



**Nicolas Buclet**

**English Translation**

*"Climate change, social inequalities and public policies"*

Thank you, Romain.

Hello everyone. I'm delighted to be here. I'd like to take this opportunity to speak to you about the link between climate change and social inequality that has been discussed by economists.

So, what I will be presenting is based on work by economists. Curiously enough, I have the impression that in spite of economists like Thomas Piketty, who are very well-known individuals, and Lucas Chancel, not much is said about what this represents with respect to the issues of combating climate change. So I'd like to go over this a bit and see what things look like worldwide and what it implies for public policy to take into account certain aspects that are still not sufficiently appreciated by the people who are supposed to decide for us.

And yes, I forgot, in addition to Romain's presentation, I forgot to say that I, too, was trained as an economist but I left economics quite a few years ago because it's a field that didn't suit me. I'm in urban planning and development, which has the advantage of allowing approaches that are much more interdisciplinary. I thought I should mention this. Within the PACTE laboratory, we come from many different fields. So, I'm in urban planning and development, and it's a fact that for a long time now-- almost too long to count-- I've been working on environmental issues. But it's only been recently that I've realized to what extent the issues of inequality should be considered in parallel with the issues of climate change. Otherwise, we won't get anywhere. I will try to show you why we wouldn't get anywhere.

Indeed, we can start by observing that, when we speak of global changes, when we speak of climate changes, the issue of social inequality is pretty much ignored. And our public policies are more or less effective. These days we also see, and I'm sorry because this conference has been organized by the City of Grenoble. But it's true that when we see that the air is frequently bad in the urban area, we tell ourselves that in spite of the public policies that are implemented, there is still a problem. But there are public policies that try to do something. There are also public policies that try very cautiously to take into account the issues of inequality; for example, on the access to heating by the disadvantaged, and so on. However, not many measures have been taken on global changes that are linked to these issues of social inequality.

I have some graphs you might be familiar with, that some of you are undoubtedly familiar with. They show the evolution of greenhouse gas emissions. There are lots of graphs that circulate around the world, but these are interesting because they allow us to see the evolution over time. This evolution is...

What's interesting is that what we don't find very often is that they count international maritime and air transport. We can see that, effectively enough, it increases, but even if it increases, it remains something minimal as compared to the emissions of certain countries. As you can see, the European Union tends to show a slight reduction in emissions, but, as you probably know, the main cause of this reduction is because of delocalization.

And where do we delocalize?

Most notably in China. So, strangely enough, China sees a spectacular increase in emissions, whereas the United States, Japan, and Europe suddenly appear virtuous. Well no; it's because we've delocalized our impact to China. So then we can say, "Oh, the bad Chinese, the naughty Chinese." But no; there they are, and we'll see this again. We'll see it with the pandemic. When they stop, we're in trouble, even more than they are, as concerns our consumer habits and so on. What I wanted to show you in this respect is that most representations of greenhouse gas emissions tend to be by country. The countries are emitting things. So, I'm going to show you something else about the countries. If we work only with country figures, we can't be aware of inequalities within the country or even between countries. So this is a graph that I often show to students, charting how greenhouse gas emissions are distributed by business worldwide. You can see the figures.

What I'm interested in here is in showing you in particular that worldwide in 2004-- it's increased since then-- transport represented 16% of greenhouse gas emissions. And if we compare, if we look at the figures for 2004, for two wealthy countries, the United States and France, we see that in the U.S., road transport is greater than other kinds of transport. And remember that international transport is never included in these statistics. It's separate. International maritime and air transport are not included. Nonetheless, 31% of greenhouse gas emissions in the U.S. are tied to this. And this is twice the worldwide average. Now that's interesting. But you'll say, yes, that's normal, the United States is a big country; people have to travel a lot, etc., etc. Maybe, but let's have a look at France, and France is a whole lot smaller. Remember that France is about the size of Texas. So, everything is relative; even if we're a big country on the European scale, this is very relative. We're still at 28%. 28% of greenhouse gases are emitted by transport. In this case, we can't say, "Yes, but France is so big that this is normal." Let's compare two other countries, the United States and China in 2007. The figures are pretty comparable. The United States is still at 31%, so nothing has changed in a spectacular way. And China is at 8% in 2007. It's true that China is rather small, so this is normal. People don't need to drive. So you can see that this has nothing to do with how big a country is, and we can see that China in 2007, which was not the powerful country it is today. It was, in fact, relatively poor in 2007, although it began to really grow. However, it was still half of the worldwide average. Here, we realize that there is already a major first form of inequality in mobility. This is what is so striking when we look at the different countries: it's mobility.

