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Austrian Vaccine Diplomacy. A Cold War Mission against Poliomyelitis

Summary

In 1960, Austria initiated diplomatic relations across the Iron Curtain to explore the possibility of ordering the oral polio vaccine (OPV) produced in the Soviet Union. The live attenuated vaccine promised to enhance immunity in communities and was both easier to administer and much cheaper than the inactivated vaccine (IPV). The American scientist Albert Sabin and his Russian ally Mikhail Chumakow had tested the new vaccine in large field trials across the USSR at the end of the 1950s. The satisfactory results were also noticed in Austria. Not only did the media report on the prospect of eradicating polio but the members of the Supreme Medical Council and other leading Austrian physicians also discussed Austria's stance towards polio prophylaxis. This paper uses the minutes of the Supreme Medical Council as well as related ministerial sources to establish the main conflict points in the debates surrounding the establishment of a national vaccination programme. Although negotiations with the USSR were eventually unsuccessful, the case of Austrian vaccine diplomacy sheds light on national and international interests and cooperation in the fight against polio during the Cold War.

Im Jahr 1960 nahm Österreich diplomatische Beziehungen über den Eisernen Vorhang hinweg auf, um eine mögliche Bestellung des in der Sowjetunion produzierten oralen Polioimpfstoffs (OPV) zu prüfen. Die Schluckimpfung versprach, die Immunität in der Bevölkerung zu stärken, und war sowohl einfacher zu verabreichen als auch wesentlich billiger als der bisher genutzte Totimpfstoff (IPV). Der amerikanische Wissenschaftler Albert Sabin und sein russischer Verbündeter Michail Tschumakow hatten den neuen Impfstoff Ende der 1950er Jahre in großen Feldversuchen in der gesamten UdSSR getestet. Die erfolgreichen Ergebnisse wurden auch in Österreich wahrgenommen. Nicht nur die Medien berichteten über die Aussicht auf die Ausrottung der Kinderlähmung, sondern auch die Mitglieder des Obersten Sanitätsrates und andere führende österreichische Mediziner diskutierten die Haltung Österreichs zur Polio-Prophylaxe. Anhand der Protokolle des Obersten Sanitätsrates sowie entsprechender ministerieller Quellen werden die wesentlichen Konfliktpunkte in den fachlichen Debatten um die Schaffung einer nationalen Impfstrategie herausgearbeitet. Obwohl die Verhandlungen mit der UdSSR letztlich erfolglos blieben, wirft der Fall der österreichischen Impfdiplomatie ein Licht auf die nationalen und internationalen Interessen und die Zusammenarbeit im Kampf gegen die Kinderlähmung während des Kalten Krieges.

Keywords

Poliomyelitis, Vaccine Diplomacy, Cold War, Early 1960s, Austria, USSR

Introduction

"We cannot allow geopolitical blinkers when it comes to vaccines", was how the Austrian Chancellor Sebastian Kurz defended his negotiations with Russia to secure large quantities of the viral vector vaccine *Sputnik V* for Austria at the end of March 2021.[1] Although vaccines against COVID-19 had been developed at lightning speed, production was lagging behind and distribution struggles at the international, national and local levels, as well as growing vaccine envy among the population, dominated the first half of 2021. Amidst this tense situation, the news that Kurz had explored purchase options for *Sputnik V* in a personal phone call with Russian President Vladimir Putin and had subsequently started negotiations with the international distributor *Russian Direct Investment Fund* (RDIF) caused a stir.[2] The fact that the vaccine lacked authorisation from the European Medicines Agency (EMA), which happens to still be pending, made the Austrian move a political issue within the European Union (EU).[3]

Despite the pending licencing, numerous countries worldwide had already concluded contracts with Russia. As of 31 March 2021, the use of *Sputnik V* had already reached global dimensions and the vaccine was being rolled out not only in Russia, Kazakhstan, Belarus, Serbia and Montenegro but also in Latin America (Mexico, Venezuela, Bolivia, Paraguay and Argentina), selected African countries (Algeria, Tunisia and Guinea), Iran, Pakistan, the United Arab Emirates and Bahrain, as well as in Laos.[4] In Austria's immediate vicinity, Hungary was immunising its population with the Russian vaccine by means of a national emergency use authorisation, and Slovakia had also received extensive deliveries of *Sputnik V*. It may not be surprising that the former socialist states turned against the official EU policy. However, Austria's ambitions caused not only irritation and numerous headlines within the Union. Domestically, the effectiveness of the vaccine was also questioned due to the lack of transparency of Russian research

1 Österreich will Corona-Impfstoff Sputnik V einsetzen, in: Zeit Online (30 March 2021), https://www.zeit.de/news/2021-03/30/oesterreich-will-corona-impfstoff-sputnik-v-einsetzen (last access: 30.09.2021); Österreich verhandelt mit Russland über eine Million Sputnik-Dosen, in: Wiener Zeitung (30 March 2021), https://www.wienerzeitung.at/nachrichten/politik/europa/2098469-Russland-bietet-Oesterreich-1-Million-Sputnik-Dosen-an.html (last access: 30.09.2021).

2 Ibid.

3 The EU criticized the use of vaccines for propaganda purposes, saying that science diplomacy was being misused as a means of power. Russia and also China were particularly criticized due to their offensive approach. The New York think tank The Soufan Center even spoke of a "new arms race" reminiscent of the Cold War. Cf. Österreich hofft auf schnelles grünes Licht der EMA für Sputnik-Impfstoff, in: Kurier (9 April 2021), https://kurier.at/politik/inland/oesterreich-hofft-auf-schnelles-gruenes-licht-der-ema-fuer-sputnik-impfstoff/401345570 (last access: 30.09.2021).

4 Alexander Dworzak / Simon Rosner, Sputnik V in Österreich. Landen heißt nicht impfen, in: Wiener Zeitung (31 March 2021), https://www.wienerzeitung.at/nachrichten/politik/oesterreich/2098690-Sputnik-V-in-Oesterreich-Landen-heisst-nicht-impfen.html (last access: 30.09.2021).

findings. Reports from Slovakia criticizing the available data on production and testing procedures did the rest to discredit the Russian vaccine.[5]

Nevertheless, on 10 April 2021, the Austrian Chancellor announced that the negotiations with Russia had "almost reached their end".[6] After that, however, silence fell over the Russian vaccine. Two months later, still nothing had happened. The contracts had not been signed and the widely announced deliveries of one million vaccine doses never arrived.[7]

While the 2021 case must, in retrospect, be interpreted as a PR stunt to burnish the image of a failing chancellor,[8] this article focuses on its historical antecedents during the Cold War. For, 60 years before the failed *Sputnik V* negotiations, Austria and the Soviet Union had already engaged in serious negotiations in the context of poliomyelitis prevention. In fact, in the early 1960s, Austria was attempting to purchase large quantities of attenuated live polio vaccine (oral polio vaccine (OPV)) from Russian producers.

