpretation, of the facts. And since the results of the investigations are open, there is bound to be discussed and debated. We sometimes see counter-investigations, presented as citizen-led, reviewing our findings.

To understand what is at stake here, I think it is necessary to examine the criticism.

On one hand, conditioning decisions made today on lessons from the past is not without creating some friction with project leaders and designers that are stuck in their vision of the future. On the other hand, some decision-makers or administrations don't like seeing some decisions and their influencing factors exhumed.

What I'm about to say is my own responsibility, but I notice the surfacing of a kind of revisionism if I may say so. I have in mind at least two administrations, one local and the other one national, which seized our findings to rewrite History to their liking to shift the blame on others in case some failure happens.

Our use of uchronia in our algorithm archaeology process is also often criticised, as it leads us to speculate on what could have been and move away from the facts.

In conclusion, and taking a step back, all of this is healthy, as it is a real responsibility that we must carry. Decisive choices often depend on our analysis!

Discover the retrospective "Our algorithm lives" at the Museum of Public Algorithms (Tours, 37 000), featuring a mediation experience co-created with Amel Atay.

> Information and reservations at museoalgo.fr and ~museoalgo on your assistantials.

DOCUMENTING OPPORTUNENESS
AND REMAKING HISTORY

The Third W.oice

If you think algorithms aren't a binary subject,

Express a third voice,
Show a third way,
Become the Third W.oice! >

Recruitment campaign open to every civil servant, 2027 edition
Information and application: 🖥 **troisieme.gouv.fr**   🎙 **~troisiemeV**

RÉPUBLIQUE
FRANÇAISE
Liberté
Égalité
Fraternité

The Third W.oice

Horizon 2025

Designing and deploying public algorithms is not an easy task. Between injunctions and intuitions, the opportunity to, or not to, implement an algorithm is often at the heart of discussions.

To go beyond this binary vision, each public innovation team includes someone, called the *Third Way/Voice* (or *Third W.oice*), tasked with an exploratory duty. This uncommon profile has to consider all marginal leads of plausible, clashing and non-consensual alternatives that could exist.

The Third W.oice is the embodiment of the disagreement with the status quo that could emerge from decisions made by the team or that could be imposed from the top down. Their (unofficial) motto: *'To do or not to do, that is beside the point!'*.

The duty of the Third Way/Voice specifically aims at identifying what solutions or reappropriations by communities already exist. Where required, the Third W.oice speaks in favour of their adoption, their use or their upkeep by administrations or citizens.

In this respect, this side of their exploration entails to highlight solutions coming from people who are the most affected by the problems to be solved through the considered algorithm.

A wide range of tools are available to inquire, criticise, anticipate or compel their team or their management.

Design fictions illustrating this future:

— A call for applications to recruit new Third W.oices

— Excerpts from the Third W.oices' training

— The Third Way/Voice library

DÉCOUVER THE **DESIGN FICTIONS**

A call for applications to recruit new Third Way/Voice agents

If you think algorithms aren't a binary subject,

Express a third voice,
Show a third way,
Become the Third W.oice! >

Recruitment campaign open to every civil servant, 2027 edition
Information and application: 🖥 **troisieme.gouv.fr** 🎙 **~troisiemeV**

RÉPUBLIQUE
FRANÇAISE
Liberté
Égalité
Fraternité

Excerpts from the Third W.oices' training

As a Third W.oice

YOUR MISSION Exploring the possible, beyond the dichotomy of "implementing / not implementing" an algorithm

YOUR PREROGATIVES

Contesting the statu quo when your team unanimously agrees

Identifying and presenting alternatives, even the most improbables

Spotting what exists under the radar, within the administration and within the civil society

Taking time to think about long-term implications

Excerpts from the Third W.oices' training

A Third W.oice's tools (1/3)

EXPLORE

The Good Ancestor
(Anticipating)
Put yourself in the shoes of the ones who will live in the next 20 or 30 years.

Deconstructor
(Analysing)
Learning to understand and read the code of an algorithm.

SOCIETAL ← → TECHNICAL

Slow Down!
(Taking a step back)
Stopping or extending an algorithm development cycle to reconsider choices.

S'preacher (Hailing)
Amplifying the plea for your ideas.

CONVINCE

A Third W.oice's tools: **The Reframer**

⬡ RETHINK

The Reframer allows to **reconsider an idea or a decision** through another prism.
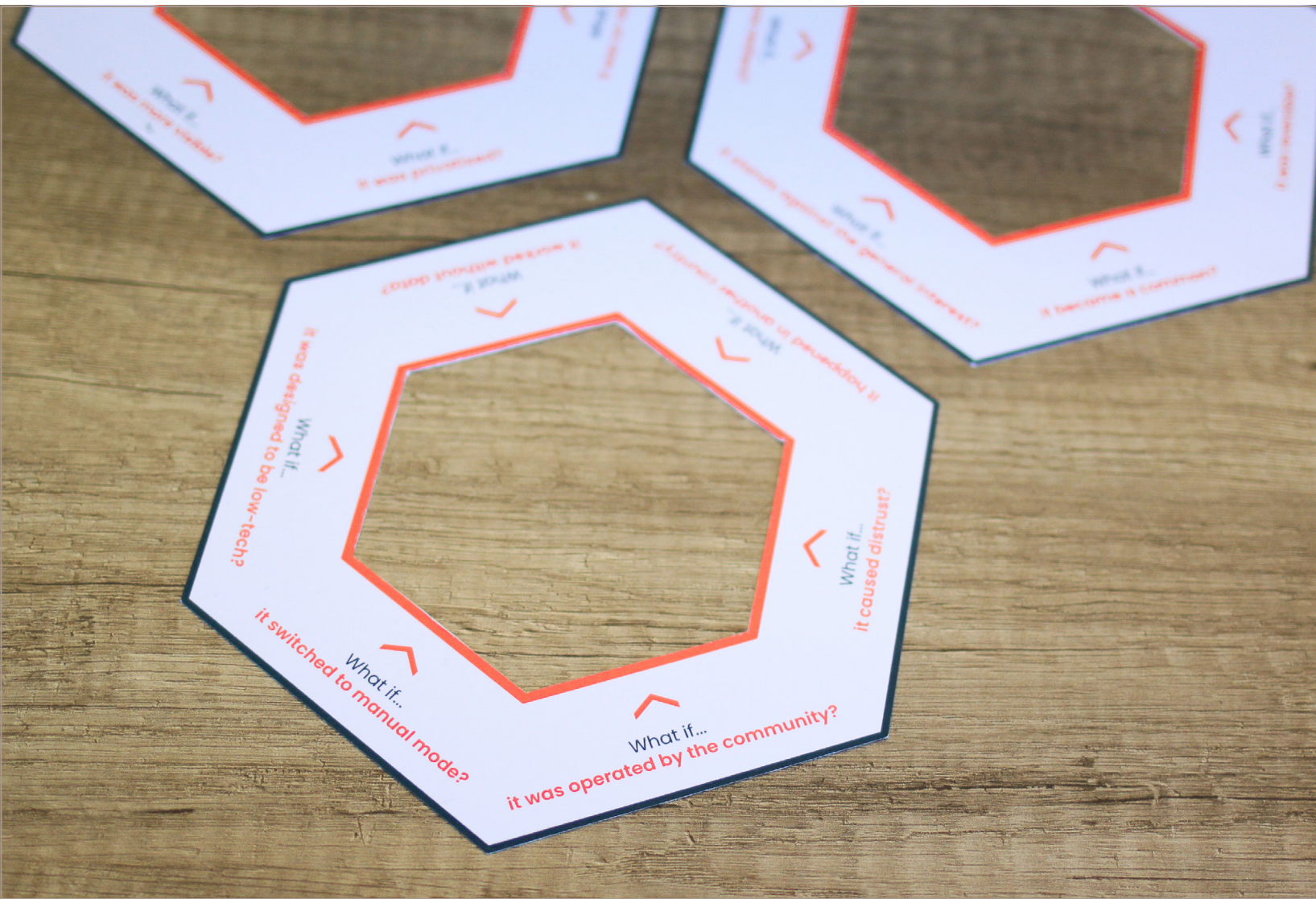
Reframer cards can be **applied to a situation** to reframe your understanding of this case.

