SCIENCE, TECHNOLOGY AND THE INSTRUMENTALIZATION OF SWISS NEUTRALITY

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In the autumn of 1952 a number of Western European states entered the last stages of negotiations over the choice of a site for CERN, the European Organization for Nuclear Research. CERN was to be equipped with two powerful particle accelerators intended to explore the inner structure of the nucleus. The laboratory was expected to help close the huge and widening gap that had opened between the US and Europe since the war in a prestigious and exciting field of fundamental research that had been dominated by European scientists until the early 1930s. This was also a field that attracted governments lured by the myth of the atom: the bombs that had flattened Hiroshima and Nagasaki were seen as heralding a new age in which the capacity to control the energy locked in the nucleus would map directly onto geopolitical power – one is nuclear or one is negligible as the French Minister of Defense put it in 1962. It would also provide a new and unlimited source of energy too cheap to meter, as the optimists put it at the time. A basic understanding of nuclear forces, the capacity to acquire atomic weapons, the potential of nuclear power: all these more or less loosely coupled meanings of the nuclear jostled with each other in the imagined futures of those who sat down to fix the site for the new physics laboratory. They chose Geneva in Switzerland over proposed alternatives in Denmark, France and the Netherlands.

The British were not party to these debates, preferring to observe the battle from the sidelines, and only eventually joined CERN when they were persuaded that it was in their scientific interest to do so. This was not to say that their voice was not heard on the site question: everyone hoped that London would eventually relent and it was most unlikely that a venue which Britain opposed would carry the day. This was one strong argument against Copenhagen: Lord Cherwell, Churchill's chief scientific adviser let it be known that the UK was opposed because «Denmark was too vulnerable to Russia». Once Geneva had been officially adopted grave doubts were raised of the implications for Swiss neutrality by a civil servant in the British Legation in Berne. It was the make up of the member states of CERN, that included France, West Germany and Italy as well as the Benelux countries, that was on his mind. In a letter to the Foreign Office in London expressing his concerns in November 1952 he remarked that «in spite of all the explanations offered, I have not been able entirely to clear my own mind of doubts as to whether Switzerland's collaboration with a number of powers of whom only one, Sweden, can be considered as neutral vis-à-vis the Soviet Union will not ultimately (if quite unreasonably) prejudice her neutrality.» The London *Economist* went further: Switzerland's decision to agree to have a major physics laboratory on her soil «may be a new departure in that country's attitude towards European integration and defense». For some observers, then, Switzerland's willingness to host CERN indicated a shift in its position of neutrality as the Cold War got into its stride – Bern was apparently willing to align itself more openly with the free world in order to have privileged access to atomic secrets.

Much has been written, notably by my colleague Bruno Strasser over the anxieties in Bern and Geneva created by the proposal to install CERN on Swiss

soil. Swiss foreign Minister Max Petitpierre, along with local politicians, scientific statesmen, particle physicists and physicists interested in deploying their skills in the new field of molecular biology played an active role in untangling the threads tying together the various dimensions of the nuclear. They insisted that CERN would do no work of any military significance. Petitpierre defended a positive definition of neutrality which was compatible with Switzerland being a member state of technical international organizations dedicated to the promotion of international scientific collaboration. This active boundary work sought to *define* Swiss neutrality as being compatible with having CERN and similar organizations on its soil. In what follows I want to reverse the argument. I want to show how some actors, mostly those that were not Swiss themselves, took Swiss neutrality for granted, and used that as a resource to be promoted and exploited to further their own national scientific and political agendas. In short, while a man like Petitpierre was crafting a notion of neutrality to fit the new challenge posed by having a physics lab on Swiss soil in the early Cold War, *others were exploiting the taken-for-granted fact of Swiss neutrality to advance their own national interests*. This happened in three quite specific ways in the lead up to the establishment of CERN, and not always with the results that the protagonists hoped.