This article examines the reasons why Austria, which had only recently emerged from Allied occupation and had formed a neutral state since 1955, proactively considered the introduction of vaccination with a live vaccine as early as 1959, thus tackling a sensitive health policy issue of the early Cold War. What were the motives against maintaining the path taken by the Western countries to combat the infectious disease with the inactivated poliovirus vaccine (IPV) developed by Jonas Salk (1914–1995), and what were the arguments in favour of the novel albeit riskier live attenuated vaccine developed by the American Albert Sabin (1906–1993) and administered millions of times by his Russian colleagues Mikhail Chumakov (1909–1993) and Anatol Smorodintsev (1901–1986)? Austria's official negotiations with the USSR are analysed in the context of *science diplomacy.*[9] The article identifies the national and international actors involved in the diplomatic mission and enquires into the strategies pursued by Austrian decision-makers in their national fight against poliomyelitis. It should be noted that the negotiations at the beginning of the 1960s failed, the reasons for which are clarified in this article. How Austria nonetheless managed to become the first country in the Western world to immunise the most vulnerable age groups, namely children and adolescents aged six months to 21 years, with OPV during a nationwide mass vaccination campaign in November 1961 is also explored.[10]

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5 Gerald Schubert, Debatten über Sputnik V in der Slowakei wieder aufgeflammt, in: Der Standard (27 May 2021), https://www.derstandard.at/story/2000126976296/debatten-ueber-sputnik-v-in-der-slowakei-wieder-aufgeflammt (last access: 30.09.2021).

6 Kurz: Sputnik-Verhandlungen „de facto am Ende angelangt", in: Die Presse (10 April 2021), https://www.diepresse.com/5963851/kurz-sputnik-verhandlungen-de-facto-am-ende-angelangt (last access: 30.09.2021).

7 Harald Dragan / Martin Kallinger, Warum es um „Sputnik V" wieder leise geworden ist, in: Kronen Zeitung (13 May 2021), https://www.krone.at/2411883 (last access: 30.09.2021).

8 Cf. the parliamentary question by the NEOS: Gerald Loacker, Anfrage betreffend Sputnik als Ablenkungsmanöver, in: Nationalrat XXVII Geschäftsperiode, Anfrage 6167/J, 6 April 2021, https://www.parlament.gv.at/PAKT/VHG/XXVII/J/J_06167/index.shtml (last access: 30.09.2021).

9 On the concept of science diplomacy, cf. Pierre-Bruno Ruffini, Conceptualizing Science Diplomacy in the Practitioner-Driven Literature. A Critical Review, in: Humanities and Social Sciences Communication 124/7 (2020), https://doi.org/10.1057/s41599-020-00609-5; Paul Arthur Berkman, Evolution of Science Diplomacy and its Local-Global Applications, in: European Foreign Affairs Review 24 (2019), 63–80. On the context of science in public policy making cf. Peter Weingart, Scientific Expertise and Political Accountability. Paradoxes of Science in Politics, in: Science and Public Policy 26/3 (1999), 151–161.

10 For an overview of the history of poliomyelitis vaccination, see: Marina Hilber, Ein unerwarteter Erfolg? Die Geschichte der Poliomyelitis-Schutzimpfungen in Österreich, in: Wolfgang Schütz et al., eds., Medizin in Wien nach 1945. Strukturen, Aushandlungsprozesse, Reflexionen (Göttingen 2022), 381–402.

With these focal points, the article locates itself within the tradition of medical historical research on the Cold War, which has illustrated the fight against poliomyelitis in particular as a paradigmatic example of cooperation across the Iron Curtain. Besides the dissemination of Jenner's cowpox vaccine, polio prevention has been described as the prime example of successful *science diplomacy*, or more precisely, *vaccine science diplomacy*.[11] Based on interviews with Albert Sabin and the scientist's correspondence with his Russian colleagues, Saul Benison traced the path of OPV from the USA to the USSR and back to the West as early as the 1980s, analysing the difficulties and challenges of American-Soviet collaboration.[12] Dóra Vargha presented a comprehensive national case study with her work on the history of polio prevention in Hungary. She, too, focused on international diplomacy "across the Iron Curtain".[13] For divided Germany, it was Ulrike Lindner who first took up the topic and compared Germany to Great Britain. Malte Thießen also focused on polio vaccination in the context of media popularisation campaigns.[14] The interdependence of collaboration and system competition, using the example of German-German relations during the Cold War, is the subject of Annette Hinz-Wessels' current research. She has also contributed a paper on the introduction of live vaccines in the Federal Republic of Germany (FRG) and the German Democratic Republic (GDR) to this special issue.[15]

The following content focuses on the extremely dynamic early phase of the Cold War between 1959 and 1961. Based on the minutes of the Supreme Medical Council (= Oberster Sanitätsrat, hereinafter OSR), the passionate disputes and decision-making processes of this advisory body are evaluated. Supplemented by the actual diplomatic exchange between the Austrian negotiators – the Federal Ministry of Social Administration (= Bundesministerium für soziale Verwaltung, hereinafter BMfsV) as well as the Ministry of Foreign Affairs – and their Soviet counterparts, the events surrounding the introduction of oral vaccination in Austria can be traced. First, Austria's epidemiological landscape and predominant health policy at the end of the 1950s are clarified, before a second section looks into the actual *vaccine science diplomacy* with the Soviet Union. A third section then provides an overview of the actual introduction of oral vaccination in 1961 and its track record.

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11 Peter J. Hotez, Vaccine Diplomacy. Historical Perspectives and Future Directions, in: PLoS Neglected Tropical Diseases 8/6 (2014), e2808, https://doi.org/10.1371/journal.pntd.0002808; Peter J. Hotez, Restoring Vaccine Diplomacy, in: Journal of the American Medical Association (= JAMA) 325/23 (2021), 2337–2338; Sudip Bhattacharya et al., Role of Vaccine Science Diplomacy in Low-Middle-Income Countries for Eradicating the Vaccine-Preventable Diseases. Targeting the "Last Mile", in: Journal of Family Medicine and Primary Care 10 (2021), 2739–2744.

12 Saul Benison, International Medical Cooperation. Dr Albert Sabin, Live Poliovirus Vaccine and the Soviets, in: Bulletin of the History of Medicine 56/4 (1982), 460–483.

