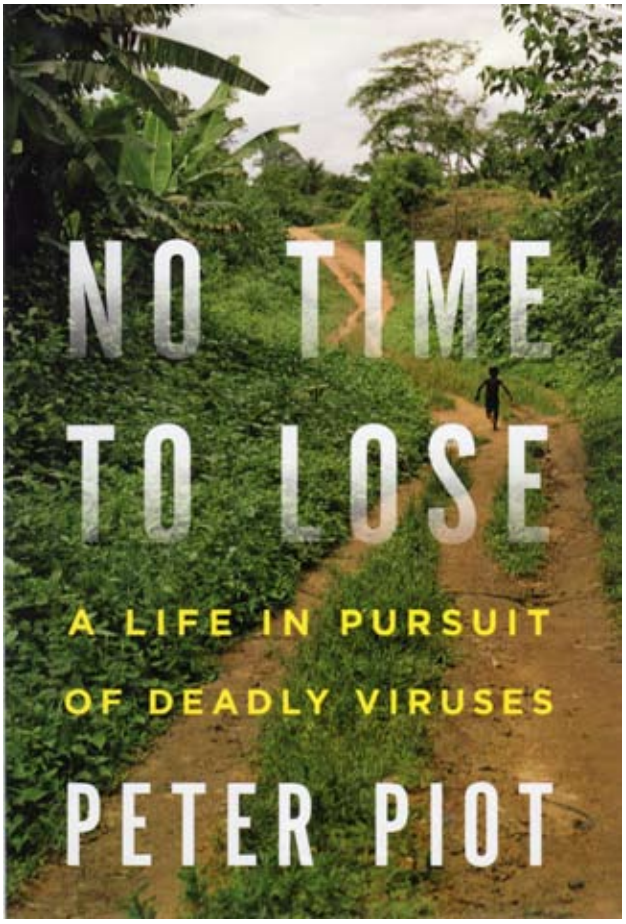
No time to lose

Science, research, policy and policies against viruses: a journey through time, in the last 40 years of global health together with Peter Piot and his last book.

"Sorry, I'm late", says to me Peter Piot reaching me less than 10 minutes after the planned time for a 45 minutes of interview. It's natural for me to laugh about his "I'm late": the focus of the interview is Piot's last book "No time to lose". Any wasting time, the book is wonderful: it is about his "trip" around the world in fighting against viruses, from the isolation of Ebola until today here in the London School of Hygiene and Tropical Medicine, were is the Director. After the lunch with his daughter he decided to take some ice cream for his staff in the office… "there is a wonderful shop.. they make probably the best ice cream in London..", he tells me explaining why he is just arrived. He is a scientist, and advocate, a manager of viral investigation and operative research, but he is also a fine expert of food and wine –and I had in the past the opportunity to speak together about this our common passion.

As it is known, now he is the director of a legendary school of medicine. When he was a young researcher Piot was the first scientist who isolated Ebola, he joined Jonathan Mann in Zaire running the first AIDS program in the world, he was also undersecretary general of the United Nation and executive director of UNAIDS…. When he was student a professor took him aside and warned him, "there's no future in infectious disease. They've all been solved". Piot ignored his advised, as he writes in his book… "it is going to be translated and published also in Japan" say to me with a mix of pride and surprise.. In Japan.. I remember the Yokohama conference in 1994. During the opening ceremony the HIV person who gave his speech was an hemophiliac person who got HIV because ofa transfusion. At that time no gay people or IDVUs in Japan or sexual promiscuity: this seemed to be the message. "Yes, indeed. But things have changed now. I was there a week ago and I spoke at their National Aids Conference: there were 1500 people and a also activist and gay men. It's changing now, because the number is going up, particularly in gay men. It's really a very steep curve, so they are catching up with the past". The past: this book is about time, and about the commitment of a person who had the chance to be a scientist, a traveler, a PR man working in the UN, and an advocate for human rights all over the world.



Let say that if we don't want to lose time we must act everywhere in a tailored way.

Time and space are the resources and the dimensions for our decisions. In your book, the page after the title is the map of Africa: It is because HIV is Africa?