The Third Way/
Voice library

The Third Way/Voice Library

Searching for a w.oice

Discover all the third ways and voices through projects and narratives.

The new ways

Manifesto for a solidarity-driven maintenance of existing algorithms
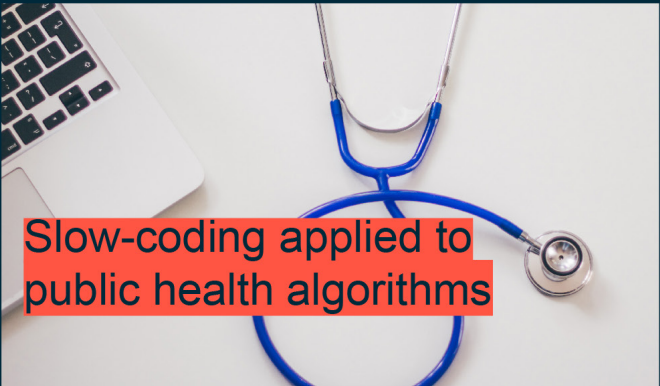
Slow-coding applied to public health algorithms

Micro-targeted taxation: resisting to the temptation of algo-paternalism

On social disengagement: egde case and function creep as a norm

See more >

The radical voices

[Interview] Ada Abadan: algorithms for and by women

Seniors' digital life

Meeting the calculated ones

With civil servants, always

See more >

The byways

[Disabilities] Self-design by affected communities

From laissez-faire to laissez-calculate?

On promoting an existing solution without taking it over

Naval risks: preventing and setting responsibilities rather than algorithmising

AVOIDING, ALTERING OR UNMAKING
PUBLIC ALGORITHMS

Expansion of the contestation field
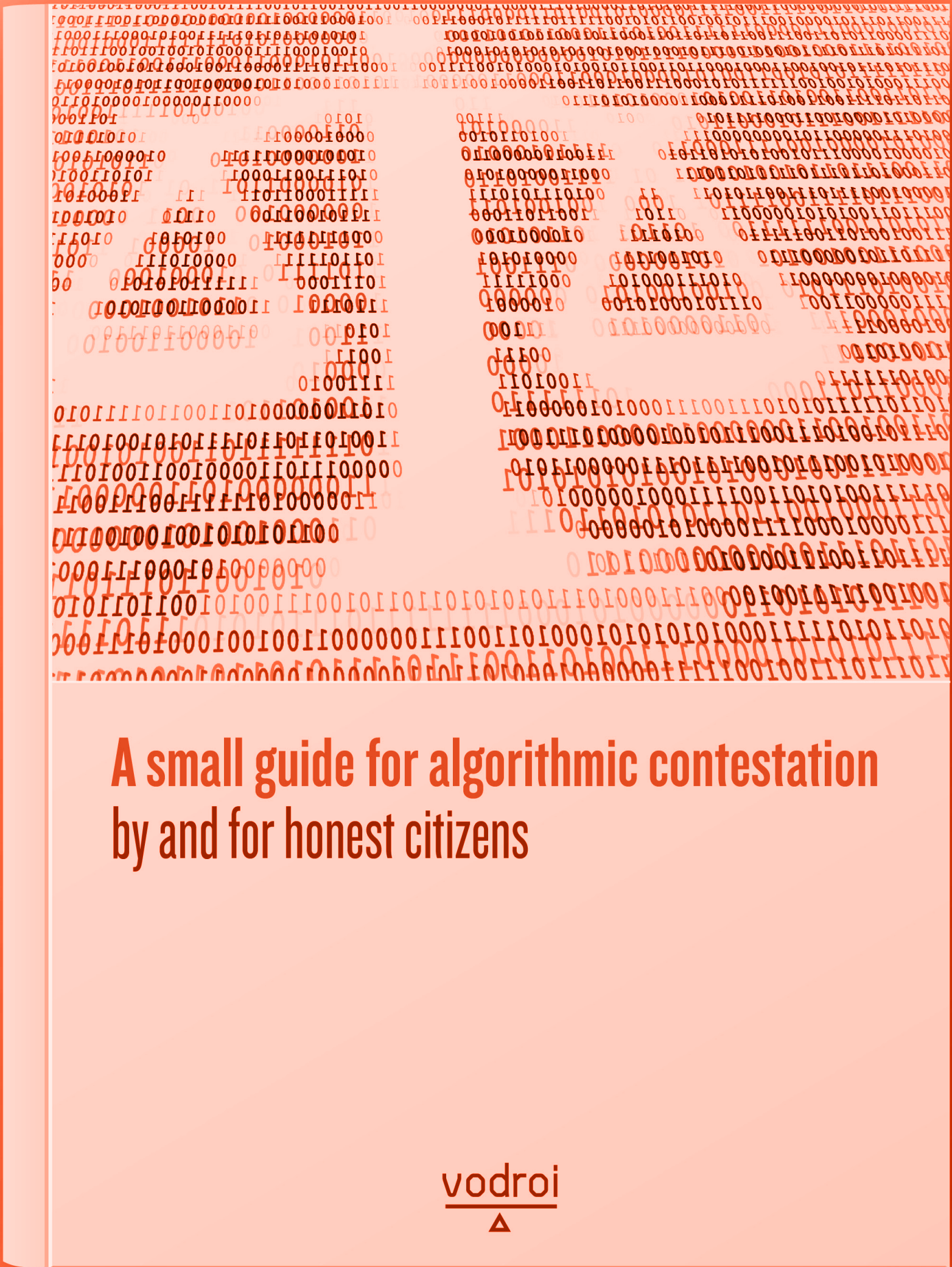
A small guide for algorithmic contestation
by and for honest citizens

vodroi

Contestation made easy for everyone

Public algorithms and AIs,
10 administrative plea cases explained

Didactic diagrams to understand the
administrative procedures to follow

The flaws in algorithmic laws you need
to exploit in your contestation

Victim of an automated injustice:
when to appeal to restorative justice.

↓ **Download for free**

Discover our helpline

Expansion of the contestation field

Horizon 2030

Public algorithms don't escape the all too French passion for its administration. The 2020s and 2030s establish the extension of public algorithms within central government and local authorities because of fiscal austerity.

This double algorithmisation and automatisation of public action necessarily happened together with different solutions and tactics imagined by citizens and public servants alike to avoid, contest or take advantage of an algorithmic decision.