13 Cf. Dóra Vargha, Polio Across the Iron Curtain. Hungary's Cold War with an Epidemic (Cambridge 2018).

14 Ulrike Lindner, Gesundheitspolitik in der Nachkriegszeit. Großbritannien und die Bundesrepublik Deutschland im Vergleich (Munich 2004), especially 252–257; Ulrike Lindner / Stuart S. Blume, Vaccine Innovation and Adoption. Polio Vaccines in the UK, the Netherlands and West Germany, 1955–1965, in: Medical History 50 (2006), 425–446; Malte Thiessen, Vorsorge als Ordnung des Sozialen. Impfen in der Bundesrepublik und der DDR, in: Zeithistorische Forschungen 10/3 (2013), 409–432. On the cultural history of vaccination and the media popularization campaigns see: Malte Thiessen, Immunisierte Gesellschaft. Impfen in Deutschland im 19. und 20. Jahrhundert (= Kritische Studien zur Geschichtswissenschaft 225, Göttingen 2017).

15 Annette Hinz-Wessels, Medizinische Verflechtung und Systemkonkurrenz im Kalten Krieg. Poliobekämpfung im geteilten Berlin, in: Medizinhistorisches Journal 55/2 (2020), 132–171. Cf. also Annette Hinz-Wessels, Entscheidungsprozesse der bundesdeutschen Gesundheitspolitik im Kalten Krieg. Die Einführung der Schluckimpfung in der Bundesrepublik im Jahr des Mauerbaus in this special issue.

Austrian Polio Policy

During the 20th century, polio was synonymous with medical helplessness and broken dreams – also in Austria. Every year, Austrian parents feared the unpredictable consequences of an infection – would their children survive the annual epidemic waves unharmed or marked by permanent paralysis or even count among the fatalities? Medicine and politics alike were under enormous pressure to develop an effective prevention strategy.

A vaccine was finally developed by the mid-1950s, but the practical introduction of Jonas Salk's inactivated poliovirus vaccine (IPV) turned out to be a tedious task. The Cutter incident[16], in which batches of improperly inactivated vaccine were administered, causing serious illness in several children in the US, thwarted the rapid introduction of this preventive measure in Austria as well. Decision-making bodies delayed the approval of the polio vaccine until 1958. Even then, IPV, which had to be administered in three doses by injection, did not gain momentum. The federal government and provinces disagreed on financing strategies, leading to inconsistent implementation schemes in the nine provinces. With the argument that Salk's vaccine 'only' provided protection for the individual and did not break the chain of infection, the federal government delegated (cost) responsibility to the provinces. Hence, a variety of strategies were developed at the provincial level: while pioneers such as Vienna offered free vaccination for particularly vulnerable age groups, other provincial governments such as that of Vorarlberg were reluctant to provide public vaccinations due to the high costs involved.[17] However, increasing pressure from the public and the misfortune of a major outbreak in the summer of 1958 convinced even the sceptics eventually.[18] Despite initial hesitancy, IPV rollout started in all Austrian provinces in 1958. Although the medical profession and politicians attested to the Austrian population's great fear of polio, vaccination coverage rates remained far below expectations. The Salk vaccine may indeed have been unattractive due to its being administered by injection, making parents shy away from the 'jab' in view of the tears shed by their children. However, the fact that not even half of the vulnerable age groups could be reached at the national level is largely due to the structural weaknesses of the federal system, which manifested themselves via disparate organisation and a lack of cost efficiency.[19]

The low vaccination coverage rates had noticeable effects. In 1959, one year after the authorisation of the Salk vaccine, Austria still recorded 696 cases of polio and almost 100 deaths, which corresponds to a lethality of 14 percent.[20] Therefore, Heinrich Manfred Jettmar (1889–1971), the professor of Microbiology and Hygiene at the University of Graz and a member of the OSR, initiated a detailed consideration of the topic by the OSR in December 1959.

16 On this accident connected to individual batches of the Salk vaccine that were not fully inactivated, see: Paul A. Offit, The Cutter Incident. How America's First Polio Vaccine Led to the Growing Vaccine Crisis (New Haven–London 2007); Richard J. Altenbaugh, Vaccination in America. Medical Science and Children's Welfare (Cham 2018), 233–239.

17 Hilber, Unerwarteter Erfolg, see note 10, 391–395.

18 Cf. in detail the article by Elisabeth Dietrich-Daum, Impfen erzwingen: Mündige Bürger*innen und säumige Landespolitiker in der Vorarlberger Poliomyelitis-Epidemie von 1958 in this special issue.

19 Hilber, Unerwarteter Erfolg, see note 10, 395.

20 Karl Schindl, Der Kampf gegen die Kinderlähmung geht weiter, in: Soziale Sicherheit. Zeitschrift für die Österreichische Sozialversicherung 3 (1964), 106–108, 106.

Jettmar was one of the most prominent epidemiologists and hygienists in post-war Austria. As a renowned plague expert who had spent a large part of his scientific career in the Far East – in Siberia, Manchuria and China[21] – he primarily had a professional interest in combating polio. However, a personal motive must also be mentioned: in 1930, his six-year-old son had contracted polio during their stay in China.[22] Jettmar, who spoke Russian fluently due to his previous career abroad, referred to recent publications from the Russian journal *Voprosy Virusologii* (Problems of Virology), published by the Russian Academy of Sciences. Specifically, he reported on the recent polio conference in Moscow in May 1959, which had been attended by representatives from the USA and the USSR to discuss the jointly achieved progress in the field of live attenuated vaccines.[23]

Jettmar's lecture was met with lively interest within the OSR. "The question of live vaccines is highly controversial. I have just returned from Russia and have had the opportunity to talk about it; they are all extremely enthusiastic",[24] said the OSR's chairman, the internist Karl Fellinger (1904–2000). Richard Bieling (1888–1967), in particular, at that time still the head of the Institute of Hygiene at the University of Vienna and an expert in the field of virology,[25] believed that it was time to ventilate the possibility of a national authorisation of the vaccine and to decide whether the state should actively promote oral vaccination as a substitute for the Salk vaccine. Bieling argued that not only was the improved individual immune response and the establishment of reliable herd immunity an advantage, but the oral vaccination was also easier to administer and significantly cheaper. Nevertheless, Western countries remained sceptical about oral vaccination. The reason for this, according to Bieling, was the lack of confidence in the profoundness of the Soviet studies.

> "It is clear that nothing really happened, i.e. deaths or things like that. But people distrust the Russian investigations – I don't mind using that word – in the sense that they say: yes, they can't have been able to keep track of every single case, as was the case when the Salk vaccine was

21 On Jettmar's eventful career: Andreas Huber, Heinrich Mannfred Jettmar, in: Gedenkbuch für die Opfer des Nationalsozialismus an der Universität Wien 1938, https://gedenkbuch.univie.ac.at (last access: 10.10.2021). On his scientific work: Heinz Flamm, Die Geschichte der Staatsarzneikunde, Hygiene, Medizinischen Mikrobiologie, Sozialmedizin und Tierseuchenlehre in Österreich und ihrer Vertreter (Vienna 2012), 236–239.