"No, HIV is global. I think that's one of the remarkable things about it: it affects everybody. Here in the UK, in the United Kingdom every day there are 20 people who become infected with HIV. Of course it's not like in South Africa, but it's all over. The map of Africa is there because a lot of my life and work was in Africa from the discovery of Ebola virus. I thought that the readers may not be familiar with all the names, so the map is to help them. It's like I like to read books of Donna Leon[1] is like but

detective stories in Venice, and so there is a map and you can follow where the Commissario Brunetti goes, yes."

You start you book with the story of a young boy who likes to go with his bicycle in a village not so far from his home where there is a special museum devoted to a priest who spent his life in fighting against leprosy in a Caribbean island: father Damien, now Saint Damien of Molokai…

"Absolutely, I come from a small village in Flanders. When I was 10 years I had one major goal in life and it was to get out of there and to go to see the world because it was a very suffocating, very conservative, very Catholic type of village, old-style. Today is completely changed, but this is the 50s,… But the village next door was the birthplace of Father Damien who is now a Saint and who really is the local hero and rightly so: he took care of people with leprosy in Hawaii and he died from leprosy. It was at the risk of his own life and before there was any treatment. In this village there was a museum, a small museum where he was born and it was about injustice, about disease. For me it was very influential in what I wanted to do and I decided I want to help the poor in these days and fight injustice and do something for people who are discriminated."

The first part of your book -that has the word "time" in his wording- is about your discovery of Ebola, the involvement of Belgium in fighting against Ebola and about some attitude linked to colonial and postcolonial attitude, as outcome of the history of Africa in 18-19th centuries. In the same period time became geography. Let me add that a person working in the infectious disease field is absolutely involved in dealing together with time and space, that means geography…

"Yes, it's true. Certainly, everyday more and more we are smaller and smaller as a world, and a epidemic that is happening 5000 km from us can affect us. Think of SARS: a few years ago we had this new virus that killed a few people in Singapore and in Hong Kong and then in Canada and after all only 200-300 people were killed with it. I mean it's a lot, but actually the economic cost was billions and billions: it interrupted travels and so on and so in this case time and geography got completely mixed up and so that's one of the reasons why I think that, even in Europe, we have to be really mindful and to invest in fighting epidemics and infectious diseases even far away because they will affect us as well."

After the map of Africa, you start your book with two quotes[2], one by Nelson Mandela and one by Jonathan Mann. In the book you write a lot about your relationship with Jonathan Mann affirming that he is your moral authority. Can you remember something about Jonathan Mann?

"I quote Jonathan Mann and Nelson Mandela because in a sense they are not only media figures and heroes and icons. Yes, that's part of the our society, of *societe du spectacle* that we have in this world, but I quote them also because through their example and their thinking they have changed things. For

Jonathan Mann particularly I remember when he said that AIDS, this AIDS epidemic is about human rights violations. To be honest, for me in the beginning … I didn't fully understand that. Of course I knew there was discrimination and all that, I agree, but he went further and said that if we have an epidemic is because the rights of marginalized groups particularly, gay men or sex workers and so on, are not respected and because of that they are vulnerable. The same is true for a whole continent, for Sub-Saharan Africa because of colonialism. So that for me was quite important thinking. Jonathan Mann was the first Director of the Global Program on AIDS in WHO and thanks to his emphasis on human rights I think the whole movement was put into that direction that we still feel today. I think that was very, very good because there could have been someone who could have said ok, quarantine, you know, very old-style infectious disease control which we know doesn't work but it would have made a big difference. So, Mann made a difference in history."

It's interesting because –once again- the concept of quarantine is related to time and space…

"Yes, but quarantine may work if it's for something that is short-lived, for example for Ebola. You isolate people and because one week after infection you know if they are dead or alive, let's say it's simple. But with HIV you cannot quarantine 35 million of people forever, for the rest of their life, it's even unpractical, I am not even talking about human rights issues, just very pragmatically it doesn't work."

As a scientist, you started to work without PC, without fax, without mail. In your lab you have received samples from the future Ebola sent from Africa in a thermos with some ice. How do you feel the difference between fighting against a new enemy like Ebola and starting to deal with HIV, a new epidemic using PC, fax and internet? Your story at the beginning of the book, the story of the discovery of Ebola in your lab, was a demonstration that it is crucial to be part of a network.

