Cold War Triangle
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Cold War Triangle: How Scientists in East and West Tamed HIV.

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years in a place where no other language was spoken but French, a friend of the De Clercq family suggested he join the Rega Institute. As luck would have it, during another oral exam, De Somer repeated his offer to Erik to join his laboratory. This time Erik accepted. And so in 1964, two years before he graduated, he made his first acquaintance with the Rega Institute. Erik remained hesitant about his crucial decision.

When Erik De Clercq got acquainted with the Rega Institute, the whole team was still basking in the glory of its polio vaccine. It radiated the confidence and self-assurance of a task well done, of dealing with a disease in the eye of a media storm. Erik didn’t know much about his new mentor, Piet De Somer, and was rather intrigued by his connection with the RIT pharma company. Grooming his new intern, De Somer didn’t make any amends for praising the practical values of research. He ingrained into Erik the belief that “Research should be of help to mankind and if possible generate profits for the university. Research without a purpose makes no sense.” In order to steer Erik into the field of vaccines, De Somer captivated him with a story about the prevention of many infectious diseases. The secret was to be found inside the human body and its own defenses. Erik was to become acquainted with the age-old battle between man and microbes.

His first assignment occurred at the time when the rubella virus, the “monstercraker,” that provoked birth defects in newborns, was sweeping around the world. After causing havoc in Europe, it spread to the United States in 1964, causing one of the worst rubella epidemics ever recorded and infecting twelve million Americans that year. Erik’s task was to set up a fluorescence-activated antibody detection system. He would inject rabbits with an attenuated rubella virus of the Cendehill strain and then measure the antibodies concentration in their blood. When he reported he had found a very high antibodies count, he was greeted by an elated boss who foresaw this could be the basis of a new RIT vaccine. Piet De Somer was right; it became another success story. It was the world’s first rubella vaccine to hit the market.

The work on the rubella virus also found its way into Erik De Clercq’s master’s thesis, an excellent opportunity for De Somer to persuade this young intern of the value of research and of starting a career in science. He told Erik that “physicians dealing with patients have to work like dogs.”
De Somer referred to his own father, a small town physician, whose hard work had brought him to an early grave. “The physicians work benefits only the individuals they are seeing,” De Somer said,

Scientific research on the other hand, when practically oriented, can provide a treatment or a cure for a great number of people, maybe even for all of humanity! Infectious diseases have been the cause of more than half of the deaths in the beginning of the twentieth century. As scientists were able to devise more and more vaccines against childhood diseases, the rates of infectious diseases have gone down dramatically. The postwar generation is given a very different outlook on life. Isn’t it a tremendous feeling to be part of this endeavor!18

Erik had received a first taste of De Somer’s persuasive charm, but remained hesitant about following a path into science. Even after his graduation as a medical doctor with maxima cum laude he kept his options open. His new position in the Rega Institute was contingent on the provision that he could jump ship at any time and start a career in internal medicine instead. Erik was very blunt with his mentor and told him that the two-year internship in the virology department had not been very rewarding since it didn’t involve any chemistry. De Somer, now in his forties, was rather amused by so much rebelliousness. He coaxed Erik to formally join the Rega Institute in the summer of 1966 with the vague promise he could work on “the chemistry of viruses.” After he had been “dragged” into research on viruses, Erik made sure he could report directly to the boss. He realized that Piet De Somer was an exceptionally charismatic figure who infused his laboratory with great vigor. It would become much more than a place just to work; it became a way of life.
Chapter IV
The sixties in Leuven and Prague

If Politics is the art of the possible, research is surely the art of the soluble.
Both are immensely practical-minded affairs.
— Sir Peter Medawar

**Antiviral penicillin**

Vaccines to prevent attacks from viruses remained the prime focus of the Rega Institute throughout the sixties. Piet De Somer, however, wanted to look beyond prevention and search for a treatment. Once a viral disease had developed, there was no medicine available in those days. Blocking a virus before it multiplies inside its host became De Somer’s other fixation. He took a keen interest in a young Scottish virologist, Alick Isaacs, who was working at the National Institute for Medical Research in North London.

Isaacs and Jean Lindenmann, a Swiss doctoral fellow, had discovered a new biological substance that could interfere with a virus replication. The two had been testing the behavior of chick cells after exposing them to a killed influenza virus. A substance appeared in the cells that prevented live influenza virus from growing. They had identified the substance as a protein but did not yet know whether it was produced by the virus or by the cell.