Whether they are ready-to-use services or good practices for algorithmic repurposing passed on *'under the table'*, this informal arsenal has grown over the years to answer the needs of all citizens.

The design fiction illustrating this future:

— **An interadministration report on the state of the art of contestation in 2029**

DISCOVER THE
DESIGN FICTION

Legitimacy, desirability, fallibility

A state of the art of the contestation facing public algorithms

A report supervised by the University Laboratory NETIC
Université de Bourgogne Franche-Comté

Preface to the administrative anticipation report presented to the Prime Minister on September 24, 2029

This report reviews the state of the art of the forms and practices of contestation towards public algorithmic systems.

This evaluation follows the acceleration of algorithms deployment within the central administration and local authorities, as part of the digitalisation of public action supported by the Government.

The review takes a closer look to the tools operating within a grey area, between legality and illegality, as well as to emerging uses and transpartisan initiatives.

Our study endeavours to avoid passing judgement about the reviewed cases. Nevertheless, it ambitions to help administrations in acknowledging the contestation from citizens-users, and in adapting the processes to these forms of conflict.

According to our conclusions, this is a decisive factor for the forthcoming redesign of public algorithms governance.

This documentation is based on the following classification in order to build archetypes of contestation:

Opposition
Tools and practices for administrative and legal contestation of the decisions taken or informed by an algorithm.

Obstruction
Techniques and strategies for corruption, alteration or incapacitation of public algorithms operations.

Falsification
Techniques for low-level and organised fraud aiming at an opportune exploitation of algorithmic weaknesses for a personal benefit.

Delegitimisation
Mobilisations and rhetoric developing a critic of an algorithm legitimacy or its deployment opportunity.

Bypassing
Function creeps, unexpected uses and obfuscation techniques allowing to escape an algorithmic processing.

A guide book to contest algorithmic decisions

Offered by **Vodroi**, a legal tech cooperative.

Vodroi provides for free a practical guide book of contestation, to dispute a decision ruled by an algorithm or to obtain compensation.

Although this ready for use guide is quite generic, it seems to be designed as a loss leader for a premium legal assistance, suggested in an option by *Vodroi*.

A small guide for algorithmic contestation
by and for honest citizens

vodroi

Contestation made easy for everyone

Public algorithms and AIs, **10 administrative plea cases explained**

Didactic diagrams to understand the administrative procedures to follow

The flaws in algorithmic laws you need to exploit in your contestation

Victim of an automated injustice: **when to appeal to restorative justice.**

⤓ **Download for free**

🗣 **Discover our helpline**

A 'small guide for algorithmic contestation' offered in free download by Vodroi (Screenshot, May 2029)

16

Advices pack
'Public algo, personal profit!'

Offered by **Julien Daro**, *fin-lifestyle influentrepreneur* and *self-digital optimisation* **coach.**

Julien Daro, an active social media influencer and self-appointed financial advisor, sells a service offer for identity falsification when facing public algorithms.

Those different *'advice packs'* bring deception techniques together allowing users to modify their digital profile. These methods aim at deceiving public algorithms and promise clients both to be granted with services and aids they would not access otherwise, and to escape a personalised taxation.

Some of the function creeps presented by the tutorials opportunely exploit known-but-not mitigated biases from automated systems.

Starter pack: Public algo, personal profit!

starter pack | **Public algo, personal profit!** | #❤ JulienDaro

Lesson #1
Good impression, good computation

Lesson #2
How to play the victim

🛒 **ADD TO THE BASKET**
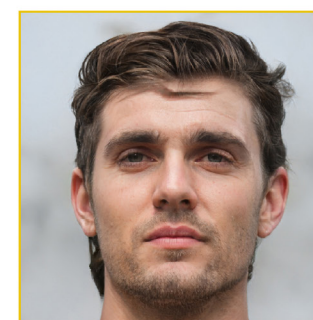
Discover Julien Daro's expertise

With this pack, you will learn to:

Lesson #1: **Fake your profile** to get a favourable algorithmic computation and increase your chance in **being granted with social benefits** or **in avoiding taxes**.

Lesson #2: Adapt your profile to **plead algorithmic discrimination** and to **obtain a generous indemnification**.

Webstore page displaying an advice pack from Julien Daro (Screenshot, April 2029)

23

The unofficial cartography of desalgorithmised procedures

Offered by the **Public Smugglers**.

The *Public Smugglers* collective have mapped out user journeys excluding algorithms to avoid contact with an algorithm or an artificial intelligence during an administrative procedure.

The various maps are available in an interactive format, working as a personal assistant to '*navigate the administration maze and avoid the machine*'. These maps are available on smartphones, personal assistants and as printed guides as well.

Behind this anonymous collective are several public servants. If their name is a bit provocative, they claim to be '*positive saboteurs*'. Their public motivation is to '*make sure humans and machines are used for what they are really good at, and not only for financial or ideological reasons*.'

Interactive maps from the 'Passe-Machine' helping to bypass algorithms, available on smartphones and assistantials (Screenshots, February 15, 2028)