"It is true. Today, when I tell students about the fact that there was a time when the mobile phone did not exist and we had no fax even, no internet, no email, they look at me as I come from the Stone Age. You wonder how we did and for example with the Ebola virus: when we had it, we saw under the microscope, the electron microscope, a virus with a specific form like a worm. We thought ok, this looks like Marburg but what did we have to do? We had to go to a library to find an atlas with all the images of viruses, to go through that and we said oh, it looks like that and so on. Today what we do? You Google and it's a matter of second and you see it. But it was great already. That's the same thing as today -let's say people who are connected through Facebook: is that there was a network of scientists, very few, who were working on the same thing and we would communicate, but the time and the costs for communication were expensive. We had telex and telegrams and the rest was by letter. Yes, it's a very different time. Today it's paradoxical: because of a smaller world and fast travel, viruses would spread much faster than before. On the other hand we are also much faster in our response, but how? Which is the race? Who is going to win? I think the viruses will always win because also we don't know where the next epidemic is coming from. Think about the last influenza, flu epidemic: we were all looking at China and South East Asia and so on and then it pops up in Mexico where nobody was expecting it. So, that the differences: we are much more able to diagnose it very early on and to start also developing maybe treatment or a vaccine, although we still don't have a vaccine for HIV."

It seems that the quote of Pasteur that microbes will have the last word is still correct…

"I think Pasteur said that too, in the French Academy of Sciences and he said Messieurs, because they were only men those days, and he said that microbes will have the last word and I think he is right, even for bacteria although we have antibiotics but they become resistant against antibiotics. So it's always a race between what is happening in nature and what we can do as human beings with our brains and technology to stop it."

When you were a boy you have decided to travel and to be a sort of detective, combining the work in the labs with the ground experience. Also the impact of the ground experience is now changed: interestingly in your book you tell that the Lancet refused a paper because it was about an African region and referees said it was too much particular. Now it is completely different…

"Times have changed also. Indeed, our first paper describing that there was in Central Africa a major heterosexual epidemic, which was kind of real world news. The Lancet said "oh, only of local importance" and so on and in those days it was very hard to publish anything on, you know, in terms of what we call a global health or health in Africa. Today the Lancet is like the megaphone for global health and for news about health all over the world. This illustrates how the world has changed, the word global health, the word was kind of created and popped up around maybe 2000, so that's slightly over ten years ago, we are talking about 40 years ago nearly for Ebola."

Do you think that in some way epidemics help science, the progress of science?

"Yes, but I am not sure that there are more new viruses and more new bacteria in nature, but what is new is that now we have the technical capacity and also the networks all over the world to detect new viruses. That is by itself a good news, but it means that we will be able to, we have to move faster to

detect them. For example in Uganda, over the last couple of months, it has seen an outbreak of Ebola virus, an outbreak of Marburg virus. But now in Entebbe, where the airport is, and in Lake Victoria in Uganda, they can diagnose, they can do a test. Before, you had to ship the sample to Atlanta or to a high-security lab here near London, which would have then taken a lot of time and shipping those kind of samples is of course not so easy."

You are saying that today it is not again in use thermos as a refrigerated box to send samples of deadly viruses around the world…

"True. When you think of it in the 70s, I would just take a regular plane, a commercial plane, and with a thermos with a bit of dry ice in there and some dangerous virus and it was ok. Today I think you would go to jail for that, there are international regulations. In my book I tried to tell the story as it is: we made many mistakes, we were not always using safe practices, but one we didn't know or the times where very different from today."

Do you think it is possible to say that HIV helped to create the concept of global health?

"I think absolutely that AIDS epidemic changed how we looked at health and it created global health, to say so. One, it really was the first disease, global disease, that got global media attention and also attention in every country, also because it's present in every country, but it was also picked up by the media. In addition to that, it is the first health problem that made it to the top of the political agenda: it was discussed in the Security Council in the first meeting ever of the millennium in January the 9th of 2000. It was the first health problem that the UN General Assembly devoted a whole three days on it with 45 Heads of State and Heads of Government and I think it changed other things. It changed the fact that new pharmaceutical drugs that are still under patent, traditionally available only for the high-income countries and rich people, because we said no, these drugs became available everywhere: that changed."

