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Covid-19 pandemic in France

Coronavirus: "We could probably have had a vaccine and/or treatment ready..."

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This interview with doctor Gérard Chaouat, immunologist, CNRS researcher was conducted by <u>l'Anticapitaliste</u> and published on 25 March.

Hello, can you first briefly introduce yourself?

Gérard Chaouat: I am an immunologist, a CNRS researcher in an INSERM unit in a hospital environment, retired since 2009 but emeritus research director, and as such, normally, I go to my lab every day. [1]

Let's start at the beginning: CoVid?

GC: It is a "new" virus, for humans anyway, since it has been present for a long time in pangolin and bats (transmission is more likely to come from the latter). The genome sequence has demonstrated this. There is no need to imagine a plot by the US military or Chinese laboratories. Transmissions of this kind have already occurred: Ebola, AIDS where again conspiracy theories have arisen while the Pasteur teams in France and Cameroon (among others) have demonstrated the role of chimpanzees and/or the green monkey. It is an "emerging" virus, as was, in its time (2002-2003), SARS-CoV-1, responsible for SARS, also a coronavirus. They belong to the same family, which has nothing to do with flu viruses, but this coronavirus is clearly more contagious than SARS-CoV-1.

You're talking about emerging viruses. Was it "predictable"?

GC: Yes, and I refer to the excellent article in the March edition of *Le Monde diplomatique*. [2] The multiplication of epidemics and pandemics at ever closer intervals is for many eco-scientists linked to globalization: air transport (which takes us in a few hours where caravels took weeks) and road networks "open up" small villages which were previously isolated - which limited the spread - superimposed on the invasion/destruction of ecosystems for mercantile purposes, inevitably causing the "confrontation" of humanity with viruses with which it has had no recent contact. In our case, a new SARS epidemic was inevitable. Hence the existence of alert networks.

But was it predictable, could we have had preventive action?

GC: It is difficult to say "yes" since the ad hoc research was stopped before being successful. A little parallel with other viruses is useful. For flu, for example, we "anticipate" future mutations, so that we vaccinate each year against the epidemic that will occur. This does not exclude an unexpected mutation. This was the case with H1N1 (2009-2010), but the existence of teams on continuous alert on the subject made it possible to quickly hold a vaccine, and to vaccinate en masse. We know that mortality in Europe and the USA has been estimated excessively beforehand, which fuelled in 2010, and subsequently, suspicions of collusion between the WHO and the pharmaceutical industry to sell off an overproduction of vaccines.

Now, for the corona, it's a little bit the opposite. The structure of the corona viruses made it possible to envisage some common antigenic determinant (s) allowing the project of an anti-corona "pan vaccine". One of the best French specialists on this subject, Bruno Canard, deserves to be quoted at length: "We had just launched major structural genomics programs on viruses to try not to be caught off guard when it emerges. The approach is very simple: how to anticipate the behaviour of a virus that we do not know? Well, just by studying all the viruses known to have knowledge transferable to new viruses. A European project launched for this purpose at the time was followed by other programs. The emergence of SARS-CoV in 2003 illustrated the relevance of this approach. This led us to

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describe a first crystallographic structure in 2004. [...] I think that a lot of time was lost between 2003 and today to find medicines. By 2006, interest in SARS-CoV had disappeared; we didn't know if it was going to come back. We then had trouble funding our research. Europe has disengaged from these major anticipation projects in the name of taxpayer satisfaction. Now, when a virus emerges, researchers are asked to mobilize urgently and find a solution for the next day. Science does not work like that. It takes time and thought. [...] I thought of all the ANR (National Research Agency) projects that I have written, and which have not been selected. I thought about this Franco-German ANR project, which had no negative criticism, but whose evaluation lasted so long that I was told to re-submit it a year later, and then I was finally refused for lack of funds." [3]

Do you mean that research projects on "pan-vaccines" existed and were not funded?

GC: Yes. First, it takes time to write projects and submit them so as not to survive only with meagre recurring projects. Then you have to wait, and, in France, the projects selected by the National Research Agency are only a fraction of the projects submitted, and it is the same thing at the European level.