Firstly, Swiss neutrality was a guarantee that the laboratory was not engaged in work of direct military importance. To hammer the point home, it was decided very quickly (and against earlier French plans) not to have a reactor on the site, although equivalent civilian labs in Brookhaven, New York and Harwell, England, were equipped with a research pile. In addition it was emphasized – and this argument was extremely important to Petitpierre too – that CERN would be a *maison de verre*, a transparent scientific glasshouse where scientists from all nations could freely come and go and in which no classified work would be done. This demilitarization of the laboratory was intended to still the fears of those like Churchill who felt that if war broke out in Europe the Soviet Union could use CERN as a pretext to invade Switzerland. Note that the argument here is not Petitpierre's, namely that Swiss neutrality is preserved because the laboratory is not doing military-related work. On the contrary, the claim is that *since* Switzerland is neutral, CERN will not be of any military significance in the Cold War.

Swiss neutrality was also exploited to defuse another potentially explosive issue identified by the British in the quotes I gave a moment ago: not simply the configuration of its member states, which were distinctly western oriented, but even more dramatically the inclusion of West Germany. The suggestion that West Germany be included in the member states had been made by a leading American physicist, Isidor I. Rabi, in his official capacity as a member of the American delegation to the UNESCO conference in Florence in June 1950. The significance of Rabi's proposal cannot be underestimated. West Germany had been given limited sovereignty by the US just nine months before in an act of defiance to Soviet policy in the country and to the Soviet blockade of Berlin. Under immense pressure from the United States, France had agreed, in May 1950 to take the lead with Germany in forming a supranational European Coal and Steel Community. With the Korean War imminent, the North Atlantic Treaty Nations were also about to constitute themselves as NATO when Rabi spoke in Florence. NATO

was established, as its first Secretary General Lord Ismay put it rather bluntly, to keep the Americans in, the Russians out and the Germans down. The same logic, the same determination to capitalize on German economic and industrial strength, as well as its scientific and technological capability to rebuild Europe, but in a contained supranational framework, inspired Rabi and the State Department's move in Florence. The fear of a resurgence of German nationalism and militarism was far from quelled in the early 1950s, above all in France, and led to the Assemblee Nationale's rejection of the plans for a European Defense Community in August 1954. In this charged context having a new physics lab including Germany *in Geneva* was immensely important: Swiss neutrality was a tangible guarantee that CERN would not be a back door through which militant and unrepentant German physicists tried to build the bomb that, to their chagrin, had eluded them in WWII.

Thirdly, Swiss neutrality was tested to the utmost over the clause in CERN's Convention that dealt with the admission of new states: indeed the conflict was so rude that Petitpierre was as at one time ready to withdraw Geneva and Switzerland from the project to protect his country's international status. There was a bitter irony here for the founding fathers of CERN. I have already quoted the British Legation in Berne expressing its concerns about the make-up of the member states of the original laboratory. To get around this, some of the physicists behind the project were extremely keen to stress the European, rather than specifically free-world nature of the lab. The concept of Europe was sufficiently elastic in their eyes to affirm CERN as a new node in the postwar reintegration of the Western Europe, to distance it from too-close an association with the United States, and to leave the door open to countries from Eastern Europe to join the project: indeed Yugoslavia was one of the founder members. This astute strategy for locating CERN at the hub of an integrative agenda while opening its doors to Eastern Europe in the name of Swiss neutrality was an arrangement of fundamental importance for Petitpierre, but was too much for many of his fellow delegations to swallow. The French and the Italians wanted no East European members allowed: as Jean Piaget wrote: «Elles ne voudraient pas qu'il offre aux pays de l'Est de précieuses sources d'informations sans contrepartie pour les physiciens occidentaux, et elles redoutent surtout les réactions fâcheuses de la part de l'opinion publique.» (Strasser). Britain went further, and wanted the laboratory to be open not only to Commonwealth membership, but also to full American participation. As Dudley in the Foreign Office put it, some British scientists and officials saw in CERN «a definitely anti-American bias, and [believe] that one of the objectives of establishing a *European* (or in fact Western European) organization is to ensure that work is undertaken on a large scale in Western Europe from which the Americans are excluded.» To resolve this political morass, it was finally agreed to drop the word European altogether from the clause covering the further expansion of CERN, and to insist that new members could only be added by unanimous vote. This effectively meant that the US would never be accepted as a member state, nor would any members of the Commonwealth. The appearance of neutrality was preserved while masking the reality of exclusivity.