In fact, what we see is that a large part of the way we consume is tied to our mobility, whether it's virtual mobility or mobility for recreation, transporting merchandise and so on. Mobility is truly the sector that reveals the greatest inequality that we perceive between countries. There's a very well-known paper that's already a few years old on the issues of wealth and mobility. So, there are types of-- a child didn't scribble this-- These lines represent the correlation between GDP per inhabitant, which we still consider to be maybe not the best, but almost the only way to measure the wealth of a country: the GDP per inhabitant. The higher the GDP, the richer the country. And then on the ordinates--and I'm not responsible for the spelling error-- it's a diagram I found. By the way, I forgot to indicate the source. The number of kilometres covered per person and per vehicle.

And what do we see?

We see several things. There's a correlation. We can clearly see that the richer the country, the more people drive, the more kilometres they cover. So, this is the first observation. It corroborates what I just showed: that the wealthier the country the more mobility becomes a major factor in consumption.

I'll get back to this again with respect to public policy. However, there are other things that can be considered as relatively positive. Even in a wealthy country people are not obliged to drive so much. Look at Japan. Japan, for instance, has a very, very good railway infrastructure. We can see the total number of kilometres, the undergrounds, etc., the number of kilometres per inhabitant, on equal wealth conditions, because if we take this point, the highest for Japan, they are as wealthy as the United States was at that time.

You can see that they drove only half as much as the Americans. So it's not inevitable, really. We mustn't say, "Oh, we're using a model where people are obliged to drive more; it's normal. It's a consequence of development in our societies"

So, there are major disparities. Although we could say that in Japan, there is less circulation and the country is smaller, we can still find a certain number of figures showing that in North America there is much less infrastructure as an alternative to roads, or to planes for that matter. But that, that's another story.

Well, since alternatives to the road are absent, well, many more kilometres are covered. In any case, we can say that this mobility is a feature of wealthy countries. So there, we can think about local public policy, for example. Because we can say that the richer we are, the more we drive cars. I think that beyond a certain level of wealth, we don't travel in cars, but rather in private jets. That's something else entirely. I don't know whether this is taken into account. But on the average for wealthy countries, we see this evidence.

Now here is another graph showing CO2 emissions per inhabitant per year, expressed in kilos. A comparison between 1990 and 2007. We are trying to compare countries; first, to follow their evolution between 1990 and 2007, and second, to try to compare countries. So, in fact, if we were all like Bangladesh, I think we wouldn't talk so much about problems. At the same time, it would be difficult to make many inhabitants in lots of countries around the world agree that everyone should live the way an average person lives in Bangladesh. That would be rather complicated. You see that Africa has been put in one block. Well...

Sorry, but in the end, Africa is currently sustainable, in any case from the standpoint of climate change. India, too. And that's a big relief. Because in India there are roughly as many inhabitants as in China. But they're people who are at a certain level. That said, if you take a look-- I don't know-- if you look at it from a distance, it's increasing everywhere in spite of everything, in these countries. Between 1990 and 2007, India almost doubled emissions per inhabitant. What this means is that in spite of everything, we're going downhill. Latin America has also been put in a block. But at the same time, Brazil is off to the side. It's not me who's responsible for this. I picked up this diagram. So you can see that China has more than doubled. That's due to the delocalization effect. But there's more to it than that. There is an urban class in China, and I'll get back to this, that also consumes a lot. You see, what is interesting is that in 2007, Sweden emitted per habitant about as much as China and Portugal!

And this is especially interesting, because when we look at the Swedish lifestyle as compared to the Portuguese or to the Chinese, we say to ourselves that Sweden is most certainly a country, a country considered to be one of the world's most developed. And, finally, perhaps there is no inevitability.

First of all, it's lower, obviously this is because of delocalization, but not only. Some would say that it's thanks to nuclear power. I don't know. However, in Finland there's also nuclear power, but look. They are much higher. So we can't say yes, it's normal the Scandinavians have always... No, there's no correlation. It's probably more related to public policies. But we see it's not inevitable. In any case, a wealthy country can certainly emit much less, because from a material point of view, a Swede or an Australian-- I don't know if there's a big difference--however, an Australian emits a whole lot more. They exceeded in 2007 per inhabitant. From then on, they exceeded the Americans. You know that in the United States many of the states try to act. In Australia, it's a dead calm. That is, they see climate change arriving and they're suffering from its serious consequences.