In addition, these projects are most often submitted in response to "calls for tender" which correspond to "cutting-edge", "priority", fashionable or "liable to significant openings" subjects... We see here, and I will come back to it, the danger of public-private collusion...

Do you mean that French research establishments are no longer subsidized as "before"?

GC: Yes. When I started research I worked very well with only recurring state credits (normally renewed from year to year). Then there appeared, at the end of the 1970s, the "programmed thematic actions". But they represented "icing on the cake". The situation quickly deteriorated under Chirac, then Sarkozy and Hollande. First, recurring credits - excluding large instruments and spatial programs - have been systematically trimmed, despite promises to reach the level, defined by Europe, of 2 then 3% of GDP... Currently, an INSERM laboratory – which is favoured compared to CNRS - works only at 25-30% on recurring credits, 15 to 20% for CNRS. Then came "private" funding, which certainly already existed (ARC, LNFCC for cancer, legacy to Pasteur or Curie), but a new scale was given by Telethon and Sidaction. Then the famous ANR projects.

You seem very critical about research on "projects"...

GC: Let's be clear: never at the Wellcome Research Institute or at the NIH (Bethesda, near Washington, USA) or in the years 1973-1974 then 1980-1981 during my project as an "exchange fellow" then "visiting scientist"", nor on my return under Mitterrand and even Chirac at the beginning. I certainly had - as we still have - an annual "activity report" evaluation, and the lab was evaluated every four years, with the submission of a new project for renewal or closure. Research in response on projects changes everything. Excluding themes that cannot be abandoned (research on AIDS is an example), that gives a lot of programmatic definitions by technocrats. However, as the demonstrators said at the time of "Saving Research", under Fillon, "the light bulb was not invented by making programs on extending the life and improving the brightness of the candle." Then came false claims about rising budgets, and in parallel job cuts ... and the advent of public-private partnerships.

Does the private sector play a role?

GC: For sure! Thank you Jospin, thank you Allègre (and also Geismar), and the research innovation law which makes it possible to create start-ups alongside its laboratory, but also the research tax credit, donation of billions of euros to the private sector without verified return, the Court of Audit also. In a certain number of cases, start-ups and large pharmaceutical companies become de facto co-directors of the public laboratory.

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And the posts?

GC: There, absolute disaster: fewer jobs, development of casualization - very clear in biology but not only there -, hence the first demonstrations under Fillon, and the recent demonstration of laboratory collectives.

Macron has announced an increase in the research budget over 10 years.

GC: First, the budget is not even there, as highlighted in the press release from the National Union of Scientific Researchers (SNCS). Then, we are used to these announcements. As long as there is no vote on this in Parliament, I would remain more than sceptical. For me, what matters is the current situation which is almost catastrophic.

So, the virus?

GC: Well, we could probably have had a vaccine and/or treatment ready... But that's an investment in the future. Not always at a loss. Sometimes yes. It's like gene amplification machines (PCR, Polymerase Chain Reaction) to detect the virus. Having an apparently oversized number would in fact have enabled large-scale screening and a Korean strategy. So, well, as Bruno Canard says, researchers are going to be mobilized in emergency on a "crash program"... Too little, too late. And there again, with an eye from the private sector which, since the 1990s, has invested little in real research, but has reaped the profits. While we refused between 2009 and 2019 to invest in fundamental projects.

Research, like hospital infrastructure, is an investment in the future and the public, not a short run, just in time, with precarious staff, for immediate profits. A policy let's say it, and we see it in every crisis, which is criminal.

PS:

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[1] CNRS: Conseil National de Recherche Scientifique (National Council for Scientific Resarch) and INSERM: Institut National de (National Institute of Health and Medical Research), France.

[2] In English Sonia Shah, *The Nation* 18 February 2020 "Think Exotic Animals Are to Blame for the Coronavirus? Think Again.", in French *Le Monde Diplomatique* 17 March 2020 "Contre les pandémies, l'écologie".

[3] lemonde.fr, 29 February 2020. "Face aux coronavirus, énormément de temps a été perdu pour trouver des médicaments".