It has to be said that the successful efforts to hold the United States at bay, both in the interests of avoiding US domination – the US was so far ahead in

particle physics at the time that they could not but have overwhelmed the young European physics community – and in the interests of Swiss neutrality, began to crumble within a few years. Indeed in April 1956, at the instigation of the influential Belgian science administrator Jean Willems, the Ford Foundation made a major grant of $400,000 for five years to CERN. Of this $125,000 was specifically earmarked for distinguished visiting American physicists. 50 smaller grants of $4000 each were made available to foster international scientific exchange around the Geneva laboratory. But what did international mean? At the time, the Ford Trustees required that «CERN would not use the Foundation's grant funds to finance visits by scientists from the Communist countries», specifically Soviet Russia, Communist China and the Soviet satellites. This policy, which flew in the face of CERN's stated internationalism, and was surely in violation of Swiss neutrality, was never formally made public; it was adopted in a «gentleman's agreement» between the CERN DG and the Ford Foundation officers.

The policy that only scientists from the free world could be offered a Foundation grant was quickly relaxed by the Ford Foundation. Early in 1957 CERN was encouraged to offer fellowships to physicists from Poland in response to the tumult in Eastern Europe the autumn before; shortly thereafter, after consultation with the CIA and the State Department, Ford extended the list of acceptable grantees to include nationals from other Soviet satellite countries and even the Soviet Union itself. Indeed by 1958 exchanges with Moscow had become normal, and a year later Allen Dulles, the CIA's chief of intelligence even agreed that Communist Chinese scientists could be paid with Ford Foundation money to visit European research centres like CERN.

This gradual internationalization of the Ford Foundation grant served two purposes. First, it was part of a deliberate effort by the Foundation, in consultation with the US government, to drive a wedge between the Soviet Union and its satellites. This was notably the case with Poland but also with Yugoslavia, which was already a thorn in Moscow's side and which, for that very reason, was one of CERN's twelve original member states. Secondly, the presence of Soviet, and then Chinese physicists at CERN was an instrument of informal intelligence gathering. Allen Dulles was quite explicit about this when agreeing to allow Ford Foundation money to be used for grants to scientists from Mao's China. By speaking to scientists informally and in a neutral environment about what they were doing their peers could get a pretty good idea about their national scientific capabilities.

I want to develop this notion of informal intelligence gathering for a moment. Its origins can be traced back to the Berkner report on *Science and Foreign Relations* that was partially released in May 1950. In its originally classified appendix Berkner and his panel stressed that it was highly desirable that qualified American scientists be enrolled in scientific intelligence gathering and that they do so informally and without raising suspicions. Preferred venues for such activities were meetings of «UNESCO, the international scientific unions, and international scientific congresses and conventions». just the kind of events that would regularly be held on neutral Swiss soil. Informal intelligence gathering thus simply refers to the fact that the knowledge that passes between scientists in informal discussions on a strategic science like physics, and in the conflictual climate of the Cold War, when so much was at stake and so much was hidden, that that

knowledge was an invaluable source of «intelligence» as to the strengths and weaknesses of one's rival's activities. In fact such informal discussions could reveal an enormous amount of information about scientist's abilities, about the quality and reach of the equipment they used, about their knowledge and understanding of the cutting edge literature, about their network of colleagues and contacts – all this over a long cup of coffee in a canteen. Silences and evasions were even more important in this process: they indicated areas in which the interlocutor was no longer free to talk, they pointed to areas of classified research: they were thus a window into the domain of classified research.

