

## DECONFINEMENT: IS SWITZERLAND GOING TOO FAST?

13 :23s

"...you mistrust Niel Ferguson... ...models that have proven to be so deceitful... »

DS: So, I totally agree with what my fellow scientists are saying. The problem is that this type of assertion that without the level of intervention we see, it would have had this degree of seriousness, it hasn't been falsified, it's already an error in characterizing reality. We know that validating these models is almost impossible; we have also tried to look, I am also one of these new epidemiologists. In fact I've worked a lot on epidemiological models but with applications to finance and earthquakes, so I have some experience. I have a great deal of experience actually with the problem of model validation; I've worked with the famous Los Alamos lab in New Mexico to validate models that predict nuclear explosions; so even more, let's say, sensitive; and the big lesson is that it's essentially impossible to validate these models. So indeed, very useful to make scenarios, "what if" as they say, what happens with such and such hypothesis, but the problem is that there is a great sensitivity with respect to the parameters. As you said in the summary, we make a hypothesis of  $R_0=1.2$  and this is what happens; it was Ferguson's hypothesis in England, the  $R_0$  was at 0.9, and 500,000 deaths! so indeed it's proposed as "if we do nothing, this is what would happen".

"No," said Didier Peter.

26.00 s "DS, your complex systemic analyses, are they sufficiently solid, what do they tell us, are they reassuring for parents who are scared to death, we will say it clearly before sending their children to school".

DS 26.08 s: I think there is a climate of fear that has been created which is, for me, excuse me, dear colleagues, very exaggerated. When you look for example, I've sent you some curves, I don't know if I can show it like that, ... "of course you can, I did not take them out because they are still quite complicated ", ... I'll explain them, for example I think we were the only ones who tried to do this analysis of the efficiency of the degree of confinement; in fact what we see is that all over the world we did experiments, as scientists like to do, it's an opportunity, the Taiwanese we talked about it, the South Koreans, the Swedes, we'll talk about it later, the French, the Swiss, each controlled their population in a different way, confined in a different way; and so we can look, in a factual way, at what happened; so obviously there are a lot of variables, and simply what we've used here is a very simple approach, it's to use the confinement severity index developed by a group of researchers in Oxford, based on a dozen criteria quantifying the degree of confinement, it's not ideal, but it's a first approximation. I won't go into detail, but what I'm showing here is simply the number of deaths per million in different countries based on this containment severity; and what you see is that there are 2 groups of countries, but basically you see in blue a very nice regression and you can quantify that containment works from a certain point of view, but you have to soften that statement right away, you reduce mortality by 50 people per million when you go from a Swedish containment to an Austrian containment. Order of magnitude : reduction of 50 deaths per million; So, it sounds wonderful, fantastic, but when you see for example that the 2014-2015 flu in Switzerland was at a much higher level in terms of mortality, indicated by the red lines here, you can ask yourself if indeed, and this is what we will discuss later, are the lives saved compensated for by the lives endangered, this is what we will discuss, this is the

type of approach that interests me, which is to look at all its components to try to make a judgment that informs decision making. The last point I would like to add is that often in political speeches and in speeches to the public, we tend to confuse possibilities and probabilities. This is about the precautionary principle, which is an extremely important principle, and my infectious disease colleagues are doing their job, the job of the WHO is to cry wolf' all the time! That's what they have to do, that's their job, but on the other hand, we also have to invite pediatricians, cardiologists, doctors of different specialties... My big criticism of the Macron government in France, for example, to take this case as an illustration, is that they only invited epidemiologists, a sociologist and an anthropologist, there is no pediatrician, there is no cardiologist, there is no other specialist, no economist, no industry manager, there is absolutely no integrated approach to look at the consequences, we'll talk about that later, life against life; it's not Swiss francs or economy against life, it's life against life. 28.57 s

"38.14 s, DS you're a professor of entrepreneurial risk, we're in the thick of it, there's going to be blood, there's going to be tears, we haven't seen the end of the bill yet? »

DS: Well, yes of course, the consequences are huge. That's the basis of my criticism and that's why you brought me to debate, as I said before, I agree with a policy of protection, of precaution, but if we push the precautionary principle, and I'll start with this general observation, we don't do anything more; When I teach my students, I start with risk, the first sentence I say is 'life is risk, risk is life', the only state where there is no more risk is when you are dead.

"You go even further, the absence of risk is death" 38.56 s

DS: the absence of risk is death and this is in fact thermodynamic equilibrium in physics. We are out of equilibrium when we live, with this flow of energy and materials that we consume (air, water, food). So then obviously all life is infinitely precious, but in fact not really because if we want to save one life and we are going to spend 1 billion, and besides this billion, I say a figure, could save many other lives. Let me give you a little quantitative illustration. Globally at the global level, the economic cost, in the short term, as we estimate it now, is of the order of 10% of the world's GDP, 10%, that is huge! The world's gross national product is 80 trillion Swiss francs or dollars, we are roughly at parity, 10% is 8 trillion, 8,000 billion, let's suppose that containment has saved 100,000 people; let's divide it up, we have spent 80 million per person, per life saved; if I am told that 1 million people have been saved, 1 million people is still 8 million per human life saved;

"That's a terrible calculation.