Anyway. I just wanted to mention in this respect that we have lots of representations by country. I have others. You see; just to show you the diversity.

Here, we see the evolution from 1820 to 2015, almost 2015. The evolution of the proportion of emissions, historically. Obviously, at the start things happened mostly in Europe, in terms of greenhouse gas emissions in 1820. So, the European share is normal. Finally, there was a bit in the United States, a bit in Russia, but almost nothing. And you can see throughout history the European Union and its annual share...

Yes, it should be read; excuse me, it should be read by saying that each year, in which part of the world, greenhouse gas emissions occur. And you can see that the European Union continues to drop. Not because emissions are lower. Unfortunately, it's because the others have increased their emissions.

As we see, there are a multitude of representations. We can find many others that show a reasoning by country. What I'm getting at is precisely the work of Piketty and Chancel, Thomas Piketty and Chancel, who show us something else in fact; something that is much more interesting. This is greenhouse gas emissions according to the wealth of individuals, whatever their country. And that changes everything, as I see it. Lucas Chancel is more specialized on environmental issues. It's not so much Thomas Piketty, although Thomas Piketty is very much interested in the issue of inequality. They worked together and already included imported emissions.

"Imported emissions" refers to what I consume--for instance, I consume this computer-- which comes from another country. I should be attributed, and not the one who produces it, the greenhouse gas emissions linked to this computer. So, my assessment-- in spite of what I want--takes a hit. So, when we see this, people in the U.S., people in Australia, are not included because they aren't very numerous. Therefore, per inhabitant, maybe, what they do doesn't look so good. But globally, Australia is a small country from a demographic standpoint. It's big, but there aren't many people. So someone in the U.S. emits 22.5 tons of CO<sub>2</sub> per year. You see that we, poor miserable creatures, emit 13.1 tons of CO<sub>2</sub> per year, which is way too much, but it's still only half of what the Americans emit. We probably have a slightly lower standard of living, although when we look at certain indicators like life expectancy, we tell ourselves maybe not. Europe is not less developed than the United States in many ways. We can see that people who live in the Middle East, who have the advantage of lots of local petroleum, have a footprint that is much lower than ours, but which is still large. The Chinese--this is in 2015. The figures, the figures correspond to 2012, so ten years ago. The Chinese were in the global average at the time. Since then, things haven't improved. And then we look at the African continent, where the rate is 1.9 tons per year. So we can say, yes, really, we can see that; we can see that this adds to the story of imported emissions. This increases even more the difference between rich and poor countries. It's very clear.

Don't you agree?

But where Piketty and Chancel go further is by analysing, as I mentioned, the wealthier individuals, the people with a middle-income level, and the poorest individuals, worldwide and not by country. So, if we look at the 10% wealthiest on the planet, 10% is responsible for 50% of greenhouse gas emissions.

This is enormous!

The 50% of worldwide population at the poorest level emits only 13% of greenhouse gas emissions. But we say, "Oh, that's normal. We were already seeing that before." but we're going to have a look at the richest and the poorest. The top 1% of the wealthiest, who live, of course, in the United States, Luxembourg, Singapore and Saudi Arabia, as well as in other countries, this 1% is responsible for 14% of emissions. That is, this is exponential. This is what Piketty shows.

We find the same phenomena as those in the work of Thomas Piketty, as concerns social inequality, in terms of revenue. It's exponential; that is, with the top 10% it's already a lot. If we look at the top 1%, it's enormous! And if we were to look at the top .001%, we'd obtain something astronomical! The 10% of poorest individuals emit only 1% of greenhouse gases. In addition, when we hear some of the things I've heard: we are told that we need to make policies to combat climate change or that we need to control demography. There are surely some good reasons to control demography, but controlling demography in countries where the birth rate is too high, such as Ethiopia. And even programs-- there are lots of English who participate in movements that focus on controlling the population. But even if a woman in Ethiopia, a poor woman with ten children, in terms of greenhouse gas emissions, represents nothing as compared to a wealthy family with one child. And this only child will emit much more than her ten children.

In sum, this means that we have a tendency--I've seen this in lots of environmental areas-- we tend to, how should I say, we tend to consider that the poor are responsible in large part for the destruction of the environment.

Well, well...