You say that drugs must be available at any time an everywhere. Thanks to the HIV epidemic it was clear that access to medicine and to care is a human right…

"Absolutely. Another example of how AIDS has transformed how we look at health is that it was accepted, after a tough battle I must say, that even in the poorest countries people have the right to health and to new products from science: and that was very new. We also have lots of young people, students became interested in global health and I think that is also a sign of the time. Young people today they feel connected to the whole world. Though Facebook… they communicate with people they may never see in their life and they are interested in it. I think AIDS has really changed a lot of what, how we look at health. Even the relationship between the patient and the doctor is changed, because often patients they know a lot about their disease, their infection: it started with gay men and they knew everything,

they would read everything and through the internet. The doctor could not just say ok, trust me, I am a doctor. No, there was a dialogue and people with HIV have really been the driving force of the fight against AIDS: again, very new. In the medical community doctors in the beginning said "what is this?", "how to handle that?" and many of my colleagues they flipped completely, but I think now it's kind of normal."

I think that HIV/AIDS has acted as a sort of disclosure of some cleavages in our culture and in our organization. A sort of an explanatory issue of the fact that our society is a "side effect society". For instance in your book you tell about the spread of HIV infection in peacekeeper troops in Cambodia…

"Jonathan Mann used to define AIDS as a touchstone for our values in society and that AIDS has to do with human rights and respect and so on, but also it reveals the fault lines in society, things that existed of course, that we know, for example the fact that there is a lot of homosexual activity in the world even in countries where formally it's not accepted, but also injustices in terms of access, gender difference because women are far more affected as sexual violence. Then, on the political front, we found for example that when, after the Khmer Rouge were defeated basically by the Vietnamese, you know there were UN peacekeepers and, yes, they contributed to the spread of HIV in the country. It reveals things that we either don't want to talk about, or that are more difficult to discuss or to detect."

In your book there is a relevant part devoted to denialism. You told the story of Thabo Mbeki, the former president of the Republic of South Africa. In 2000 the HIV/AIDS Conference was held in Durban: for everybody it was an incredible emotion. But before the Conference there was a struggle about the question "HIV is causing AIDS?". The Thabo Mbeki's idea was to find an African way to fight or to define the problem. As medical doctor and official of United Nations, how can you explain that there are people that are still not convinced that HIV causes AIDS?

"For me it's still a big question why a very intelligent man like President Thabo Mbeki, who had given great speeches and done some good work on AIDS, suddenly turned around and followed some fairly crazy American professors from Berkeley and he said HIV doesn't exist, treatment with AZT is toxic, it is killing people. Firstly I thought that maybe he was very concerned about the fact that South Africa is too poor to offer treatment and so on and rationalizing that. But I don't know. I had quite some in-depth discussions with him, which I describe in the book, but I think it must have something to do with the psychological side and there was of course a, sometimes even, racist you know attitude or *discour* about African sexuality. And that didn't help, absolutely not. But I think it was also maybe because of being powerless in front of something that was killing, and now has killed like few millions of South Africans. So I don't know, I still don't know. But the fact is that

someone who is in such a powerful position as the President of South Africa, in the country that has the largest number of people with HIV, well over 5 million, is enormous. It is enormous the fact that by denying that the problem is there. What we can do about it? That has been a heavy responsibility which probably has led to hundreds of thousands of deaths. It is not just an academic type of difference of opinion. We know from the AIDS epidemic that leadership is extremely important, but you can also have negative leadership and this was. Fortunately, today is different: South Africa has the largest AIDS treatment program in the whole world, well over 1,5 million people are under antiretroviral therapy. It's not perfect, but now is more a matter of management and getting it done, but these are practical problems and it's not like a leadership issue."

When I was a young boy, during the first interview I made to Tony Fauci I asked the same question and he answered "What you mean? I am an immunologist, not a psychiatrist". For me is fascinating that, I think that people like Peter Duesberg are really convinced that HIV is not the cause of AIDS. How is it possible to have an opinion in front of an evidence in science when you have to set up policies that address people that are sick?

"I honestly don't understand it. I think people sometimes simply believe what they want to believe. There are conspiracy theories… We have people who still believe that Elvis Presley is alive or, you know, and that September 11 was done by the CIA and Gadhafi was convinced that the CIA made the HIV virus. I don't think that, let's say, a rational discussion could help. For example, and I describe that in my book, when President Mbeki said well that virus doesn't exist, I said I have seen it under the electro-microscope, you know you can see it. He said that those are all artifacts. So he knew a lot, because it's true, that under the electro-microscope you see all kinds of stuff that is impossible to interpret, at least for someone like me, so often. You know, they take something that is true and they mix it with their theories. So, I honestly don't know. I mean, there are books written about it and I've kind of given up trying to understand and I have accepted that there are people who are irrational, but I also accept that we, as human beings, we are not very rational, otherwise I don't think we would have an AIDS epidemic. Yes, it's part of our human nature I guess, but it's very dangerous when it's people in power who turn their personal beliefs into policies that are really anti-science."

