

The weak link for phage therapy adoption : government awareness

The author

During 14 months of intense work, Christian Bois has read on superbugs and phages and exchanged with researchers, industrials, MPs, etc. His focus is on two dimensions. At the top level, the “words & formulas” that are used to talk about and around phages and phage therapy adoption. At the patient level, how the life chain is managed. His actual work uses the methods for action research he developed in his PhD dissertation - 2005.

I am Gloria !



Since June 2018, Gloria is the figurehead of our action.

Gloria represents the patient who will die, be amputated or invalidated if phage therapy is not applied quickly.

In June 2018, facing the superbug “shooting”, my feeling was :



(1)

The fear of Gloria facing the superbug is my fear.
The distress of Gloria is my distress.
The anger of Gloria is my anger.
I have no superbug in my body - as far as I know - but I feel identified with Gloria's sensations and emotions.
My discourse has two dimensions :

- a very intellectual dimension : thinking a complex system
- a very committed dimension : change the complex system odds

There is both a "point of view", and a "point of feeling".

Being different, unlike, distinct : a metaphor

Bob flies with an helicopter.
Bob can't fly with a vegetable mixer.
Mixers and helicopters both have propellers but they are different, unlike, distinct.
And ...
Fred can't be saved by a factory pill.
Fred can be saved by a phage : the superbug affecting Fred will be killed.
Factory pills and phages have something in common : they are sold in pharmacies - from the Baltic sea to the Black sea.
But factory pills and phages are different, unlike, distinct.
And ...
The present work comes after days and days of analysis of documents produced by governments.
We could do finger pointing toward guilty governments.
We prefer the mode of fiction.
Shall we imagine a country named X.
There is Government X - a king, a president, a prime minister, etc.
There is Government X Phage Committee - GXPC.
How many real phage experts in GXPC ?
How many people who never published a word about phages ?
How many people who are only experts in factory synthetic pills ?
How many are aware that phages are **very** different, unlike, distinct from factory synthetic pills ?
How many are conscious that factory synthetic pills paradigm is alien to phage paradigm ?
The so called experts are lost in paradigms !

And the reader is lost in paradigms !

“ *Does this sentence belong to the factory paradigm ?* ”

“ *Does that formula belong to the phage paradigm ?* ”

Nobody knows !

The reader is lost in paradigms because the Government X Phage Committee is deeply lost in paradigms.

The matter of the project

A didactic metaphor.

The project of Max is to reach the moon.

The first step of Max is to define “reaching the moon”.

The first step is to say “*reaching the moon is different from reaching the clouds*”.

It is different, unlike, distinct.

Government X says : “*We study phages !*”

The first step of GXPC should be to “*define phages*”.

The first step should be to say “*phages are different from anything else !*”.

Phages are different, unlike, distinct.

When GXPC doesn't state these distinctions firmly, the actors of the phage project are **completely lost**.

And the produced discourse is weird, unreal, self contradictory.

The words and formulas of a project

To work in a project, people need to start with the right words, the right formulas - defined **upstream**.

Usually, a project with a vocabulary mess is named a Babel project.

The GXPC discourse is a Babel.

What is awareness ?

The word “awareness” comes from an Indo-European word meaning “being attentive to”.

Government awareness means being attentive to **the dangers of the Babel syndrome**.

Very attentive !

The absent discourse about paradigms : the paradigm Babel

We have studied the documents of Government X Phage Committee - GXPC.

The first sentence of a document should be : *“we talk from this point of view, we write within this paradigm”*.

If this is not defined upstream, the rest of the discourse is just Babel.

In the ideal case, GXPC experts are in 4 different paradigms.

The machine paradigm

Some speakers of GXPC are in the factory paradigm.

And the factory paradigm is a very special paradigm with a very special set of words and formulas for industrial phages.

People are generally unconscious of their idiosyncracies, their idioms.

It's the job of human science researchers to help clarify that.

But GXPC members and government members must be conscious that **word mismatch kills patients.**

The local tool paradigm

Some speakers of GXPC are in the cottage business paradigm.