To return to the work of Piketty and Chancel, where are the wealthy found?

This is where things get interesting. So, 40% are in North America, 19% in the European Union. Look here, for example, you can't see it very well. In any case, the projection is not extraordinary; but in sub-Saharan Africa there is even 2%. In spite of everything, 2% of the wealthiest are found in sub-Saharan Africa. In Latin America, it's even 5%. We say that these are poor countries, so they're not responsible for anything.

But it's not true!

They contribute with their upper class, with the elite that earns money. There are very major social inequalities. This, by the way, is what Chancel and Piketty show. The greater the social inequality in a country, the more we observe that greenhouse gas emissions tend to be high at an equivalent level of wealth.

So, here we have the wealthiest. Next, the middle classes, which are 40% of the population, and they are responsible for 42% of worldwide emissions. The Chinese are 35%. They represent 10% of the wealthiest. Ten percent of the wealthiest are in China. The European Union is 18%, and so on. Obviously, 50% will be among the poorest. India counts for 36%. Remember that what characterizes India is that it's still 70% rural. What probably saves us is that India remains a rural country. However, the urban proportion tends to increase. China is 16%, Sub-Saharan Africa is 10%, and so on.

So, obviously, there is no more European Union and no more United States. There is no more of any of that.

Another element presented by Chancel and Piketty shows, as I mentioned, that the inequality of global CO2 emissions can be increasingly explained by inequality inside the countries rather than by between countries. And I feel that this is a very powerful conclusion. This shows us that it's not due to countries--we see that here. That is, the level of inequality tends to increase inside each country on a worldwide scale and tends to decrease between countries worldwide. In fact, we find something that existed already before the 20<sup>th</sup> century. Before World War I, say; that is, when there was a wealthy class worldwide, not too big, but spread around most of the globe, and when most of the population was poor, which justified, by the way, certain types of votes. Some have begun to emit hypotheses, for example, the correlation between the vote for Trump and the fact that life expectancy for whites—because as you know, in the U.S. people are classified by race-- Non-educated whites in the United States have a life expectancy that's dropping fast and they feel a loss of social status. And precisely this partly explains their enthusiasm for a certain type of candidate who promises many things. I am perhaps taking more time than what was allotted to me, but I still have a few minutes.

So, there's a great French cartoonist named Sempé, who, already in 1962, understood a great many things about the relationship between the rich and the poor. And so here, we are most likely at the end of the 19th century. There's a worker-- I don't know if you can see him well. It's the drawing with the best graphic definition. He looks a bit sullen. And this is perhaps his boss, leaving his beautiful home with one of the very first bicycles. He looks very satisfied. A few years later, we see an evolution. In the early 20<sup>th</sup> century, the worker is still on foot, but now the boss has acquired one of the first cars. We see that exhaust has begun to appear. There are electric wires, so electrification has begun. Time rolls on. The worker should be happy now that he has a bike. But no, because the boss now has a nice car. The worker looks at him with envy. Then we see the buildings that are starting to be built, we see modernity. And now, there's a Solex, a Solex. For those of you who aren't French, it's the symbol of a certain epoch. It's part bike, part scooter. So, now he has a Solex. He should be happy, but a great big gas guzzler appears, and we see a few other cars. Cars are becoming more democratic and finally, in 1962, what happens?

The worker should be happy because now he has a car. But it's a "two steam-horses". The real problem is that the boss has seen the traffic jams. And what does he do? He rides off calmly on a bike. So what is the moral of this series of drawings? The wealthy classes always get ahead by escaping from the masses. The wealthy classes drive the movement; they create the desire. The rest of the population wants to be like them. So here we have a basic exemplarity.

In this case, perhaps we should say about the last drawing: It's reassuring, the boss is on a bike; that's good. In the end, everyone will want to be on a bike like him. Except that there's the third point; And the third point is the barbecue effect. Maybe some of you know the barbecue effect. We can give an example: Many Parisians, for instance, don't own a car. And they're very happy, very proud even, to not have a car because they don't pollute. And then there are the horrible suburbanites who bring their car into the city and pollute, and so on. So, there's a bit of stigmatizing the suburbanites who live in their single home and come in their car, and their behaviour is absolutely non-sustainable, whereas I, I take the metro, I ride a bike, etc., etc. But what's the barbecue effect? What happens on the weekend? When the suburbanites are at home, maybe they barbecue or do something else, and they no longer travel around. In the end, they behave in a certain way. A barbecue is not very good for air pollution-- but, well, except for that, it's very insignificant with respect to climate change. They behave like people who enjoy. But what do the Parisians do? Today we have low-cost airlines. They'll