DS 40.04 s: It's awful, when you talk like that, you say you can't put a price on a human life. A human life has an infinite value; what we need to know is that politicians and all decision-makers, insurers and those who have responsibilities for allocating and arbitrating health care spending, must in fact put a price tag on lives, we should not hide reality, because indeed some health care spending is much more effective in saving lives than others. So the typical price that actuaries, the specialists who do this type of calculation, put on human life, for a full life, from 0 to 80-90 years, is around USD 6 million.

40.43s "That's the price of a human life, 6 million?! »

DS: it's the actuarial price of a human life. In fact there is a way that I propose of presenting this in much more humane and ethical, it's to say in fact we should look at it, and convert these 8 trillion or these 8 million for 1 million lives saved, into lives that we could save with this money; you all saw as I did the United Nations, for

example, with their food aid department around the world, reporting that there are 48 countries threatened, and they predict 200'000 to 300'000 deaths each day from hunger, due to the breakdown of supply chains. So we can begin to unravel the consequences in terms of lives at risk with an action that is extraordinary, when the specialists are going to say no, no, this is very important, etc., we must act on the precautionary principle, but for a severity of epidemic that is relatively modest all in all. I've been scratching my head for two months now, wondering why we are reacting like this by immobilizing the entire planet. Well the severity in terms of mortality seems to be 2 to 3 times, as a rough estimate we can make, the severity of a seasonal flu. Can we freeze in the future and threaten lives like this? 42.01s

47.49 s

DS: I am very surprised at this statement of consensus, with all due respect to my fellow epidemiologists. I try to develop an integrative approach, that's my job, to do systems thinking, to integrate disciplines. I am in fact a specialist in quite a few disciplines, and in addition I listen to the specialists of others, and I am part of a network of 250 world experts in infectious diseases, covering part of the Anglo-Saxon world. The debate that I see there is not at all a consensus, particularly on the figures. The public thinks that there is a consensus among epidemiologists, in my opinion that is not at all what emerges from the debates to which I have access; and the second thing is that in this discussion, there is always a tendency to oppose in a caricatured way 'laissez faire' and full confinement. If you understood me as I am the apostle of laissez faire or total containment, that is not at all the case. The lesson that we must learn from Asia in particular, and also from the curve that I will show shortly, is that there is a whole gradual set of measures, and the big issue is to integrate all aspects in a systemic way to save lives, all lives.

"We understood your message Didier Sornette, "

48.5s DS: we must not polarize, we need graduated approaches. The politicians of Western countries made decisions. The question I ask is: were they optimal, given the information available at the time, especially what was happening in China. We did not have perfect information, but we could already extrapolate quite a bit, so that is in fact the question I am asking: there is probably a question to be asked again, for the future, to re-examine the answers given, the measures taken and in particular the degree of containment, its costs and its awful unintended consequences. 49.24s

53.37s " didier sornette, the case is heard, for you the swedes did right ? »

DS 53.40s: you can't say anything for certain in science, right? So I'm going to show you a second curve that we update every day on our site. This figure is very interesting because it compares a lot of countries, in mortality per million, according to the time lag between the start of the epidemic in each country. So you have 100 deaths per million for Austria, 200 deaths per million for Switzerland, 400 deaths per million for France and 800 deaths per million for Belgium. The trajectories of different countries are very different. We can see that Sweden performs less well in terms of deaths per million than Switzerland.

DS: We can also see that in Switzerland, we're among the rather good performers, we're now at over 95%, almost 99% of our epidemic, we've reached the plateau, so it's very good. We see the bad students, for example Belgium, which has had catastrophic treatment, especially of their elderly people and these units (establishments for dependent elderly people). On the other hand, we see that Sweden, it's the dotted line here, behaves less well indeed than their Norwegian or Danish peers, but much better than France or Italy! So the question, again, when

<https://www.rts.ch/play/tv/infrarouge/video/deconfinement-la-suisse-va-t-elle-trop-vite?id=11304498>

English transcription

comparing the mortality of a seasonal flu and of other diseases, we have to consider all the costs and the consequences on all the other dimensions; so we can see that with their strategy that has just been described, they do better than France. 55.01s

58.40s "Didier Sornette, people are really afraid, for their children for their grandparents, what do you tell them, we take the risk? »

DS: What I tell them, what I see is an epidemic of fear in the world, which is extremely negative, for health and for many other consequences. I have children too, so I'm in the same situation, they're a little bit older, I hope I'll have grand-children later on, so yes, you have to take a lot of precautions, but living in fear is even worse in my opinion, and on the other hand, one question that came up in Covid 19 is how come we reacted so much, I've already raised the question; I think we're in a very dangerous phase, for me it's a revelation of a very dangerous phase. So I would like to propose in fact to generalize the debate, on the way in which we manage to polarize the population and opinions in a global, macroscopic world manner, and therefore for me, this augurs extremely dangerous future phases in world society. And it's probably an evolution that started 10 to 20 years ago, that started with the first jolts of the war in Iraq and the fear of terrorism that finally derives from dangerous people representing 0.00001% of the population and finally costs hundreds of billions with all the security problems and terrible consequences; we are in that phase, that's in my opinion what Covid-19 has revealed.... and what I will say in conclusion, if I may, something that has not been said and which in my opinion is a deficit in the existing approaches, we have implemented approaches to increase the resilience of societies. I would suggest that we should also return to work on individual resilience; and this is not discussed; and this is what is needed in fact to complement political, medical and other approaches. 1.00.32s