In terms of political leadership, the opposite was Nelson Mandela who really has broken the silence…
"When he was President, it took until the end of his presidency before he spoke up about AIDS. But in his case he explained that: it was also a concern that, one, to underestimate the issue, he recognized that, he did not understood it was so bad, but two, also, that it would be used by the white minority to discriminate and to attack the ANC . That's a very different thing, but afterwards he really took up his responsibility and I was with him when he addressed the nation the first time on AIDS. It was from a military base in KwaZulu-Natal and it was live on TV in the whole country and since then he has done a great job, he and the Nelson Mandela Foundation."
You were at least everywhere looking for viruses, people, connections and possible solutions: you describe this in the book and you use very often in the book the concept of detective activity. It's really interesting because the detective story started in UK being rooted in the clinical method of diagnosis. Do you feel a detective?
"Certainly it's true, when you discover a new virus, like Ebola, and you have no clues on how it is transmitted, is it through coughing, mosquitos, food, kissing, sex, blood? Yes: that is a detective story how to find that out. You look for not only the assassin, but also for the virus, which you have. But now I would say I moved from being a detective to more of a - how to say? - maybe diplomatic-activist-politician. It's about power relations in society. My goal was, firstly to put AIDS on the top agenda because I felt if it's not on the top political agenda: we will not have the money and the courageous decision. Secondly, my goal was to bring down the price of antiretroviral drugs so that people could be treated. And, thirdly: to find the money. So, everything for me was in function of that. Something that I am proud of is that I brought people with HIV around the table where the big decisions are made: all these were new ideas and so, well, people don't like change often and this is why you have to fight it and never take no for an answer. Particularly, I think what kept me going is that I have a long-term vision, I am not discouraged when something doesn't work or you say no. I say ok, I'll come back tomorrow, you will not get rid of me, knowing why you are doing this. I know why I am doing this: it's my meetings with people living with HIV and affected, and really suffering in all kinds of countries, discriminated."
To do this you have to create a common and agreed way to present data of the epidemic for the entire world…
"I am a scientist by training, so I actually want to know what are the facts to start with. I also think that when you want to deal with a problem the first thing you do is to define the problem, which are the facts, the data and in this case worldwide. So, we have to do two things: firstly to set up a system so that each country or let's say most countries have reliable data that can be compared, that is they are collected in the same way, and that took several years. I think today HIV data are probably among the best in terms of health data in the world, be it from a poor country in Africa or from the UK. Actually, I think that some European countries have worst quality of data than some African countries or some Latin American or Asian countries. And, secondly, it was to make sure we have one set of data. When I became head of UNAIDS there was actually Jonathan Mann and his group at Harvard, they had one set of data and they said WHO is wrong; and then there were the US Bureau Census with their other data, and we had then UNAIDS starting to collect data. I said this is not possible, academic debate is healthy but it creates confusion: if we want to convince the world that this is a big problem and we can't start fighting with each other. So we settled some basic rules and to unify the data. Today there is only one set of data for HIV, but that took a long time. I felt it was essential. First document a problem and then, secondly, document the solutions: because a problem without a solution… why would you want to deal with it? I mean, particularly a politician or a leader: they don't want to be associated with a lost cause and we found a solution, quote-unquote. We saw that in Thailand already in the early 90s that new infections had gone down thanks to 100% condom promotion. Uganda also declined thanks to all kinds of community mobilization and that was before there were any drugs, any treatment, just is like in the gay community in Europe and in the United States through community mobilization, it didn't last but, I wanted to know if something is working. And if it works in Uganda, why not in Kenya, the neighboring country? We could give hope also, but also best practice, what works, what doesn't work…"
From the book is evident the struggle that a scientist live: dealing with the facts and knowing how to do to change them, but in the same time dealing with the people that are not convinced or committed for changes…
"The biggest resistance came not from the virus itself, but mainly from people and institutions, particularly experts, public health experts, development experts who were against treatments. One day I had a phone call with a high ranking official in an international development agency and he was complaining that during the Durban AIDS Conference in 2000, I said we needed to move from the M word to the B word, from millions to billions: we are not going to solve this with millions, because millions is peanuts, we need billions. He called me, he said you know, Peter, someone in your position should not make this kind of irresponsible statements, because that money is not there and then, he said, you