take a little weekend trip to Rome and maybe spend another weekend in London. And so we go, and so we travel. And we get back to the mobility I spoke to you about previously. That is, what characterizes the upper classes is Endless as regards their relationship to mobility, where the world is a vast area made for recreational consumption. I'd like to point out that if we want to make changes, we need to-- in fact-- we need to make change desirable. And how do we make change desirable? Somehow we need to ensure that the dominant classes acquire more virtuous behaviours. That's easy to say, but in fact, it's probably one of the most difficult things to achieve. But if we don't do this, there is only one other solution, which is much more radical. I'll get back to it later. But in any case, the first solution would be to say to the dominant classes and also-- sorry, I'll get back to that-- So, public policies and inequalities, as I said I would also talk to you about that, a bit about public policy.

As I mentioned, in a rather logical way we implement measures; for example, we try to keep the most polluting vehicles-- and lots of other cities do this-- out of Grenoble and other cities.

We try to get rid of the most polluting heating methods. But actually, per kilometre covered, people who have old cars, which are very polluting, have a much greater impact per kilometre driven. But as I just showed you, there is a very, very clear correlation between the number of kilometres covered and, in short, wealth. Perhaps they have a vehicle that pollutes more, but how many kilometres do they really cover? I think, and there has been works on this; I think that in particular the City of Brussels studied this because the city wanted to implement public policies to drastically limit the most polluting vehicles. But in fact, they did works that show that disadvantaged individuals-- for example, people who have jobs that oblige them to start at 4 a.m.-- they must get to work and public transportation doesn't allow them to do this. Lots of kilometres at four in the morning; they use their car. And since they are people who don't have the means to buy a new car, a non-polluting car, even though we also create vehicles that are heavier in order to compensate, Because being virtuous has its limits. So we'll make big Hummers and others. They're not the ones who have them. They have old cars that pollute, that they use because of need and not for pleasure. So, a question arises, and I think that public policies don't ask enough questions. We need to think about whether we are affecting people That have the choice to do otherwise or not. I think that our public policies on the environment should-- and I'm thinking about the Yellow Vest movement-- show in the end that I'm right, unfortunately.

Well, we tend to implement measures. We say they're for the environment, and they are good; but in fact they affect those who have no alternative. The wealthier individuals have no difficulty in finding alternatives. This is what I showed you with Sempé's drawing. So, the poorest individuals, don't have a choice. And we should take into account before imposing restrictive measures how much choice individuals have. So, what incentives exist today?

There are incentives. They are interesting, but they exclude the poorest. A bonus for buying a car is a good thing, but, in short, the poorest won't benefit from these bonuses. The middle classes maybe. So this is very good, but it's not enough for the poorest. It excludes the poorest. So how do we give more choice to the less wealthy? In my opinion, we need the means to design environmental public policies that won't affect the disadvantaged. Well, here is where I propose something more radical. Since the wealthy don't seem to understand, we will tax them, tax their income and tax the wealthiest assets. Here, I'd like to remind you that the work of Thomas Piketty shows this. It's not true that this is not possible. After World War II, the United States and the United Kingdom had a taxation rate on the highest incomes that was from 90-95%. And the countries were rebuilt in this way. Now, with the possibilities of tax evasion, of using a tax haven, and so on, we know that the truly wealthiest can totally avoid paying taxes. This is why the burden is on the middle classes, and that creates other problems.; And Thomas Piketty said this: that taxation should be much more

radical, inheritance taxes, too. He did some very interesting work on inheritance. I recommend this work to you. Perhaps we should finance in a total way the services offered to the poorest. In addition, I think, and I know I'm partial, I know it's very controversial and that we could fight over it, but cities have begun to avoid charging for access to public transportation. I'm for this for the reasons I mention, and we'd have to figure out how to pay for it. But I would go in this direction. And perhaps there are other ways, like applying a differential taxation to basic goods. And I include cultural goods and luxury goods in the taxation categories, for automobiles and such.

So, you see, it's easy to say. I'm not a politician. But I found that in preparing this presentation, I thought about this, and I had probably thought about it a bit earlier. But then I was told it's not possible, etc., etc. I think this is better than doing like the Shadocks, who pumped emptiness.

Thank you for your attention.