39
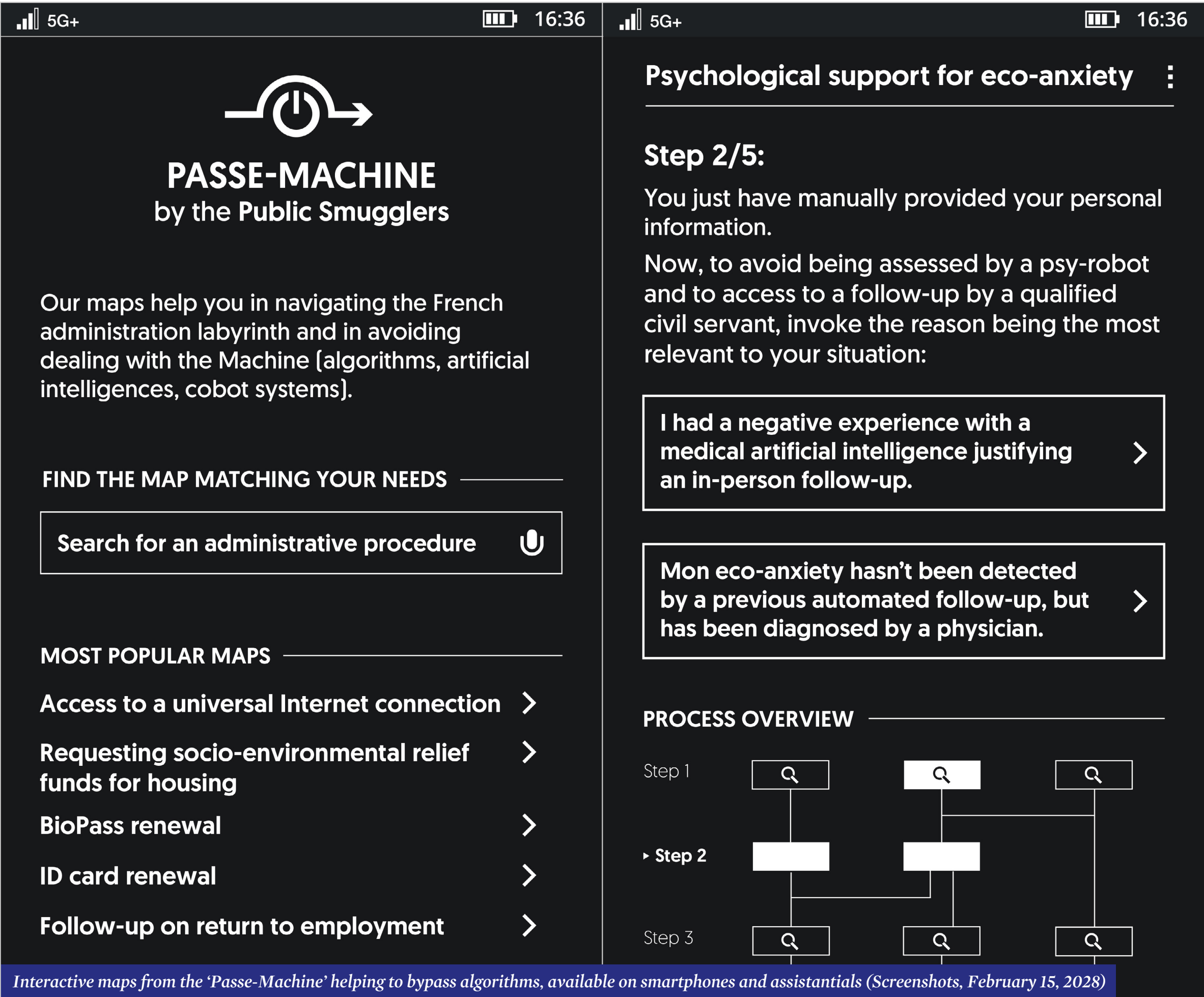
The #Occupalgo movement

An initiative from the Occupy Algorithms collective.

Inspired by the legacy from the early 2010s *Occupy* movements, the activist group *Occupy Algorithms* has developed collective strategies intending to '*occupy*' contested algorithms.

This notion of occupation has a double meaning, having as a common denominator the concept of saturation: the invasion of the digital space and the (over)solicitation of technical capacities of the hosted algorithm.

Midway between the traditional demonstration and the denial of service attack (*DDOS*), this occupation technique reinvents the right to demonstrate within digital spaces deemed as public, such as an administration Web site.

In concrete terms, an action from *Occupalgo* (usual abbreviation for *Occupy Algorithms*) sees the massive mobilisation of activists, coordinating to saturate the operational capacities of an algorithm. It can also take the form of a targeted *defacing* action to modify the Web page letting user acce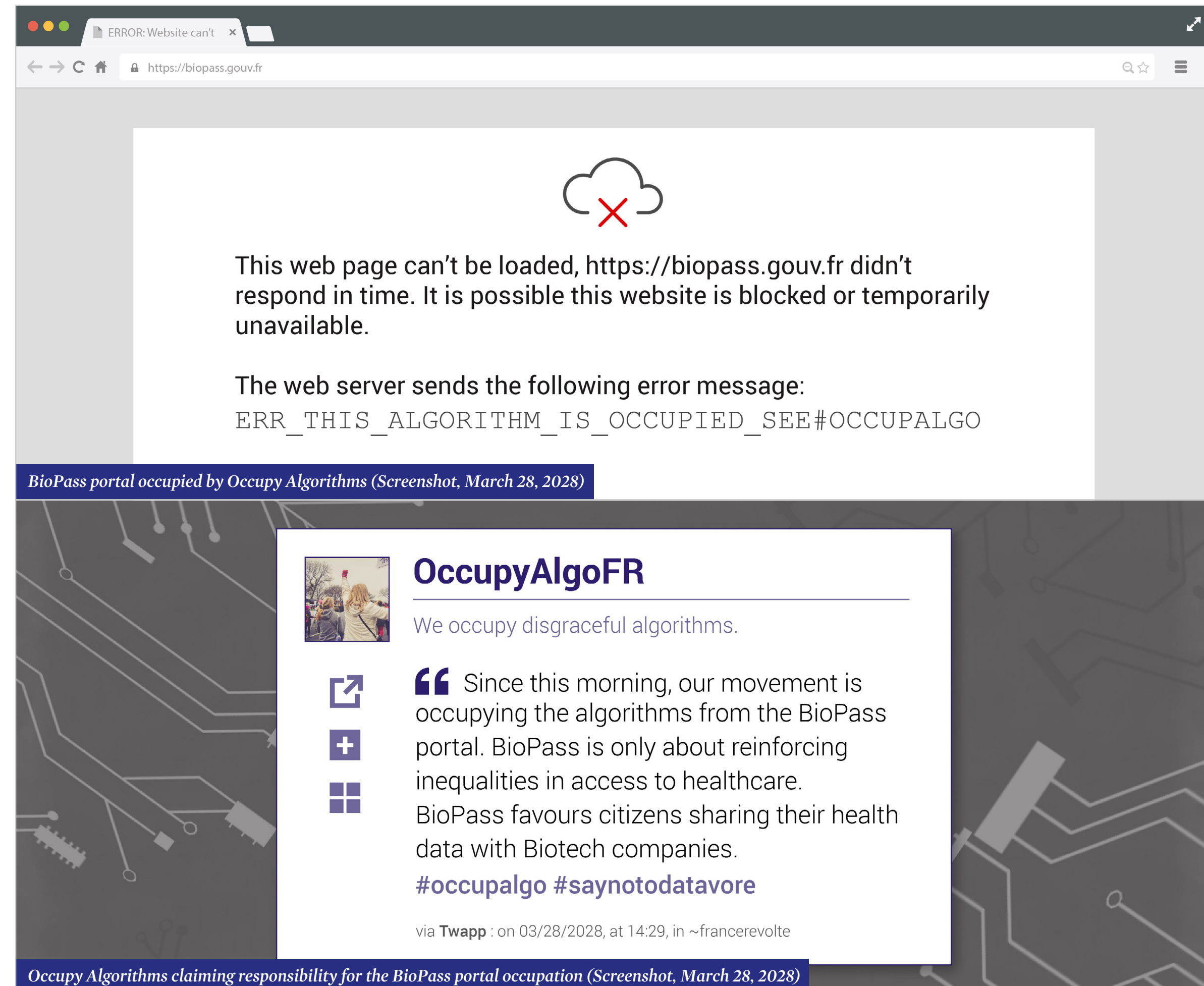ss to the algorithm. These two modes of action, occasionally joint, seeking to make the contested algorithm unavailable and make visible the opposition this system fuels.

The occupation technique of algorithms has become a key asset for negotiation between activist movements and the public authority.

This web page can't be loaded, https://biopass.gouv.fr didn't respond in time. It is possible this website is blocked or temporarily unavailable.

The web server sends the following error message:
ERR_THIS_ALGORITHM_IS_OCCUPIED_SEE#OCCUPALGO

BioPass portal occupied by Occupy Algorithms (Screenshot, March 28, 2028)

OccupyAlgoFR

We occupy disgraceful algorithms.