know and AIDS it is disturbing all our plans and we didn't plan for it. I replied yes, nobody planned for this epidemic, of course not. So, it requires, yes - how to say? - perseverance and not giving up, but I never really doubted about it. I was some time discouraged, of course, but that's like an evening and then ok, take a deep breath or take a good drink, have a good meal with friends and talk to people who are affected and I said yes, we go back and, yes, but it was. When you look at the index of my book, you see only names of people and that is because for me I wanted to pay tribute to the people: I am just, I was a spokesperson and one of the most visible people in this struggle. But of course, I was not alone and there are many other people all over the world working for the same goal. This is, again, an important aspect of the story: AIDS has made its worldwide movement and community. I was in Japan last week and I know I have brothers and sisters in Japan, people who are doing the same thing. In Italy we had Stefano Vella who was the President of the International AIDS Society and many others: we all went through the same type of battles. Just in my case I was more visible, but all we are all in connection with each other."

The pages I really love in your book are those where you tell about your dinner and talk with Michel Sidibé who had described you the strategy of chameleon: a strategy rooted in African culture but applicable everywhere…

"Michel Sidibé became my successor as head of UNAID. He is from Mali and he was the UNICEF representative in Uganda at that time. It was in 2000. We met in Kampala around a good meal - I am from Belgium, I like good meal, good food and wine- and it clicked between the two of us. I had never met him, and I thought ok, this guy is good: I am always looking for people who may work with me because I want the best people. He told me a story. In his ethnic group in Maly where he comes, boys are initiated when they are 12-14 years old. One of the things they have to do, is to to observe a chameleon and after a few days they come back to the elderly. They ask "ok, son, what did you see, what did you observe?" And they all say "oh, the chameleon changes color". Ok, fine, so now what? And so then the story was that the chameleon the head of the chameleon is like this (*straight toward its prey - ndr*) and it doesn't change: so in other words, stick to your goal in life, have a long-term vision. And what do the eyes do of a chameleon? They go round, they scan the environment: so intelligence is everything. You need to make sure you know what is going on, but then the chameleon changes color: so you have to adapt to your environment. If you change color without and not sticking to your goal, than you are an opportunist; but if you change color to get to your goal, that's useful. And another thing that a chameleon does: how does it move? He goes on the branch of a tree and he goes just one step at a time, that's also you can even go faster but you can get there one step at the time you get there. It's a very long story: in West Africa they like to go on forever… So, lastly, what is the most important body organ of the chameleon? Is the tongue because the tongue it catches the flies and the mosquitos: if the tongue comes out too fast or too slow it wont't catch its prey: so right timing is everything. When he told me that story I thought by myself I want to hire this guy, he must work with me and I already thought that he may become my successor. This is this kind of a gut feeling, but it was a very deep - how to say? - philosophical view on life. I use it also in difficult moments and I thought what would the chameleon do, stick to the goal and then what kind of goal to take and so on."

You had to face many difficult moments in the history of HIV/AIDS, but you had also the opportunity to tell some very good news…

"2008: At the end of my ten years at UNAIDS, for the first time we could announce that there were less people dying because treatments became more and more available and secondly that there were less people infected. It was more than 10 years after -so many year- treatment became available in Europe. It was for the first time good news and so I felt ok, it's not over but finally we have achieved something. Even today AIDS is not over, there is some talk about that and the end is in sight, but honestly I don't believe that at all, we still have a long way to go."

We had these good results through the expanded use of antiretrovirals and through strategies of prevention. About this, there is still debate –that is not a science-based one- about condoms, due to the position of the Vatican. In your book, you tell about your meetings in Rome to address this issue..