Informal methods of gathering knowledge that, in the context of the Cold War was deemed to be intelligence, became standard operating procedure in the United States, and no doubt in the Soviet Union too. Indeed we have considerable evidence to show that many US scientists who went abroad were debriefed about what they had learnt from colleagues and at conferences on returning home. There is also some evidence, but not a lot, suggesting that the scientific attaches whom we are dealing with in this meeting were enrolled in this intelligence gathering exercise. It was an exercise that was all the more important for the free world given the closed and suspicious nature of communist societies at the time. This then was one of the motives for the Ford Foundation's generous grants for international scientific exchange to CERN, grants whose changing international scope was defined in consultation with the CIA, the State Department, and the CERN Director General himself, and which exploited Swiss neutrality to encourage freewheeling discussions between physicists from the superpowers and their satellites.

How important was the information gained in this way? Generally speaking that is difficult to judge: not only are written sources difficult to obtain, but it is almost impossible to retroactively reconstruct the significance attached to a discussion on, say, meson physics in 1955. One notable exception is the trip reports of official delegates to the spectacular Atoms for Peace Conference held in August 1955. Inspired by President Eisenhower's famous speech in New York about 18 months before, 1400 delegates from 73 countries met at the UN in Geneva to discuss the peaceful applications of atomic energy. The US Atomic Energy Commission installed a working swimming pool reactor in the grounds of the UN building about 2km from the heart of Geneva, and select visitors were able to bring it up to power by gradually removing its control rods. Several bilateral arrangements were signed during the conference to provide friendly governments, including Switzerland, with enriched uranium for research purposes. Switzerland was also invited to buy the reactor put on display in Geneva at a knock-down price at the end of the meeting.

The international conference on the peaceful uses of atomic energy was deliberately located in Geneva to capitalize on the presence of the UN on Swiss soil, and to facilitate the free exchange of information in a neutral space between scientists throughout the world, and above all in the rival superpowers. As one news report noted, «Many scientists from East and West met for the first time. There were many luncheons, dinners, and serious discussions over coffee at the Palais des Nations….lasting friendships were formed among these scientists.» And a great deal was learnt. Melvyn Price, the chairman of a Congressional committee on atomic energy was shocked by strength of Soviet physics and wrote

that the US had to do something at once to affirm its lead: «at stake, wrote Price, «is not only our national defense, and well-being but our ability to compete with the Soviets in the struggle for men's minds throughout the free world.» Fred Seitz, a solid state physicist who was later the NATO science adviser was even more alarmed on learning of Valdimir Veksler's plans for a 10GeV accelerator. «The Soviet has challenged our leadership through the establishment of several institutes devoted to high-energy physics» wrote Seitz soon after getting home from Geneva, and it was up to the Department of Defense to seize the initiative and to reinstate it.

Veksler similarly turned his insights in Geneva to advantage to promote himself and his field when he got back to Moscow. He reported that before the Geneva conference, many US scientists «had believed that, with the isolation of the USSR, the development of science and technology there would be perverted». The Geneva conference had proved them wrong, had shown that the communist USSR was «successfully advancing along its own road and had achieved great results in science and technology». most notably Veksler's own project for a 10Gev accelerator. Thus do international conferences like that held in Geneva in August 1955 plug into national scientific and ideological agendas.

To conclude in a few words. A huge amount of fine work has been done on the nature of Swiss neutrality, and of its changing meaning as the country has adapted itself to changing geopolitical contexts. This paper has emphasized – and this is surely obvious to the majority of you here today – that there is another parallel story to be told, a history from the outside looking in, as it were. This history describes how different social actors have taken Swiss neutrality for granted and have exploited it to promote their own, sometimes narrow nationalist, ideological and even military social agendas. In a divided world Swiss neutrality has provided a resource and a refuge for sharing ideas and ideals – buts also as a mask for others to promote national policies which were anything but neutral. If a neutral Switzerland ceased to exist, something else would have to be invented to take its place.

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