❝ Since this morning, our movement is occupying the algorithms from the BioPass portal. BioPass is only about reinforcing inequalities in access to healthcare. BioPass favours citizens sharing their health data with Biotech companies.
#occupalgo #saynotodatavore

via **Twapp** : on 03/28/2028, at 14:29, in ~francerevolte

Occupy Algorithms claiming responsibility for the BioPass portal occupation (Screenshot, March 28, 2028)

56

ALGORITHMS OPPORTUNITIES AND
ETHICS IN TIME OF CRISIS

Fail-soft mode in a degraded world

**Weather forecast
of your public services**

Availability estimates
From 02/01/2031 to 06/01/2031

Breizh Tourism 4D
Unavailable
ⓘ Suspended due to ongoing energy
restrictions.

Simul'aid
Degraded functioning
ⓘ Only available during off-peak time
(13:00-16:00 ; 22:00-8:00).

**Convimiam, home meal
delivery for seniors**
Normal functioning

Allowances distribution
Degraded functioning
ⓘ Mobilisation of the citizen reserve force
to ensure service continuity.

Côtes-d'Armor Region

Fail-soft mode in a degraded world

Horizon 2030

In 2030, the climate emergency and its environmental impacts question more than ever the role of public digital technologies. France learns willy-nilly to do with less. In response to the increasing scarcity of raw material and to the energy crisis, the time for 'unlimited' digital technologies has passed for good. Operating in fail-soft mode is the new standard.

Public algorithms have been oriented towards low-tech logic. Just like energy, they have also become sporadic. Their availability and their daily operation depend on two factors, one circumstantial, and the other structural: available energy resources (circumstantial factor) and the climate crisis (structural factor). If those conditions are not met, public algorithms are then suspended, in the logic of State exemplarity. And for good reasons, algorithms and learning systems have become timely scapegoats, accused of contributing to global warming.

Aiming at providing some nuances, the availability and the soft-fail mode are also developed in spatial terms, according to resources and local context, and in temporal terms, with algorithms having their own expiry date.

Decisions to implement a public algorithm are also determined by new ethical criteria. Among them, the direct and indirect energy and climate impact of the algorithm, or what happens on non-human beings (animals and plants).

Despite a whole range of measures, environmental degradations establish a growing social instability.

Design fictions illustrating this future:

— Public information on the availability of public services relying on algorithms

— An error page of an unavailable algorithmic service

— The evaluation grid for algorithm projects, with appropriate criteria for a degraded world

DISCOVER THE
DESIGN FICTIONS

Public information on the availability of public services relying on algorithms

Weather forecast of your public services

Availability estimates
From 02/01/2031 to 06/01/2031

Breizh Tourism 4D
Unavailable
ⓘ Suspended due to ongoing energy restrictions.

Simul'aid
Degraded functioning
ⓘ Only available during off-peak time (13:00-16:00 ; 22:00-8:00).

Convimiam, home meal delivery for seniors
Normal functioning

Allowances distribution
Degraded functioning
ⓘ Mobilisation of the citizen reserve force to ensure service continuity.

Côtes-d'Armor Region

An error page of an unavailable algorithmic service

6G-   11:42

https://emploicitoyen.gouv.fr/simulation

Process simulation
Torwards a civic job

This online service is momentarily and locally unavailable due to energy restrictions.

Availability estimates:

From 01/29/2032 to 02/22/2032 :
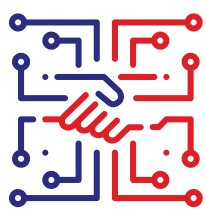**Degraded functioning**, this service being only available during off-peak time.

As from 02/23/2032 :
Back to normal functioning.

**Reasons of unavailability
(certified by TranspaFrance)**

Cold wave is affecting Haut-de-France Region and leads to a redirection of available energy resources.

Class C algorithms and data storage are subjected to energy restrictions due to their high energy consumption.
Therefore, services using Class C systems are available until 01/29/2032 (Prefectural decree n°2032-ECO-098).

Record of decisions from the Plural Comitee for Digital Maintenance (PCDM)

Session held on 03/12/2033, evaluating opportunities of implementation for public algorithms and learning systems.

This publication has been verified and certified by **TranspaFrance**, the National Authority for Administrative Transparency.

✓ Validated implementation opportunities

Evaluated algorithm or learning system	Carbon footprint of system functioning	Energy cost of system design and development phases	Environmental cost of material and resources	Impacts on the non-humans	Carbon-negative measures	Resilience to degradations
Grant for a personalised place in kindergarten (Métropole Nantes-Saint-Nazaire)	green	light green	green	green	light green	yellow
Automation of the impact studies led for the grant of a right to experiment (for companies <10,000 employees)	light green	green	yellow	light green	light green	red
Control of autonomous fishing boats geolocation	yellow	yellow	green	yellow	red	green
Diagnosis of early risk of eco-anxiety among children (up to 10 years old)	light green	green	green	green	green	orange

✗ Rejected implementation opportunities

Evaluated algorithm or learning system	Carbon footprint of system functioning	Energy cost of system design and development phases	Environmental cost of material and resources	Impacts on the non-humans	Carbon-negative measures	Resilience to degradations
Computation of a solidarity tax on NFT holding	red	red	orange	yellow	yellow	red
Assessment of drought risks (PACA Region)	yellow	yellow	light green	green	yellow	orange
Automatic processing of applications for 'second chance schools'	orange	orange	yellow	light green	orange	orange

Evaluation criteria from the PCDM

The projects of public algorithms are evaluated following these criteria:

☑ **Estimated carbon footprint of system functioning** (computation, interface renders) and of its related infrastructure (data storage, networks).

☑ **Energy cost of the algorithm conception and development phases.**

☑ **The expected impacts on non-human living beings** (animals and plants): direct impacts from automated decisions or decisions assisted by the algorithm/learning system, indirect impacts related to their ecological footprint.

☑ **The environmental cost of material resources** (hardware) required for system functioning.

☑ **Planned carbon-negative measures to mitigate the environmental impact** of the algorithm or the learning system.

☑ **The system capability to be resilient** when facing technological disruptions as well as environmental degradations.

The compliance of each algorithm is evaluated through majority judgement by Comitee members.

Discussing and enriching these speculative futures

WHY DISCUSS THESE FUTURES?

Debate is a vital sign of the good health of democracy. Then, it appears to be mandatory to debate about the futures explored through this project.

Debating about a speculative scenario is about to question their plausible and preferable nature. It is also about collectively asking ourselves if we want to head or not towards this horizon, and, if so, to decide how we should head towards this future or, on the contrary, avoid going in this direction.

Dissensus is here the raw material of the experience: points of views and opinions meet and diverge in order to highlight arguments able to inform public policies.

Three activities to discuss, deconstruct and enrich these futures

Swaying futures invites you to debate about the preferability of this future.

L'E.P.I. offers to deconstruct the scenario to evaluate its plausibility.

Retrospeculation encourages you to enrich and dispute a future scenario.

Designed for an in-person facilitation, these three activities are flexible and can be adapted for remote online sessions. If these activities don't require any prerequisite to take part in them, a previous experience in facilitation is advised to host a discussion workshop.

DISCOVER THE
PARTICIPATORY ACTIVITIES

SWAYING FUTURES

Debate

In a few words

The Swaying Futures are a workshop activity inviting participants to debate about the preferable nature of the future presented by the scenario: what in this scenario is considered desirable, or on the contrary, undesirable?

Didactic and inclusive, this activity allows anyone to take position and express opinions.

User manual

Material

- A screen to display the design fiction visuals
- The written scenario
- (Optional) A microphone

Setup

Duration: from 30 min to 45 min per scenario.
Participants: from 6 to 20 participants.