Cottage business is necessary to collect and grow specific phages for specific superbugs for specific patients.

Cottage vocabulary is different, unlike, distinct from factory vocabulary.

The bricolage paradigm

Some speakers of GXPC - Government X Phage Committee - are in the Do it Yourself garage paradigm.

They grow phages for decontamination.

Growing phages in a garage is a unique experience.

DiY vocabulary is not cottage vocabulary which is not factory vocabulary.

The shoestring paradigm

Some GXPC speakers should report what happens underground - in the clandestine practices, in the smuggling dynamic.

We call it the garden hut paradigm.

As hospitals don't deliver phages some people prepare them clandestinely.

It's a matter of life or death.

Among key words in the garden hut “prohibition” and “resistance”.

Everybody, in GXPC, knows that there is an underground phage culture.

But there is another culture : omertà !

A warning about paradigm Babel

Within Government X Phage Committee there is an anthropologist.
Yes, it's not a dream !

And she says : *“Be attentive of paradigms, be attentive to the coexistence of multiple idioms !”*

But the anthropologist preaches in the desert. (5)

It's not enough to have human science analysis !!!

The will for improvement must be here too.

The danger of consciousness

What would happen if Government X Phage Committee would be conscious of the co-existence of 4 paradigms ?

This would mean that :

- it's **normal** if dying Max asks for garden hut phages
- if garden hut phages kill Max its normal that **a scandal** arises
- if garden hut phages **save** Max its normal that a scandal arises
- a scandal because standard phages are not available in pharmacies
 - factory phages
- a scandal because cottage phages culture is not available
- a scandal because DiY garage phages are used only for decontamination although they can save Max

“Not wanting to be conscious” is generally called *“bury one's head in the sand”* : the ostrich way.

Consciousness as a necessary condition

The job of a whistleblower is to do “everything possible” to raise Government X Phage Committee's awareness and consciousness.
GXPC people must become conscious of the cohabitation of 4 paradigms, of 4 idioms.

Consciousness of paradigms is a necessary condition for the phage project to begin.

Yes ! Even with apparent activity, **the true work of GXPC has not begun !**

What is real, clear cut, is that Government X **has not really begun** the phage project.

Intermezzo

This first part as shown the huge Babel problem.

It was centered on analysing the reality of GXPC through its discourse production.

Now we shall **center on the patient**.

What we observe is that “ patient centered ” analysis are quasi absent of publications.

The life chain holding the patient’s life is not described clearly : patients die, are amputated, are invalidated because **their life chain is not correctly managed !!!**

A time for revelations

Phage therapy is one of the “engines” that promote revelations about the misunderstanding of human physiology.

There are others.

Gloria needs to have a **competent immune system** to survive - we will develop that point further.

And ...

Using too much antibiotics of too many types is a perfect way to have an immune system “out”. (2) (3)

And ...

Toxic diet and deficient diet are two other ways to put an immune system “out”. (4)