"AIDS is full of controversies and condom use and promotion is one of the hot topics, because it clashes with religious beliefs about the nature of sexuality and reproduction. The Catholic Church of course has great reservations about use of condoms. One day Cardinal Lopez Trujillo, head of the Pontifical Council of the Family, said that condoms have little holes, that actually they cannot prevent HIV and it was made in a widely publicized statement. I got really angry. Ok, that the Church doesn't want to promote condoms, fine: we all have our believes. But this was an absolutely wrong and dangerous information, so I called the Nuncio in Geneva and I said this is not possible: I have to speak up and denounce that you put people's lives in danger, and then after many months, I was invited for a discussion in the Vatican with Cardinal Lozano Barragan, head of the Pontifical Councl for Health Pastoral Care, who was a quite a reasonable man . We could dis-

cuss and discuss, but all I wanted to obtain was that the Church would avoid making statements about condoms, a kind of an armistice. I said, you have no competence to talk about it, your business, to say so, is religion, is theology, moral, ethical issues, that's not mine. But I know what works and the condom does save lives. And so we came to basically an agreement, this was under the previous Pope, and then there were no more statements against condoms. But on the other hand, I saw in Namibia, in Cote d'Ivoire, Catholic hospitals where condoms were available. In one case speaking with a Catholic nun I said "Sister, what is this?", "Oh, Rome is very far", she said. And then in another one, I was in Cote d'Ivoire, I said, "Mother Superior, you know you are promoting condoms here". She said "Yes, but when we do that I speak as a woman, not as a nun". So, because they were living in communities where AIDS was killing everybody, Catholic or not Catholic. After all, my position has always been that the highest moral imperative in life. But it's not easy: I was often upset that people put ideology or beliefs before saving lives and I think saving lives and the dignity of people is the highest imperative in life."

PrEP could be seen as a solution for people that are worried about condoms. What is your opinion about PrEP?

"We can give the antiretroviral drugs, before sex, before exposure and we do that, actually for prevention of mother-to-child transmission. The mother takes antiretroviral drugs so that the baby is not becoming infected: that's also pre-exposure prophylaxis. When it comes to preventing sexual transmission, it works, we have now proof of that from clinical trials. But we need to make sure that it doesn't lead to a decrease in condom use, because that would be disastrous. For me PrEP can be very useful, particularly maybe for in couples or discordant couples, in vulnerable women and in condition where you cannot impose a condom. But it's clear that for prevention we need combination prevention, because we have more and more tools, for instance male circumcision. The question is, what can one person do and everything at the same time, what is human and what is going to work? Let's not forget: the latest UNAIDS report says there are 2,5 million new infections last year. AIDS it's not over by any means, and we need to really intensify our prevention efforts in a big, big way."

According to you book, you are not convinced that we are not so close to the end of AIDS. Why?

"AIDS is not over, despite the fact that at the International AIDS Conference in Washington we were talking about AIDS-free generation, the end is in sight and all that. As Laurie Garrett wrote in her blog[3], what have they been smoking? When you look at the facts - 2,5 million people new infections, increased numbers of infections in the former Soviet Union, in several countries, in Uganda, infection rates are going up and 1.8 million people who died - we still have a long way to go. The facts are

not supporting that the end is in sight. We have definitely made progress and good results, but we still have a long way to go. I think we need to consider that AIDS will be with us for generations, unless a miracle exists, vaccine, but it's not in sight, or a cure, but then we have to bring it to everybody. No, we need a long-term view and that means that we need to sustain efforts. Money and support in many countries is going down because of the financial crisis that particularly Europe is hitting. I think that it's going to be a long, long struggle, but if every year we make a bit of progress that's great. But saying that the end is in sight I think that is fooling the people and can be very dangerous to say it, because if that's the case, the Parliaments and Governments can say fine, great, we don't need to pay anymore. And it is certainly an illustration of medical hubris like thinking ok, we have got treatment, if we give everybody a pill it will be fine. Even here in London, even here in the UK where gay men are tested a lot, where access to treatment is fine because of the National Health Service there is no obstacle, we see a doubling of new infections in the last ten years: so we still have a long way to go, it's not over."

Some years ago, you have launched the initiative called AIDS 2031[4] in order to underline how much is relevant a long-term commitment. Is this the same meaning of "no time to lose"?

"The future depends on what we do today: now we have to move to the long-term view. We call 2031beacuse it will be 50 years after the discovery of AIDS in 1981. There will still be AIDS: according to the most optimistic scenarios, at least 1 million new infections, that's a lot. We need to take that long-term view: in other words we need multiple years of planning with money that is there for decades, we need to become more efficient in what we do, better management, making the money work, as we say, and to invest in prevention as much as in treatment. I think that is difficult to have a long-term view when people are still dying every day, but we need to combine that emergency response."