Facilitators' roles

A facilitator: presenting the scenario and hosting the debate.

Optional, a scribe: noting participants' arguments.

Preparation

1. Drawing a dividing line on the floor, with coloured tape, for example.

2. Signalling each 'camp' on either side of the line: *'(Rather) Preferable'* and *'(Rather) Undesirable'*. Usually, the '*Preferable'* space is placed on the left, and the *'Undesirable'* one on the right.

Facilitation

1. Presenting the scenario, using the design fictions illustrating this future.

2. Letting a few minutes to the participants to ask themselves about the scenario.

3. Asking participants to position themselves on either side of the line, according to the way they see the scenario: rather preferable or rather undesirable.

Warning, it isn't allowed to be neutral during this exercise: Participants can't position themselves on the line and can't place a foot in each camp. If participants want to highlight their indecisiveness, they can place themselves very close to the line, but still positioning themselves in one of the two camps (preferable or undesirable).

4. Giving a few minutes to the participants from each camp to put their arguments together to be able to explain why they have chosen this side of the line.

SWAYING FUTURES

Debate

5. Starting the debate by giving the floor to the group in minority (the group having the least partisans). The participants from this camp present the reasons why they have chosen to be on this side of the line.

Any participant has then the possibility to switch camp if an argument from the other group was convincing enough. The debate encourages participants to 'move' as their opinion is changing. It is possible to switch camp at any moment of the discussion and as much as desired.

6. Distributing the floor in an equitable manner, while letting the camps answer each other.

If participants are switching camps, offering them to explain why this change.

7. Making sure to give the floor to the ones not having spoken yet.

(Optional)

8. Reviving discussions by playing the devil's advocate, especially if there is a consensus among the participants leading to a single camp.

9. The scribe-facilitator notes the key-arguments down, particularly the arguments creating movements. Listing these arguments allows to map, during the debate debriefing, the elements of preferability and undesirability of the scenario.

Setup for a Swaying Futures session

SCENARIO

Preferable   **Undesirable**
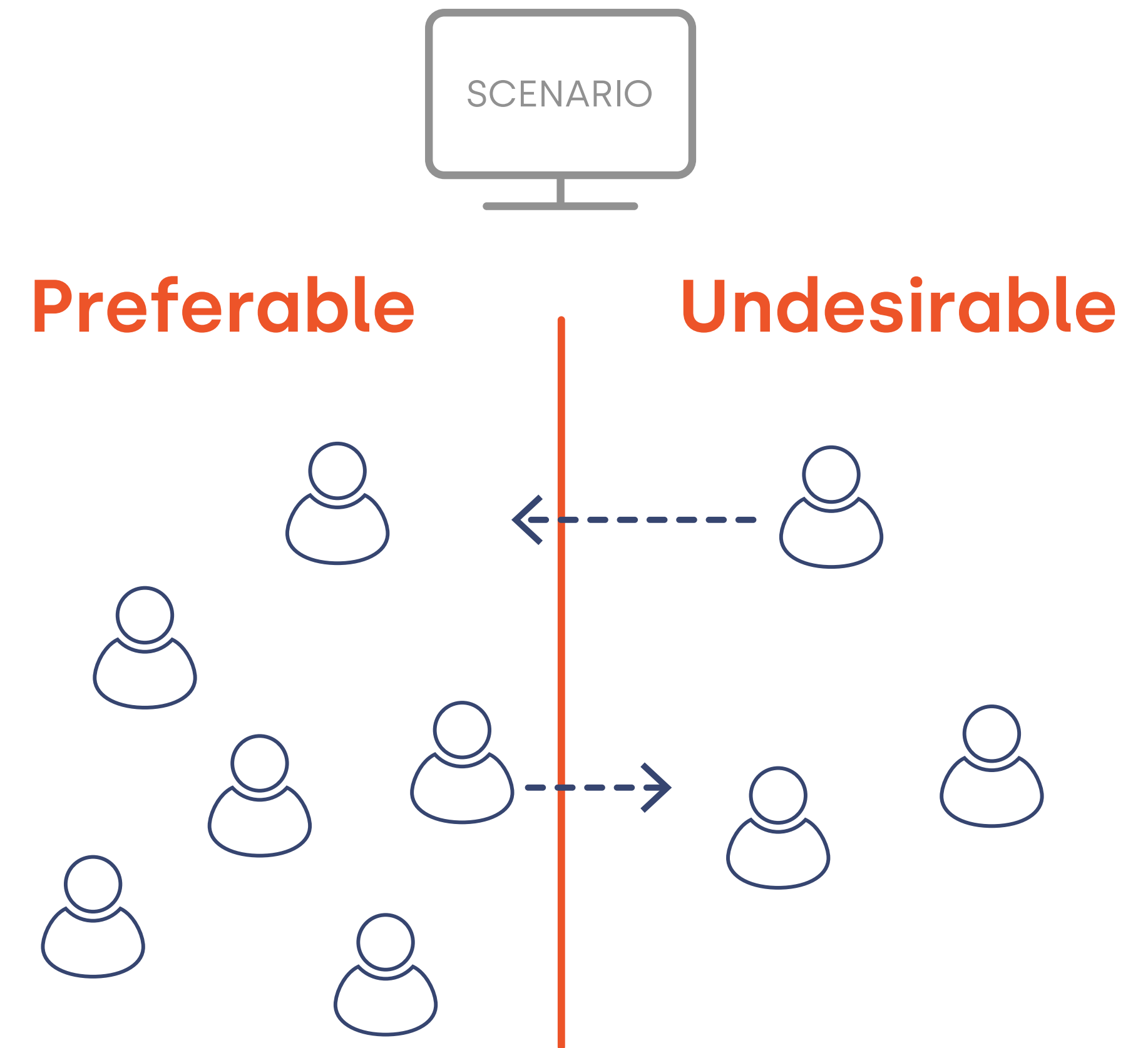
O.P.I.
Deconstruct

In a few words

The O.P.I. (Ongoing, Probable, Impossible) is a tool to co-operatively deconstruct the future outlined by a scenario. Participants are invited to identify which elements from this future are either ongoing, probable or impossible. As a critical rereading exercise, the O.P.I. activity invites participants to evaluate in which measure this future could occur.

User manual

Material
- The speculative scenario and its visual(s)
- An O.P.I. template (template following at the available page)

Setup

Duration: from 20 min to 45 min per scenario.

Participants: from 2 to 6 participants.

Instructions for facilitation

1. Discovering the scenario, supported by the design fictions (visuals) illustrating this future.

2. Discovering the O.P.I. map.
Each branch from the O.P.I. corresponds to an axis of the scenario analysis:
- **Ongoing:** what is already happening today.
- **Probable:** what could happen at the temporal horizon of the scenario.
- **Impossible:** what could never happen.
Don't hesitate to redraw the map at a larger scale!

3. By confronting points of view and thoughts, completing the different branches to map what – according to the participants – is already happening, probable or impossible within this scenario.

4. When placing an element on a branch, participants are invited to explain why they think this is ongoing, probable or impossible.