22 Gerd Kaminski, Plague Doctor in China. Das abenteuerliche Leben des Dr. Heinrich Jettmar (Vienna 2010), 261.

23 Österreichisches Staatsarchiv (= Austrian National Archive, ÖStA), BmfsV, Sektion V 1960, Schachtel (= Sch.) 1262, Zahl (= Zl.) 20654: Oberster Sanitätsrat; Diskussion über Vaccinationsprobleme in der 68. und 69. Vollversammlung.

24 Ibid. Austria and the Soviet Union maintained an intensive mutual visiting practice. In 1958, some 31 Austrian delegations travelled to the USSR in a political and economic capacity. Austria apparently did not maintain such intensive contacts with any other former occupying power. Wolfgang Mueller, A Good Example of Peaceful Coexistence? The Soviet Union, Austria, and Neutrality, 1955–1991 (Vienna 2011), 106–108.

25 In this capacity, he was not only a member of the OSR since 1952 but also a member of the World Health Organisation (WHO) expert committee on viral diseases. Bieling retired in 1959. Cf. Felix Czeike, Richard Bieling, in: Historisches Lexikon Wien, https://www.geschichtewiki.wien.gv.at/Richard_Bieling (last access: 20.10.2021). On the problematic biography of Richard Bieling and his involvement in the typhus experiments in the Buchenwald concentration camp, cf. Ernst Klee, Das Personenlexikon zum Dritten Reich. Wer war was vor und nach 1945 (Frankfurt am Main 2003), 48–49; Paul Weindling, Epidemics and Genocide in Eastern Europe, 1890–1945 (Oxford–New York 2000), 341. A relatively uncritical appraisal of Bieling's scientific achievements and career stages can be found in: Flamm, Staatsarzneikunde, see note 21, 92–99.

tested. Many things will have happened that were not noticed in the course of the Russian circumstances. So, one has to remain calm in this matter."[26]

Other members of the OSR, such as Alfred Schinzel (1904–1981), the head of the Institute of Hygiene and Microbiology at the University of Innsbruck, also shared Bieling's assessment: as an outsider, one could not know what was really going on in the authoritarian socialist state.[27] Despite (international) publication activity and the participation of Soviet experts in conferences, it was apparently difficult to look behind the Iron Curtain and understand what was going on in the Soviet Union. However, such prejudices against the Soviet results not only dominated the intra-Austrian discourse but were also expressed internationally. The US, in particular, repeatedly criticised the USSR's lack of scientific transparency and lax examination standards.[28] Even the inspection of the Soviet production facilities conducted by Dorothy Horstmann (1911–2001)[29] on behalf of the WHO and her positive report on the high quality of vaccination procedures in large parts of the Soviet Union could do little to change the prevailing image of Soviet conditions.[30] However, doubt was not only cast on the Russians' overly positive reports on the use of the Sabin vaccine; the studies of Hilary Koprowski (1916–2013) in the Belgian Congo were also viewed critically by the Austrian experts due to the lack of state regulations in the African country. Schinzel summarised: "[…] there was no control, it was regarded as an underdeveloped country where he could do what he wanted."[31] However, Schinzel was probably only partly concerned with the ethics of these human experiments, focussing his critique primarily on the questionable objectivity of the results due to the lack of national supervisory bodies. In fact, the voluntary nature of the participants in all these field trials – whether they were carried out within the totalitarian system of the Soviet Union or in (post)colonial settings in Africa or Latin America – was never questioned by the OSR. On the contrary, the military organisation of the vaccination campaigns and the accompanying media offensive launched in the Soviet Union were viewed with a certain appreciation, their results even with a twinge of envy. Nevertheless, the OSR agreed that vaccination, if introduced in

26 ÖStA, BmfsV, Sektion V 1960, Sch. 1262, Zl. 20654: Oberster Sanitätsrat; Diskussion über Vaccinationsprobleme in der 68. und 69. Vollversammlung.

27 Ibid.

28 Benison, International Medical Cooperation, see note 12, 477–479; Lindner / Blume, Polio Vaccine Innovation, see note 14, 438.

29 Cf. for example: Dorothy M. Horstmann, The Sabin Live Polio Virus Vaccination Trials in the USSR, 1959, in: The Yale Journal of Biology and Medicine 64 (1991), 499–512. On Dorothy Horstmann's biography and professional achievements cf. Heather A. Carleton, Putting Together the Pieces of Polio. How Dorothy Horstmann Helped Solve the Puzzle, in: The Yale Journal of Biology and Medicine 84/2 (2011), 83–89.

30 Benison, International Medical Cooperation, see note 12, 478–479. The skepticism of US researchers came to the fore at the Second International Conference on Live Polio Vaccines in June 1960. Charles Armstrong, one of the American pioneers in polio research, questioned the safety of the live vaccine. The Soviet delegation responded to the open criticism with the following statement: "I would like to assure Dr Armstrong of one thing, that we in the Soviet Union love our children and are concerned for their well being as much as people in the United States, or any other part of the world are for their children." Benison, International Medical Cooperation, see note 12, 479.

31 ÖStA, BmfsV, Sektion V 1960, Sch. 1262, Zl. 20654: Oberster Sanitätsrat; Diskussion über Vaccinationsprobleme in der 68. und 69. Vollversammlung. Cf. on Hilary Koprowski's controversial field trials: Gareth Williams, Paralysed with Fear. The Story of Polio (New York 2013), 218–230.

Austria, could only be provided on a voluntary basis. Mandatory vaccination was never on the agenda. In this sense, the Austrian results underscore Dóra Vargha's thesis that after World War II and the Nazi mass crimes, the West was particularly sensitive to any kind of coercion in the implementation of public health measures.[32]

The initial debate about oral polio vaccination in the OSR clearly reflects the conflict in which some Western nations found themselves at the end of the 1950s. The Salk vaccine, which had been touted as a game changer, did not quite catch on, and the new live attenuated vaccine was dubious because of the socialist involvement in its testing. Some even called it a "communist vaccine".[33] Oral vaccination had become a political issue, a sideshow of the Cold War. Austria seemed to feel caught in the middle. Thus, although it looked to the East with (incredulous) enthusiasm, it did not want to break away from the Western majority position, at least not in 1959, and oriented its opinion-making strongly towards the USA.[34]