They named the protein “interferon” for its mysterious interfering activity. Isaacs and Lindenmann explained in their articles, why no antibiotics to kill viruses had been discovered so far:

To a large extent this is because viruses are extremely small parasites which are obliged to live inside cells, and it has not been possible to find a substance which would stop viruses from growing without at the same time harming the host cells. Interferon is the name which has
been given to a new substance which prevents the growth of a number of viruses without apparently causing any gross damage to the cells. Interferon does not kill the viruses, but stops them from multiplying.4

Isaacs sent their articles to every prominent virologist he could think of. He received enormous press coverage in part because he had tagged the new substance with a powerful cultural symbol, the potential of becoming an “antiviral penicillin.” The comparison reopened wounds of the penicillin trauma in the United Kingdom. Penicillin was still perceived as a British discovery that had been given free of charge to the United States during the war, while the British people on the other hand had to pay royalties to American commercial firms for every gram of penicillin they sold to the British market.5 The British Medical Research Council did not want a repeat of the penicillin-affair to be repeated. The National Institute for Medical Research was not to waste any time and start a collaboration with three pharmaceutical companies working in the UK.

The international virology community was not as receptive. The cool reaction from eminent virologists was striking. Some started nicknaming interferon “misinterpreton” meaning the substance was probably a leftover virus particle, an abortive product of virus multiplication. Isaacs and Lindenmann, both physicians with only a modest knowledge of chemistry, were heavily criticized. Their vagueness as to the nature and mode of action of the novel substance made it extremely difficult to reproduce the results they had reported.

Isaacs’s work nevertheless caught the attention of the recent Nobel Prize winner, John Enders.6 He had also observed a protein blocking virus multiplication. At first he had called it an “inhibitory factor” but was now re-naming this biological fact as “interferon.” This came as a tremendous boost for Isaacs. The event was witnessed by one of De Somer’s co-workers, Edward De Maeyer, who had been sent as a postdoctoral fellow to Enders’s laboratory in Boston.7

Now that interferon had been endorsed by such an eminent personality, it received an enthusiastic welcome in Leuven. Isaacs was hailed a hero and an honorary doctorate from the Catholic University was bestowed upon him in early 1962.8 The ritual and festivities around this award underscored the new direction the Rega Institute was to follow. The Institute
was being retooled to become one of the premier interferon centers on the continent. The buzzwords “antiviral penicillin,” and “broad spectrum magic bullet” against many viral diseases, were music to the ears of De Somer. Would he be able to repeat his earlier success when, unburdened by royalties, RIT was able to produce its own penicillin?

This what was probably on his mind when he travelled to Smolenice Castle near Bratislava, Slovakia in 1964 to attend the first international conference on interferon. A young scientist, Jan Vilček, who had gained quite some traction in the interferon community after the publication of his paper in *Nature* in July 1960 had taken the initiative. Interferon was still a very small field at that time and probably half of the world’s active researchers had travelled to Smolenice. Among the forty-odd participants were prominent interferon researchers from the United States, France, Finland, many participants from Czechoslovakia, and the Soviet Union. De Somer represented Belgium, he was accompanied by Edward De Maeyer and his wife, whom Jan Vilček had befriended on one of his rare trips outside the country.

Vilček recounts the Interferon Conference in his autobiography and mentions a shocking moment that in his mind marked the conceptual birth of commercial biotechnology. It was De Somer’s relaxed attitude towards monetizing research that caused consternation:

One evening, conference participants gathered to play a social game. A moment that has stayed with me in particular was when Piet De Somer answered the question what would you do if you were to discover an effective cure for virus infections. I would sell it, he said without hesitation.

He also recounts all the details about him plotting his defection with his Belgian friends without being noticed by the omnipresent secret police. A few weeks after the interferon symposium, the communist authorities surprisingly granted Vilček and his wife permission to travel for a weekend to Vienna. They never went back to communist Czechoslovakia and wandered through Belgium and Germany before arriving in the US in 1965 as penniless refugees. Jan Vilček was welcomed at the NYU School of Medicine and became a prominent American scientist. He went on to
spearhead some key advances in the research of interferon and later into the tumor necrosis factor that led to new treatments for a wide range of autoimmune and inflammatory diseases.9

Systematic initiatives to produce interferon from human cells were only started around 1966. De Somer and his group opted for interferon in human fibroblasts, cells usually derived from abortion tissues or from the human foreskins obtained after circumcisions, a routine procedure for baby boys in the United States. Growing fibroblasts cells in the laboratory was no mean feat; it proved both laborious and expensive. Kari Cantell and his group in the Finnish Red Cross Blood Transfusion Service made interferon from human white cells or leukocyte interferon.