Variation

This variation is a completing the above-mentioned instructions in order to bring nuances to the deconstruction:

'More or less'
It is possible to class the elements placed on the branches depending on whether they are considered more or less ongoing, probable or impossible.
For example, the bisections placed on the elements placed on the bottom of the 'probable' branch are considered 'not that probable', when the ones placed on the top of the branch are seen as 'very probable'.
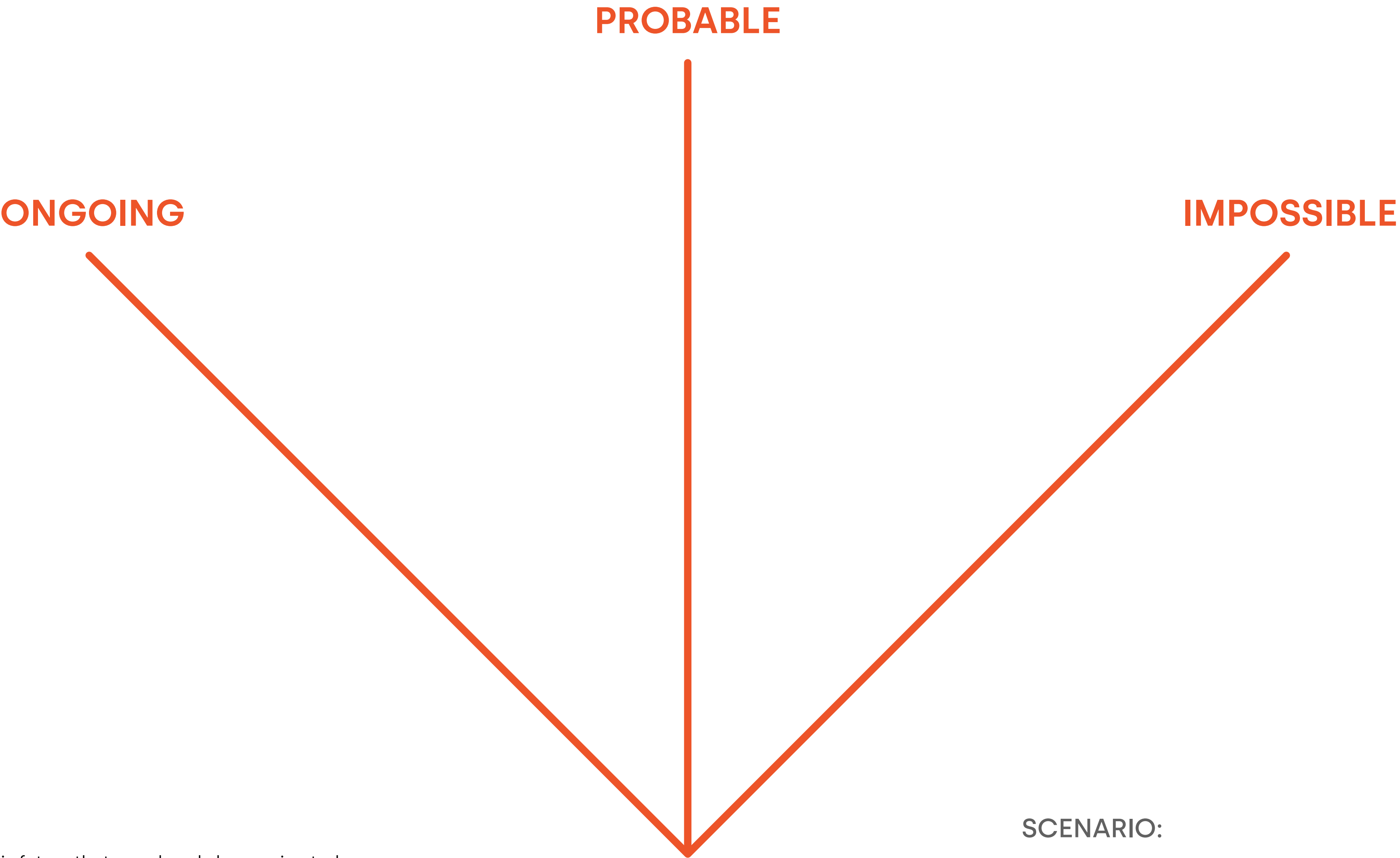
PROBABLE

ONGOING

IMPOSSIBLE

THE O.P.I. MAP

Ongoing: elements from this future that are already happening today.
Probable: elements from this future that could appear.
Impossible: elements from this future that won't occur.

SCENARIO:

PROBABLE

looking for more
humanity

rise of encoded inequalities
and discrimination

ONGOING

IMPOSSIBLE

defiance
(towards AIs)

no refill =
broken access to PS

a personalised
online experience

dematerialised
administration

THE O.P.I. MAP

Ongoing: elements from this future that are already happening today.
Probable: elements from this future that could appear.
Impossible: elements from this future that won't occur.

SCENARIO:

Humanity tokens
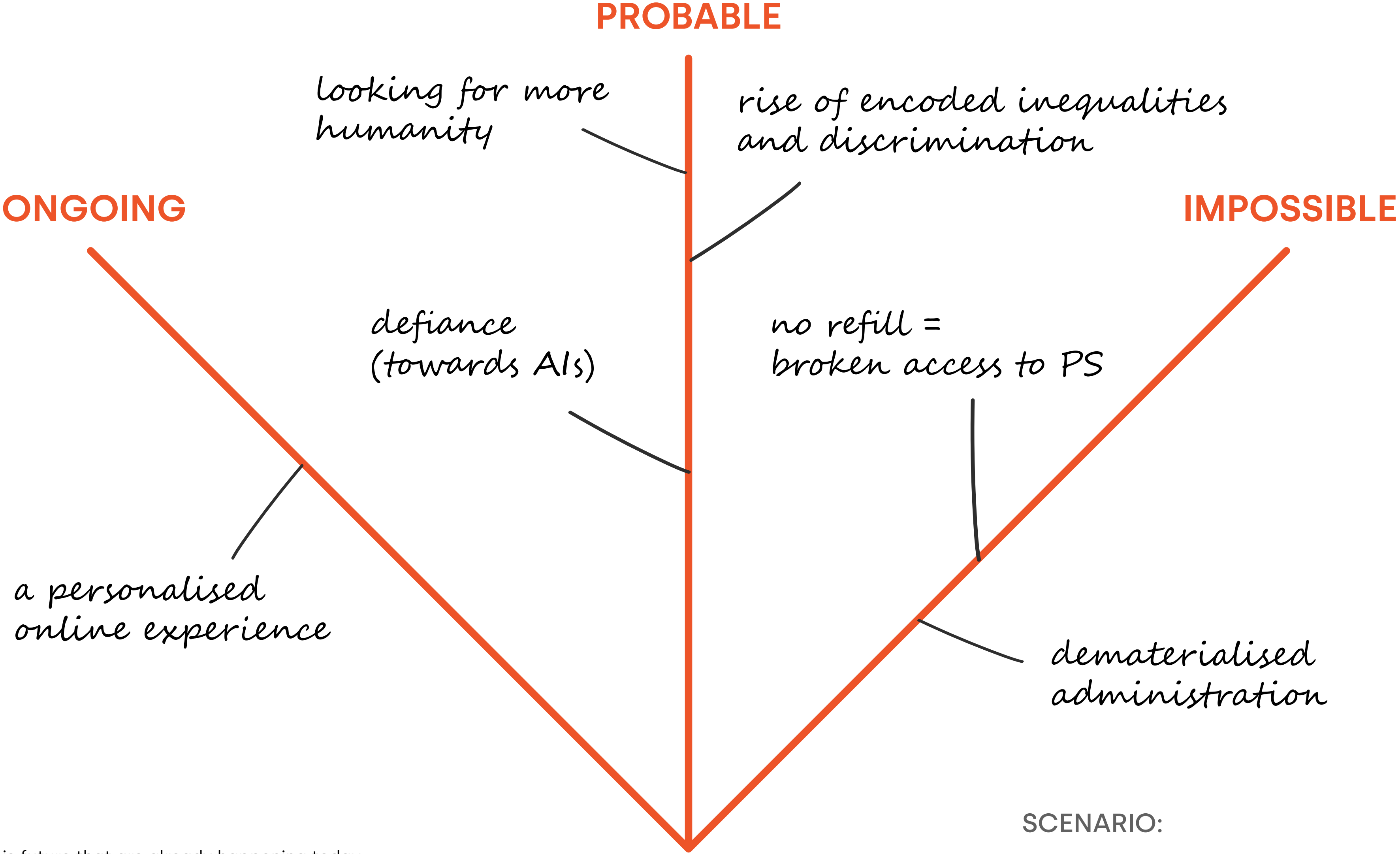
RETROSPECULATION
Enrich

In a few words

The retrospeculation activity invites you to enrich and develop the initial scenario by imagining what happened *'before'* this future. The exercise aims at answering the following question, *'How did we get there?'*.

There is a double goal for a retrospeculation session:

- Bringing new ideas to get grips with this future and pluralise it, by playing with the unsaid and the gaps in the scenario.

- Identifying the factors, events and actions that would foster or mitigate the future perspectives underlined by the speculative scenario.

As a prequel, a retrospeculation suggests both a reinterpretation and a rewriting of this scenario.

User manual

Material
- The speculative scenario and its visual(s)
- A retrospeculation timeline (template following at the available page)

Setup

Duration: from 30 min to 60 min per scenario.

Participants: from 2 to 4 participants.

Instructions for facilitation

1. Presenting the scenario, supported by the design fictions (visuals) illustrating this future.

2. Filling in the milestones of the retrospeculation timeline, which led to this future. Each milestone can be different: an event, a law, a citizen mobilisation, a technological disruption, etc. Also, participants have to fill in the date (year) of each milestone.

3. After having completed the retrospeculative timeline, participants are invited to discuss which milestone would be the most crucial to be changed to make sure this future doesn't arise or happens in a different way.

At the end of the session, discussions can be articulated around the following question: which elements from the timeline could be already influenced today to see this future evolving towards a more preferable horizon?

Note:
The retrospeculation timeline template includes three milestones to be filled in. Of course, participants can add milestones to enrich their retrospeculation.

YEAR:

SCENARIO:

..................…

..................…

.................…

...........................…

2021

WHAT HAPPENED?

RETROSPECULATION

Some ideas to envisage what might have happened: an international event, a national crisis, a law, a social movement, a technological disruption, a climatic shock...

YEAR:

2021

2023

2026

2028

WHAT HAPPENED?

Learn to do 'without' = blackouts are multiplying resources such as rare earth elements are rarefying... cities must self-organise and learn to ration digital uses!

new law sets and organises interruptions of digital public services in order to set an example to follow!!! people in need are then facing additional complications

the public administration finds inspiration in countries used to work in a degraded way for many years and then calls on their know-how in low-tech solutions
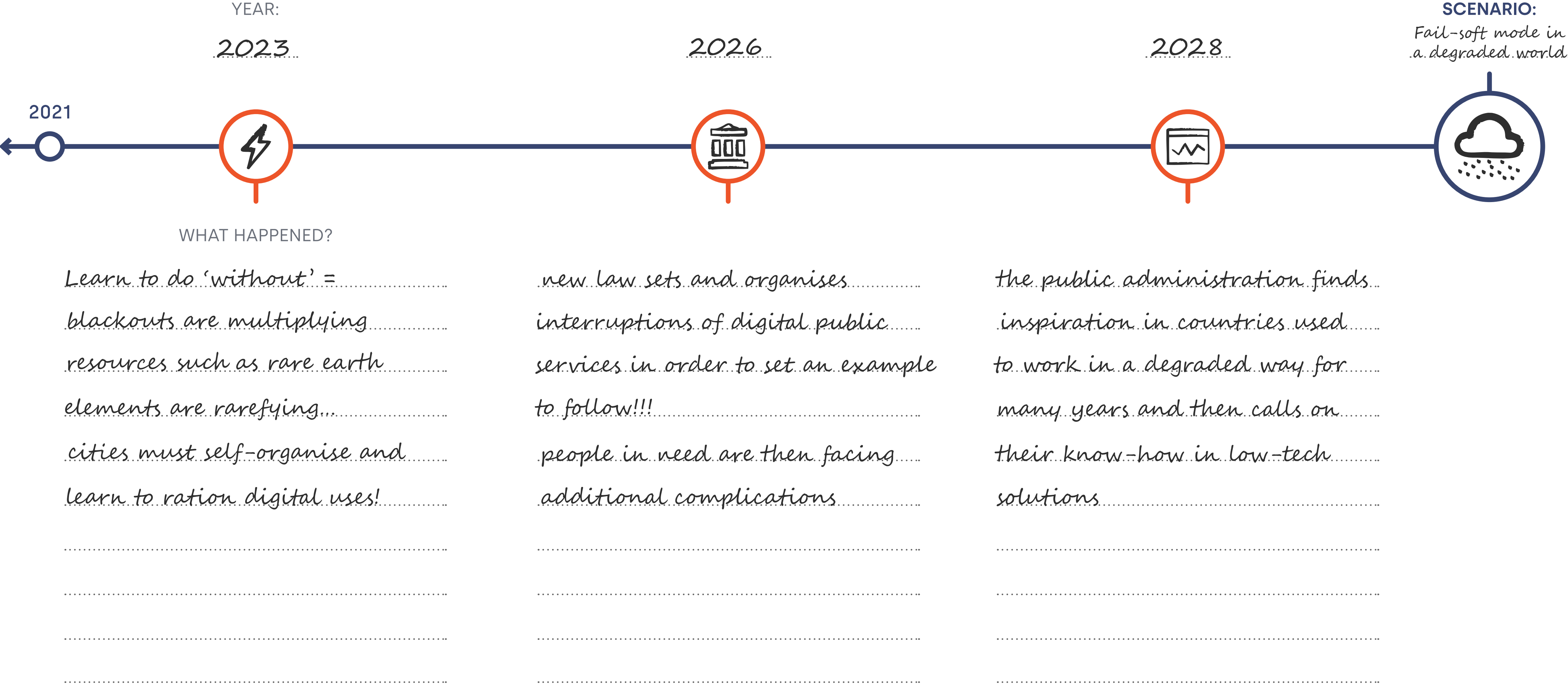
RETROSPECULATION

Some ideas to envisage what might have happened: an international event, a national crisis, a law, a social movement, a technological disruption, a climatic shock...

**Many other futures remain to be told and questioned.
It's your turn to speculate!**

Futures, ethics and opportunities for public algorithms: a speculative exploration

By Design Friction and Etalab