Nevertheless, the Austrian expert committee wanted to find out more about what was going on in the Soviet Union. For this purpose, Franz Pötsch, employee of the Federal Bacteriological and Serological Investigation Institute in Vienna,[35] was sent on a scientific diplomatic mission. With the help of a WHO scholarship, he was able to get to know the production and testing conditions of live vaccines during a stay in Moscow and Leningrad (today, St. Petersburg) lasting several months in the spring of 1960.[36]

Pötsch's report was entirely positive. His stay as a guest at the institutes of Chumakov and Smorodintsev had convinced him of the effectiveness of the live vaccine, the efficacy of the monovalent form being 95.8 percent when administered in three doses. Pötsch, who could participate in the Fourth International Symposium on Live Vaccines in Moscow, also estimated the danger of the attenuated virus mutating and causing serious outbreaks as low. The Soviet medical authorities had additionally minimised this theoretical danger to the unvaccinated by "feeding the virus to practically the entire population of the area to be immunised within a short time after the most careful propagandistic preparation"[37], thus preventing secondary infections. The Austrian authorities realised early on that the success of OPV would depend strongly on the willingness of the population to have themselves and their children vaccinated. The fact that the vaccine could be taken as a liquid solution with cold tea, juice, milk or syrup rather than by intramuscular injection promised a much higher acceptance rate. In the USSR,

32 Dora Vargha, Vaccination and the Communist State. Polio in Eastern Europe, in: Christine Holmberg / Stuart Blume / Paul Greenough, eds., The Politics of Vaccination. A Global History (Manchester 2017), 77–98, 90. Cf. also the concept of accompanied voluntarism in Thiessen, Immunisierte Gesellschaft, see note 14, 218–227.

33 Benison, International Medical Cooperation, see note 12, 482.

34 Attached to the relevant OSR file was a clipping from the JAMA, which quoted the decision of the American Surgeon General Leroy E. Burney that as long as Great Britain and other Western countries had not declared the oral vaccine safe and binding regulations existed for testing the vaccine, the USA could not allow approval either. For this reason, IPV should be continued. This is the path that Austria initially took as well. ÖStA, BmfsV, Sektion V 1960, Sch. 1262, Zl. 20654: Diskussion über Vaccinationsprobleme in der 68. und 69. Vollversammlung.

35 Later, Franz Pötsch became the head of the Federal Bacteriological and Serological Investigation Institute, the predecessor institution of today's AGES (= Österreichische Agentur für Gesundheit und Ernährungssicherheit / Austrian Agency for Health and Food Safety). Cf. Flamm, Staatsarzneikunde, see note 21, 131.

36 ÖStA, BmfsV, Sektion V 1960, Sch. 1262, Zl. 20654: Diskussion über Vaccinationsprobleme in der 68. und 69. Vollversammlung.

37 ÖStA, BmfsV, Sektion V 1960, Sch. 1262, Zl. 20654: Oberster Sanitätsrat; Orale Schutzimpfung mit Lebendvakzine gegen Poliomyelitis.

the liquid was dripped on sugar cubes; equally popular were prefabricated vaccine dragées, the liquid vaccine having been incorporated into a candy base. The Soviets had even developed a colour code corresponding to the three virus types: pink for type I, purple for type II and blue for type III; the trivalent vaccine was sold as a white candy. Upon special request, the confectionery factory also offered vaccine-filled chocolate candy.[38]

Despite the aforementioned advantages, great uncertainty and scepticism still prevailed in the OSR. Field trials with the live vaccine developed by the American Herald Cox (1907–1986) (produced by the Lederle Laboratories) in the canton of St. Gallen in Switzerland had been terminated prematurely by the health authorities and had not yielded clear results. The vaccination campaign with the same vaccine in West Berlin had led to several infections and even deaths. Interestingly, a field trial with the Cox vaccine, which the Lederle company wanted to carry out with the support of the Federal Bacteriological and Serological Research Institute in Austria, was not discussed in the OSR.[39] Although the trial results of neighbouring countries were inconclusive, the WHO committee report from the Washington Conference of June 1960 strongly recommended OPV due to its logistical advantages, primarily for countries with less developed health care systems. However, at this same conference, new concerns were raised about the live attenuated vaccine: American researchers had detected a previously unknown virus in the live vaccine. Consequently, the question as to the effects of this *vacuolating agent* (simian virus 40) on humans was raised.[40] At this point, a harmful or even carcinogenic effect could not be ruled out, even though Albert Sabin denied any danger based on the empirical data collected in the USSR, reducing common fears to a theoretical possibility.[41] Given this

38 Mikhail Chumakov, Appendix 2: Methodical Instructions on the Organization and Carrying out of Prophylactic Oral Vaccination with the Live Attenuated Poliovirus Vaccine, in: Mikhail Chumakov, On Mass Oral Immunization of Population in the Soviet Union against Poliomyelitis with Live Vaccine from A.B. Sabin's Attenuated Strains (Moskow 1960), 69–77.

39 In 1960, the files of the Federal Ministry of Social Administration contained documents on the authorisation of a field trial with trivalent Cox vaccine by the Lederle company (Dr F. Ottati). Franz Pötsch of the Federal Bacteriological and Serological Research Institute (head: Ernst Petrowsky) and the vaccinating doctors Obersanitätsrat Dr Mittelbach of the Styrian Medical Directorate and Primarius Dr Scholz of the Linz Children's Hospital were involved. Within the framework of the study, about 150 to 200 individuals in each setting were to be vaccinated with the Cox vaccine. Pötsch was to determine the effectiveness of the vaccination by means of serological tests and send the results to the Lederle laboratory. The Federal Bacteriological and Serological Research Institute was to receive a research grant of 75,000 schillings. However, it is not clear from the files whether this study was actually conducted. ÖStA, BMfsV, Sektion V 1960, Sch. 1261, Zl. 16590: Durchführung von Laboratoriumsuntersuchungen zur Kontrolle des Erfolgs von Impfungen mit trivalenter oraler Poliomyelitisvaccine Lederle; ÖStA, BMfsV, Sektion V 1960, Sch. 1261, Zl. 134379: Schutzimpfung gegen Poliomyelitis mit lebenden, abgeschwächten Erregern.

40 B.H. Sweet / Maurice R. Hilleman, Detection of a "Non-Detectable" Simian Virus (Vacuolating Agent) Present in Rhesus and Cynomolgus Monkey-Kidney Cell Culture Material. A Preliminary Report, in: Pan American Health Organization / World Health Organization, eds, Second International Conference on Live Poliovirus Vaccines, Washington, D.C., 6–10 June 1960 (Washington 1960), 81–89.