It is interesting that in some pages you underline the distance between science and health…

"Science has made a huge difference for health. Let's not forget that the last let's say 50-60 years, on the average, we have made more progress in terms of longer life, healthier life worldwide than any

time in history. That's fantastic, and some of that is because of better economic environment and food, nutrition also peace. But also, some of it because of science: vaccines, antibiotics and just name it, drugs against hypercholesterol and all that. But it takes, can take, a long time. For instance, take smoking. Richard Doll and his colleague, here at our School of Hygiene and Tropical Medicine, demonstrated that smoking causes cancer. It was during 1950. That's 62 years ago and what do we see? I mean not only individuals smoke, but also smoking is still a big source of income for Governments and all that. So, there can be an enormous distance between science, the evidence and policy and I think scientists sometimes underestimate that. So I'm glad that I was both on the side of science but also in trying to implement science and convincing politicians, but that is not so easy."

It may be could be related to this, but I note that there is a sort of coincidence – I do not know how much meaningful – in the same time when we had good results with antiretrovirals, social sciences research stopped to work on HIV/AIDS. It seems like that evidence-based medicine killed critical research…

"What we are seeing at the moment is a more - let's say- medicalization of AIDS. In other words, we think that with treatment, with drugs we are going to solve it and indeed less social science research is issued. Yet behavior is important for everything we do, even for taking the treatment. I mean adherence: you have to do it for your life and it's quite a challenge. That is a very complex issue, so we will continue to need all the disciplines, medicine, of course, but also social sciences, virology, epidemiology and so on."

Do you think that the story of HIV/AIDS could help to fight other big issues or challenge for health in the world? Could we take the opportunity to use what we learned battling against HIV/AIDS in fighting against other disease?

"Yes. I was interested very much in becoming Director of the London School of Hygiene and Tropical Medicine because I feel this is the best school in the world when it comes to public health and global health: we train the leaders of tomorrow, the future leaders and we do top research. But it's on many things, not just on AIDS. I am convinced that the AIDS experience can be very useful for solving other health problems: the fact that you know you need multiple disciplines, multiple sectors to reach results, that comes from AIDS, as well as the fact that you need a connection between the science and the policy and the politics, and the evidence of the role played by people who are affected by diseases. I think with a worldwide pandemic of diabetes, of obesity, of cardiovascular disease, we could learn from that and also, for example, chronic care. AIDS is the first chronic disease -because now AIDS it's chronic disease- that was taken seriously in many developing countries and so new models were developed and that can be used for chronic care of hypertension, diabetes, mental health and so on. I am not saying that we can replicate everything, but the experience with HIV/AIDS it's certainly a source of inspiration for improving health at all levels."

So, we can say that the challenge is to move from destiny to choice?

"I think that choice that's informed and an environment that is supportive can save a lot of lives, yes." ■

Andrea Tomasini

(1) Donna Leon is the American author of a series of crime novels set in Venice and featuring the fictional hero *Commissario Guido Brunetti*.

(2) "Our responsibility is historic, for when the history of AIDS and the global response is written, our most precious contribution may will be that at the time of plague we did flee; we did not hide; and we did not separate" Johnatan Mann. "In the course of human history, there hasn't never been a greater threat than the HIV/AIDS epidemic. Our attention to this issue cannot be distracted or diverted by problems that are apparently more pressing. History will surely judge us harshly if we do not respond with all the energy and resources that we can bring to bear in the fight against HIV/AIDS", Nelson Mandela, Closing ceremony of the XV International AIDS conference Bangkok Thailand

(3) http://www.lauriegarrett.com/index.php/en/blog/3214/

(4) aids2031 is a consortium of partners who have come together to look at what we have learned about the AIDS response as well as consider the implications of the changing world around AIDS. Based on innovative thinking, critical analysis and public debate, aids2031 has published a book, "*AIDS: Taking a Long Term View"(FT Press Science 2011),* that charts options to achieve the best possible outcome for the future. aids2031 is about mobilizing the global AIDS response to include a long-term view and take into account the consequences of our actions as well as inactions. aids2031 is not about what we should do in 2031, but what we can do differently now, to change the face of the pandemic by 2031: the year that will mark 50 years since the first report of AIDS. As the consortium states: "While great strides have been made, there are persisting as well as emerging challenges that must be addressed". See www.aids2031.org