Neither De Somer’s group nor Cantell’s work received much attention at that time because the quantities produced were still not enough to test interferon on humans.10 Interferon’s credibility and the hopes to develop a useful drug sank to a low point.11 Many scientists began to wonder whether there was an alternative. They recalled that Isaacs himself had suggested the possibility that a chemical compound could stimulate the human body into producing its own interferon, thus circumventing the laborious process of having to make interferon and then inject it. In the US, many had shifted from the administration of interferon or exogenous interferon to the induction of interferon, the endogenous interferon.

Piet De Somer wanted to pursue both avenues, continue his experiments with production of interferon while trying the induction approach at the same time. Two of his senior assistants were on extended leave in the US and had left a whole group of underemployed lab workers behind. It was an obvious choice to dispatch his new doctoral fellow, Erik De Clercq, to lead these eager technicians in exploring the induction of interferon.

De Clercq first wanted to prove interferon existed. After injecting rabbits with sindbis, a virus harmless to humans, he noticed interferon in their urine. This observation was embraced with great enthusiasm by De Somer. It showed that interferon was not something esoteric, its existence was proven by its low molecular weight passing over the rabbit’s kidney threshold. It became the topic of Erik’s first publication. Although, as was customary at that time, De Somer received most of the credit as the head of the Institute.12
De Clercq then began to scrutinize the products which medicinal chemists had sitting on their shelves to see whether any of them could stimulate interferon. Very early on, he found some polymers, or clusters of atoms, that could induce interferon in the human body. It was another eureka moment that provided yet another topic for a new publication and his doctoral thesis as well. De Somer presented Erik’s findings at a congress in Fort Lauderdale, Florida, in late 1966 where he renewed his acquaintance with the rising stars of American Interferon research.

Tom Merigan in Stanford had been on the same wavelength as De Somer since both were among the first to make interferon from human fibroblasts and now both labs were exploring synthetic inducers of interferon. Merigan had already shown that interferon could be induced by synthetic polymers.

Piet De Somer also took an instant liking to Maurice Hilleman, the towering and imposing research director of Merck, the pharmaceutical giant. De Somer was in awe of Hilleman and shared the same mischievous sense of humor. They became close friends and Hilleman eventually profoundly influenced research into interferon.

Spring turns into winter

The democratization process fueled growing criticism of the country’s economic stagnation that had been brewing all through the sixties. The best Czechoslovak movies reflecting social and political tensions appeared in that period. Some of the films are satirical tragicomedies displaying the dry wit so typical of Czechoslovakia.

When another politician, Alexander Dubček, rose to power in the first months of 1968 to replace Novotny, the Prague Spring was reaching a climax. Dubček attempted to reform the regime. The relaxation of censorship brought the whole country into a heady, happy atmosphere but became a lightning rod for Soviet wrath over so much intellectual freedom. “Socialism with a human face” also infected the Academy of Sciences. Compared to social scientists that were caught up in the revolutionary fervor of the Prague Spring, natural scientists preferred to remain apolitical.

Otto Wichterle, the head of the macromolecular Institute, clearly became the exception to the rule. He was leading a group of dissenters who
demanded recognition of a trade union of scientific personnel to insure internal democracy and to neutralize bureaucratic interference with their research. A core of historians and sociologists, with the notable input of Otto Wichterle, initiated a famous manifesto. It called on public denunciation of the secret police spies and for citizens to support the Dubček government, with arms if need be. It was published by an activist writer and noted rabble-rouser in a literary journal in June of 1968 and became known as the *Two Thousand Words Manifesto*. With its call to arms, it was the straw that broke the camel’s back. This time, it provoked the Soviet Union into action. On the night of August 21, Soviet tanks and forces from other Warsaw Pact states rumbled across the cobblestones and invaded the Prague capital.16

The presidium of the Academy responded the next morning with a radio broadcast condemning the invasion.17 In the first months of the Soviet occupation, there was still hope that the Dubček government would survive. František Šorm kept pushing reforms to gain greater autonomy for the Academy. As a member of parliament, he voted with the majority of deputies to condemn the August invasion as an unwarranted and hostile act and refused to vote for the right of the Soviet troops to stay on Czechoslovak soil.

In April 1969, when Alexander Dubček was replaced by the notorious hard-liner Gustav Husák, retribution against the Academy began in earnest. Šorm sent a letter asking for support to his colleagues in the Academies of Science of all the Warsaw Pact countries. It was to no avail. He was dismissed along with ten other members of the Council of the Academy. The next president, a specialist in automation technology, soon issued a decree that would impose his short-sighted vision on the Academy:

The socialist scholar does not waste time or means on developing theories which are not socially useful, nor on writing works which solve nothing and do not occupy a place in the list of social requirements.18

Next, he put in place the emergency measures against dissenting scientists. By June 1970, all Directors of the Academy’s 138 institutes were dismissed and replaced by opportunists and party hacks. Outstanding