41 Oshinsky describes Sabin's reaction to the criticism of his vaccine as follows: "Sabin replied, with typical bravado, that his vaccine was safe, that the field trials just completed on 80 million Russian children had proved this beyond a reasonable doubt, and that no evidence existed to show that SV40 [simian virus, vacuolating agent] was dangerous to human beings." David M. Oshinsky, Polio. An American Story (New York 2005), 279–282, quote on page 281. On the link between polio vaccination and cancer, cf. a study by the US Immunization Safety Review Committee: Kathleen Stratton / Donna A. Alamario / Marie C. McCormick, eds., Immunization Safety Review. SV40 Contamination of Polio Vaccine and Cancer (Washington 2003). Nevertheless, the suspicion could not be entirely dispelled, a fact that was reflected in a tendentious popular science review of this chapter of vaccination

ambivalent situation, Heinrich Jettmar had a hard time convincing the OSR to accord with his urgent request to begin preparations for oral mass vaccination in Austria as soon as possible. However, after heated discussions, the motion was eventually adopted in June 1960.[42]

The topic of live vaccines continued to occupy the Austrian authorities and decision-making bodies intensively in the summer of 1960. At an extraordinary meeting of the Austrian Society for Microbiology and Hygiene[43] in July 1960, Martin Eugene Flipse (1919–2008) from Florida[44] and Georg Henneberg (1908–1996), the head of the FRG's Federal Health Agency (Bundesgesundheitsamt), reported on the results of the vaccination campaigns they had conducted.[45] An opportunity to learn about Albert Sabin's point of view also arose at a round table conference organised by the *Institut für Haemoderivate* (Institute for Haemoderivatives) in Vienna. The American expert reported on the success of the vaccination campaigns in his hometown of Cincinnati and in Hungary, where the majority of children had been vaccinated in a mass campaign and the number of new polio cases had declined rapidly.[46] Representatives of the three neighbouring countries Austria, Germany and Switzerland also met for discussions within the framework of the so-called "poliomyelitis cooperation" during the Seventh Meeting of the Society for Microbiology and Hygiene in Pörtschach, Carinthia, in September 1960.[47] Henneberg made it clear that following the events in Berlin, no unauthorised vaccines should ever be used in the FRG again. Austria agreed with this position, but in 1960, there were still no generally recognised testing regulations for the live oral vaccine and the country did not have a national testing institute, having to rely on foreign test reports.[48]

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history: Debbie Bookchin / Jim Schumacher, The Virus and the Vaccine. The True Story of a Cancer-Causing Monkey Virus, Contaminated Polio Vaccine, and the Millions of Americans Exposed (New York 2004).

42 ÖStA, BMfsV, Sektion V, Sch. 1262, 1960, Zl. 20654: Oberster Sanitätsrat; Orale Schutzimpfung mit Lebendvakzine gegen Poliomyelitis.

43 Heinrich Jettmar was the chairman of the Austrian Society for Microbiology and Hygiene between 1959 and 1961. Flamm, Staatsarzneikunde, see note 21, 239.

44 Flipse had successfully vaccinated 420,000 people in Miami Dade County with Lederle's Cox vaccine. Martin Eugene Flipse et al., A Preliminary Report on a Large-Scale Field Trial with the Oral Cox-Lederle Attenuated Poliomyelitis Vaccine in Dade County (Miami), Florida, in: Pan American Health Organization / World Health Organization, eds, Second International Conference on Live Poliovirus Vaccines, Washington, D.C., 6–10 June 1960 (Washington 1960), 435–444.

45 ÖStA, BmfsV, Sektion V 1960, Sch. 1262, Zl. 20654: Oberster Sanitätsrat; Orale Schutzimpfung mit Lebendvakzine gegen Poliomyelitis.

46 ÖStA, BmfsV, Sektion V 1960, Sch. 1261, Zl. 20654: Oberster Sanitätsrat: Orale Schutzimpfung gegen Poliomyelitis, Referat OSR Prof. Jettmar bei der 72. Vollversammlung des OSR am 22.10.1960.

47 ÖStA, BMfsV, Sektion V 1960, Sch. 1261, Zl. 20654, 92552: Besprechung über Poliomyelitis-Lebendvakzine am 14.9.1960 in Pörtschach. Cf. on poliomyelitis cooperation in the region: Hinz-Wessels, Medizinische Verflechtung, see note 15, 151. On the publication activity that grew out of this scientific cooperation: Werner Anders / Franz Friza / Meinrad Schär, Die epidemiologische Situation der Poliomyelitis in der Bundesrepublik Deutschland, der Schweizerischen Eidgenossenschaft und der Republik Österreich, in: Mitteilungen der österreichischen Sanitätsverwaltung 62/1 (1961), 1–9.

48 ÖStA, BmfsV, Sektion V 1960, Sch. 1262, Zl. 20654: Oberster Sanitätsrat; Orale Schutzimpfung mit Lebendvakzine gegen Poliomyelitis. The vaccine from the Lederle company, which had not yet been licensed, had been a gift to West Berlin. Lindner, Gesundheitspolitik, see note 14, 253–254; Hinz-Wessels, Medizinische Verflechtung, see note 15, 164–166. The Lederle company apparently tried to advance numerous field trials in Europe by means of such gifts and generous research grants.

Sabin's visit to Vienna was received with mixed feelings. Members of the OSR criticised his business-like demeanour. In the discussion, Jettmar had demanded an objective comparison with Cox's and Koprowski's strains, which Sabin refused. In his opinion, the success in Eastern Europe made a clear point: only the Sabin strains were the future of OPV and the Salk vaccine would soon be a thing of the past.[49] Despite their personal criticism of Sabin, however, the OSR ultimately authorised his virus strains exclusively. The decisive factor leading to the preference for the vaccine based on Sabin strains was the recommendation of the WHO on the one hand and the about-turn of the USA in the matter of live vaccines on the other. As the Journal of the American Medical Association (JAMA) reported in September 1960, Surgeon General Leroy E. Burney was now preparing a mass vaccination campaign for 1961.[50] The OSR thus saw its position reaffirmed and, at its 72nd plenary meeting in October 1960, renewed the call to immediately begin preparations for the implementation of OPV. The immunisation campaign was expected to address all children and adolescents between the ages of two months and 21 years. The necessary law on public vaccination against poliomyelitis, which had already been drafted in 1959, was quickly adapted to the requirements of oral vaccination and was passed by the end of 1960.[51]

The intensive, controversial and heated discussions in the OSR as well as the expert opinions from Austria and abroad had finally led to a ground-breaking decision by the country's supreme medical body. The decision-making process of the Austrians differed profoundly from what Annette Hinz-Wessels has attested for West Germany, as it was not based solely on the results of Western studies. Rather, the Austrians tried to secure the best of both worlds.[52] Thus, there was no reluctance in gathering Soviet information or making direct contact with a key player in OPV development, Albert Sabin.[53] What may be surprising, however, is the fact that although the information channels to the East were open and there was an exchange of scientific diplomacy, these contacts were limited to the Soviet Union. There were no official contacts with Austria's immediate communist neighbours Hungary and the Czechoslovak Socialist Republic (ČSR), both of which were pioneers in administering OPV. In 1958 and 1959, the ČSR had conducted extensive field trials with polio vaccine of its own production[54] as well as purchased batches of Soviet vaccine. By 1960, 93 percent of Czechoslovak children aged

49 ÖStA, BmfsV, Sektion V 1960, Schachtel 1261, Zl. 20654: Oberster Sanitätsrat: Orale Schutzimpfung gegen Poliomyelitis, Referat OSR Prof. Dr. Jettmar bei der 72. Vollversammlung des OSR am 22.10.1960.