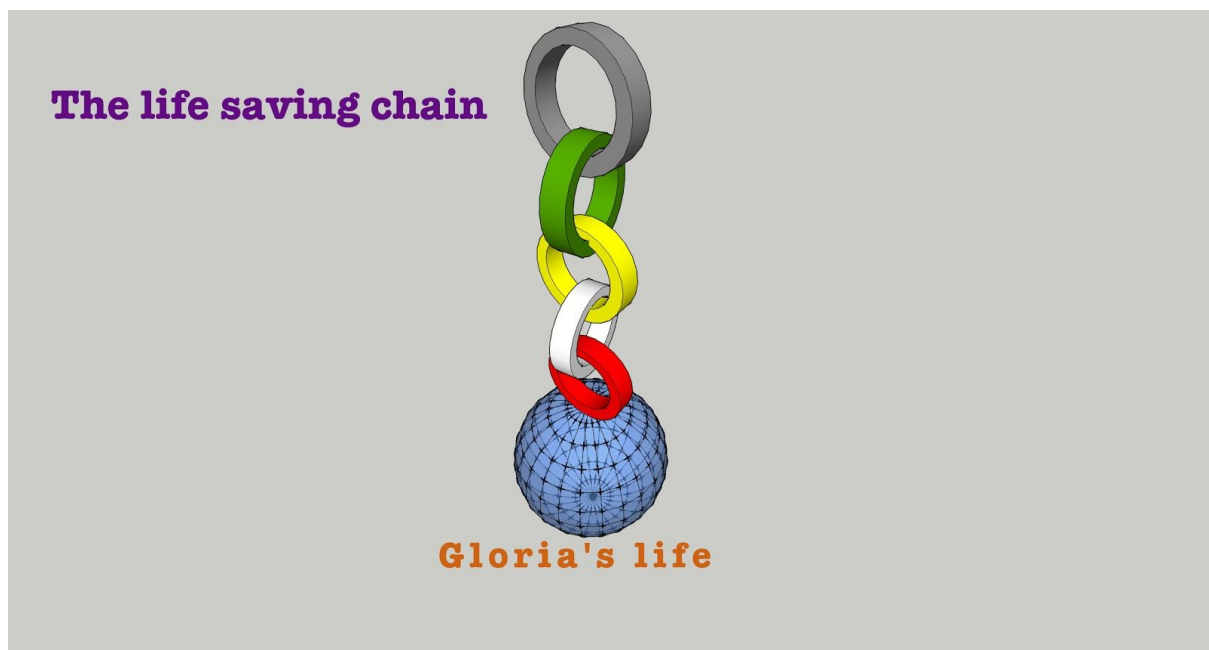
GXPC should have “ diet in hospitals ” at its agenda !

It’s a **necessary condition** for phage therapy.

GXPC should promote a special diet for people with a weak immune system !

But GXPC is concerned with factory standards, not with patient’s immune systems !

The chain metaphor



Gloria's life is represented by the blue sphere.

The sphere is suspended to a chain.

Gloria's life depends upon necessary conditions represented by the links of the chain.

If a link breaks, Gloria is dead, amputated or invalidated.

Link 1 : a competent immune system

If Gloria's immune system is completely "out", no therapy will save her.

Phage therapy is offered to patients said to be "last resort".

Very often, the immune system is the weakest link of Gloria's life chain - we saw some reasons before.

All the effort should be put on the weakest link.

When the weakest link is the immune system, any effort elsewhere is useless.

With a weak immune system, phages are useless !!!

And ...

What is the program of GXPC ?

The program is to propose phages to "last resort" patients taken as "experimental cases".

The program is to check phage efficiency in situations where the immune system and other systems are nearly out.

This choice of phage therapy experiment is completely **out of any scientific common sense**.

Who will say and repeat that ?

Link 2 : a competent nurse

Within the last year, we have sent mails to more than thousand Members of Parliament - at nation or union level.

One of the answers we got from an MP was : *“Training nurses about phage therapy is very important. We will enhance the initial training program and further education programs.”*

Of course ! Our experience is that the “nurse link” is very important. Especially when the therapy is personalised - as phage therapy is. Both feedback to the physician and subtleties of phage application are important.

Link 3 : a competent physician

In all the clinical domains there is a “course” with a book.

Where is the course for phage therapy ?

How many physicians have access to it ?

GXPC says nothing about physicians training !

Link 4 : a competent phage peasant

Morave author Milan Kundera says : *“The more a matter is dramatic, the more humour should be used !”*

Millions of people are severely affected by superbugs : it’s dramatic.

Inertia of GXPC is dramatic.

So we must imagine a phage peasant.

Because phages are like seeds ; they must be collected, sown, grown.

The **agricultural metaphor should be used** instead of the factory metaphor.

Link 5 : a competent accountant

The government phage project needs an accountant who remembers that there are two columns : a debit and a credit column !!!

When GXPC writes *“phage therapy is expensive”* it’s meaningless !

Example

Serge Fortuna’s leg was condemned in France.

