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.

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.

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> “ 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.