50 ÖStA, BMfsV, Sektion V 1960, Sch. 1261, Zl. 20654: OSR Referat von Prof. Dr. Jettmar zu Pkt. 2 der Tagesordnung (Entwurf einer Verordnung über die Schutzimpfung gegen Kinderlähmung).

51 Bundesgesetz vom 28. November 1960 über öffentliche Schutzimpfungen gegen übertragbare Kinderlähmung, BGBl. 244/1960, 2176–2177, also published in Mitteilungen der österreichischen Sanitätsverwaltung 62/1 (1961), 23–24. Richard Havlasek, Die rechtlichen Grundlagen der Schutzimpfung gegen übertragbare Kinderlähmung, in: Bundesministerium für soziale Verwaltung, ed., Schluckimpfung gegen Kinderlähmung in Österreich. Versuch einer Bilanz (Vienna–Frankfurt am Main–Zurich 1968), 19–25.

52 Austria had already repeatedly moved closer to the Soviet Union and thus dared to perform a diplomatic balancing act between East and West. One example is Austria's accession to the Danube Convention in 1959/60, which was viewed critically by the West. Mueller, Peaceful Coexistence, see note 24, 108–109.

53 In the FRG, the Cox vaccine of the Lederle company had been used and personal contacts had been established with Koprowski. However, the West German medical authorities refrained from "contacting Sabin". Hinz-Wessels, Medizinische Verflechtung, see note 15, 164–165.

54 The National Institute for Sera and Vaccines in Prague had produced the vaccine based on Sabin strains and was in close contact with Albert Sabin. Vargha, Vaccination and the Communist State, see note 32, 86.

two months to 14 years had been successfully immunised. In Hungary, the devastating polio epidemic in the summer of 1959 had led to a mass vaccination campaign with the Soviet vaccine, starting in December 1959. Vaccination was made mandatory for infants and toddlers aged three months to two years but offered "voluntarily" to older children and adults. Dóra Vargha stresses, however, that the voluntary nature of vaccinations in day-care centres and schools was quite dubious. By 1960, Hungary had immunised 2.5 million people.[55] During his visit to Vienna, Sabin himself offered to put the Austrians in touch with the responsible parties in their neighbouring countries. Whether these contacts actually came to fruition is not documented, but Czechoslovakia and Hungary were probably of less interest to Austria since their ideological orientation as satellite states of the USSR made them seem unobjective. Due to the limited amount of vaccine produced in the ČSR, they had also to be ruled out as potential vaccine suppliers.[56]

Although Heinrich Jettmar's initiative was ultimately successful, the experienced hygienist and epidemiologist still had to admit

> "[…] that despite this, many questions still remain unanswered. It can hardly be expected that they will be answered exhaustively in the next few years. One thing, however, is certain – apart from the problematic failures of the Lederle-Cox vaccine in West Germany – the oral vaccination of almost 100 million people has generally proven successful."[57]

The baton had thus been passed from the OSR to the federal government in 1960. The BMfsV immediately entered into negotiations with national and international pharmaceutical companies to find a suitable vaccine. However, this turned out to be a difficult diplomatic endeavour.

Negotiations across the Iron Curtain

Immediately after the OSR's plenary meeting in June 1960, the BMfsV began to solicit offers from various pharmaceutical companies. Initially, contacts were made with the Austrian representatives of international companies such as Pfizer, Lederle, the Belgian company Recherche et Industrie Thérapeutic (R.I.T.) and the Austrian *Institut für Haemoderivate* in Vienna.[58] The vaccine of the Poliomyelitis Research Institute of the Russian Academy of Sciences in Moscow was also on the list but a direct request could not be made. The necessary information had to be obtained through diplomatic channels. On 11 July 1960, the BMfsV therefore sent an urgent request to the Ministry of Foreign Affairs.[59] The formal request to the Soviet authorities quickly yielded a positive result, with the Moscow Poliomyelitis Research Institute being able "to supply the Austrian health authorities with live vaccine against poliomyelitis in liquid and

55 Ibid., 87.

56 ÖStA, BMfsV, Sektion V, Sch. 1261, 1960, Zl. 20654: Oberster Sanitätsrat: Orale Schutzimpfung gegen Poliomyelitis; Referat OSR Prof. Dr. Jettmar bei der 72. Vollversammlung des OSR am 22. 10. 1960.

57 Ibid.

58 ÖStA, BMfsV, Sektion V, Sch. 1261, 1960, Zl. 20654: OSR Referat von Prof. Dr. Jettmar zu Pkt. 2 der Tagesordnung (Entwurf einer Verordnung über die Schutzimpfung gegen Kinderlähmung).

59 ÖStA, BMfsV, Sektion V 1961, Sch. 1360, Zl. 20654, 72642: Durchführung von Schutzimpfungen gegen Poliomyelitis mit Lebend-Vakzine. Vorarbeiten.

coated form, in any quantity and at any date".[60] Prices were set at 30.50 roubles per 1,000 doses of the candied monovalent vaccine and 57 roubles per 1,000 vaccine doses for the trivalent form. For all further negotiations, the Soviet Foreign Ministry referred the Austrians to the state-owned company *Sojuschimexport*, which managed the international sales of the vaccine.[61]