He went to Tbilisi - Georgia - he bought 30 euros of phages and saved his leg.

And ...

Stan is a PhD engineer. At the age of 30, he loses his leg - superbug / no phage.

The insurance systems - public, cooperative, private - will pay **1 million euros** for Stan's lifelong pension !!!

The cost of Stan's recovery may have been **30 euros** !!!

May be 3 thousand euros for personalised phages.

Phage therapy is **very cheap** ... for a competent accountant.

We met competent accountants and they told us : *"The problem is not with our numbers, the problem is in the use of our numbers by the GXPC !!!"*

Link 6 : an aware government

We remember that a weak link in the life saving chain means Gloria's death, amputation or invalidation.

What is the equation of government awareness ?

It is to be ... aware of what we said before :

- 4 paradigms
- building a GXPC - Government X Phage Committee with people representing the 4 paradigms working together !!!
- phages are cheap
- university courses must urgently be set for nurses, physicians and phage peasants ; and on the job training
- food for immune system competence must be available in hospitals
- vocabulary of each paradigm must be defined and used all the way through

Who will save Gloria ? Top down or bottom up ?

Our job as whistleblowers is to do "as much as possible" in the bottom up way in synergy with DiY people, etc.

The Belgian experience seems to be twice top down :

- top down in the military hospital for the launch of the phage project "some" decades before
- top down in civil society when the Ministry of health decided to launch a phage project

Why do we write “seems to be” ?

Because - in the 80's - we worked with military physicians in a very informal way - on another matter than phage therapy.

And this other matter was worked out from the bottom, not from the top.

And this other matter came to the civil realm after.

So, our experience is that the impetus is **always given by innovators, outsiders.**

Impetus always comes from the bottom. (6)

Of the importance of translators

We have seen that garden hut outsiders, DiY innovators have their own vocabulary.

There is the need for translation toward cottage and factory people.

Mediation and interpretation towards GXPC and all government bodies.

We hope this paper will help.

Addendum

Paul works hard on phages.

We have written to Paul : *“The weakest link is government awareness. Your work on phages is **useless** for Gloria if nothing is done on the weakest link.*

Paul, please STOP doing something else than didactics, mediation, influence toward THE Government and the GXPC !”

Steph works hard on phage therapy.

We have written to Steph : *“The weakest link is government awareness. Your work on phage therapy is **useless** for Gloria if nothing is done on the weakest link.*

Steph, please STOP doing something else than didactics, mediation, influence toward THE Government and the GXPC !”

Charles is working hard for a standard phages factory.

We have written to Charles : *“The weakest link is ... STOP doing something else ... !”*

Jackie is working hard on cottage personalised phage culture.

We have written to Jackie : “*The weakest link is ... STOP doing something else ... !*”

Notes & references

(1) Drawing of Gloria by Luc Debard for Une fabrique de communs Phago project

Then : https://en.wikipedia.org/wiki/Charlie_Hebdo_shooting

In January 2015, just after the shooting, Joachim Roncin has written on Twitter the now famous “I am Charlie”.

(2) *Karen Zusi* Antibiotics alter the infectious microenvironment and may reduce the ability of immune cells to kill bacteria [Broad Institute](#) 2017

(3) *David Nield* Antibiotics Found to Cause Immune System Damage And Reduce Brain Cell Growth [Science Alert](#) 2016
With reference to :

Yusuke Shono & col. Increased GVHD-related mortality with broad-spectrum antibiotic use after allogeneic hematopoietic stem cell transplantation in human patients and mice

Luisa Möhle & col. Ly6Chi Monocytes Provide a Link between Antibiotic-Induced Changes in Gut Microbiota and Adult Hippocampal Neurogenesis

(4) *Andrew L. Kau & col.* Human nutrition, the gut microbiome, and immune system: envisioning the future [Nature](#) 2011

(5) See [Charlotte Brives](#) work

(6) See Moscovici’s and Sloterdijk’s words on tribe immune system and resistance to change

https://en.wikipedia.org/wiki/Serge_Moscovici