Sojuschimexport quickly found an importer in Austria that acted as an intermediary in the negotiations. From November 1960 on, the BMfsV negotiated with the Vienna-based *Österreichische Warenhandelsgesellschaft*. The ministry placed an order for 1,000 doses each of the monovalent and trivalent vaccines for testing purposes. In addition, they requested the corresponding production protocols and a governmentally approved test certificate for the batches concerned. Yet, the Russians were not prepared to issue such a test certificate and merely referred to a publication by Mikhail Chumakov which, in their view, contained all the relevant information on the effectiveness of the vaccine. Apparently, the Austrian request for production protocols and test certificates was met with incomprehension by the Soviets, who stated that such confirmations were unnecessary since "the quality is sold freely all the time".[62] Due to the fact that the Soviet Sabin vaccine was already in common use in numerous countries worldwide and millions of people had already been successfully immunised, the Soviets did not see themselves as subject to any obligation of legitimisation. However, it was not only the Austrian negotiators who had that impression; the French vaccine expert Charles Mérieux (1907–2001) also remembered his failed attempts to obtain exact data to verify the effectiveness of the Soviet vaccine: "When we asked the Soviet scientists to provide details and data, their only reply was that they had vaccinated 100 million people, and there were fewer and fewer cases of polio. They thought this was all we needed to know."[63] In Austria, the uncooperative Soviet attitude led to increasing doubts as to the seriousness of their offer. Karl Schindl (1903–1993), the head of the health department within the BMfsV, commented on the situation on 28 November 1960, informing the Federal Minister: "The fact that the state examination certificates are being withheld arouses the suspicion that the Soviet authorities are not particularly interested in such a delivery."[64]

In addition, the negotiators faced yet another problem. The price of the vaccine had increased significantly, and the Russians requested dollars, not roubles. Contrary to the original deal, which would have cost the state about one million Austrian schillings, the price for the required vaccine now amounted to over four million schillings.[65] The ministry suspected that the initial

60 ÖStA, BMfsV, Sektion V 1961, Sch. 1360, Zl. 20654, 95027: Poliomyelitislebendvakzine. Austria and the Soviet Union were linked by extensive economic exchange in the 1950s. Austria mainly supplied machinery and equipment for Russian industrial plants (turbines, generators, locomotives, excavators, ships, etc.) as well as consumer goods such as shoes and textiles. In return, the Soviet Union mainly supplied raw materials such as coal, asbestos and ores as well as agricultural goods such as wheat, maize and cotton. In addition, Austria had undertaken in the State Treaty to supply the Soviet Union with large quantities of oil free of charge between 1955 and 1961 in exchange for the "German property" confiscated at the end of the war. Mueller, Peaceful Coexistence, see note 24, 122–126.

61 ÖStA, BMfsV, Sektion V 1961, Sch. 1360, Zl. 20654, 95027: Poliomyelitislebendvakzine.

62 ÖStA, BMfsV, Sektion V 1961, Sch. 1360, Zl. 122396, 130648: Beschaffung von Poliomyelitis-Lebendvakzine.

63 Bernard Seytre / Mary Shaffer, The Death of a Disease. A History of the Eradication of Poliomyelitis (New Brunswick–London 2005), 87.

64 ÖStA, BMfsV, Sektion V 1961, Sch. 1360, Zl. 122396, 130648: Beschaffung von Poliomyelitis-Lebendvakzine.

65 ÖStA, BMfsV, Sektion V 1961, Sch. 1360, Zl. 122396: Poliomyelitis-Lebendvakzine russischer Provenienz.

price information had been given in ignorance of the Western price levels. The Soviets probably did not want to sell themselves short, and after the European and American prices for the live vaccine became known, had revised their offer upwards.[66]

The ambivalence of the Soviet reactions was displayed once again when the Russians willingly answered a direct enquiry via the Austrian embassy in Moscow concerning the quarantine and accommodation conditions of the laboratory monkeys from whose kidneys the vaccine was obtained. In addition, the BMfsV was provided with a total of 1,000 doses of the monovalent vaccine in both coated and liquid form for testing purposes. Representatives of the *Österreichische Warenhandelsgesellschaft* had brought these samples from Moscow and donated them to the Republic in order to "document our contribution in the fight against polio".[67] On the one hand, these small signs of goodwill from the Soviet side can probably be interpreted as an attempt not to jeopardise their basically good relationship with Austria during the "thaw" under Nikita Khrushchev.[68] On the other hand, they tried to gain power through Austria's dependence on the vaccine. The health-related diplomatic concession was probably also intended to burnish their scientific image in the West.[69] Therefore, the Austrian deal was highly important to the Soviets as a gateway to the West.

Shortly before Christmas 1960, another concession finally arrived in Vienna: the USSR's Deputy Minister of Health, Petr V. Gusenkov, provided a "certificate" on the national testing and control of live vaccines. However, this letter, comprising only two sentences, did not satisfy the Austrian authorities, as it did not provide any information about the actual production and testing criteria. Even a personal letter from Mikhail Chumakov, in which he assured the Austrians that the vaccine was being produced according to the WHO guidelines recently worked out in Geneva, did not dispel the Austrians' doubts.[70]

The BMfsV informed the *Österreichische Warenhandelsgesellschaft* that this certificate would not suffice to make a decision on the purchase of the vaccine. It lacked all the necessary technical information to enable a comparison with other suppliers, all of whom had provided very detailed documentation. The Austrian scepticism was perceived "with astonishment" by the Soviets, who apparently found it hard to believe that "government testing of poliomyelitis vaccines in the Soviet Union was not considered adequate by the ministry".[71] The Soviet embassy demanded to know exactly what the Austrians were complaining about, but nevertheless continued to signal their willingness to conclude the deal.[72]

Therefore, the two OSR hygienists, Heinrich Jettmar and Alfred Schinzel, together with a ministry delegate (Franz Friza) and Franz Pötsch, created a questionnaire addressed to the Poliomyelitis Research Institute. Although this questionnaire had to be prepared very quickly

66 ÖStA, BMfsV, Sektion V 1961, Sch. 1360, Zl. 122396, 130648: Beschaffung von Poliomyelitis-Lebendvakzine.
67 ÖStA, BMfsV, Sektion V 1961, Sch. 1360, Zl. 122396, 130013: Poliomyelitis-Lebendvakzine russischer Provenienz.
68 On the positive relationship between Austria and the Soviet Union in the early Khrushchev era, see Mueller, Peaceful Coexistence, see note 24, 103–126.
69 Cf. also the EU's criticism of Russian and Chinese influence on the procurement of vaccines during the COVID-19 pandemic mentioned at the beginning of this article, see footnote 3.
70 ÖStA, BMfsV, Sektion V 1961, Sch. 1360, Zl. 122396, 134846: Poliomyelitis-Lebendvakzine russischer Provenienz.
71 ÖStA, BMfsV, Sektion V 1961, Sch. 1360, Zl. 4493, 20006: Österreichische Warenhandelsgesellschaft. Herstellungs- und Prüfungszertifikate über Poliomyelitis-Lebendvakzine zur oralen Verabreichung.
72 Ibid.

at the beginning of January 1961, great care was taken to include as many questions as possible: "This is to avoid having to make an additional enquiry to the Russian Poliomyelitis Research Institute if further questions arise. Any further queries could potentially be interpreted as an annoyance."[73] They were aware of the delicate diplomatic situation and therefore careful not to antagonise the Russians and risk the successful completion of the deal.

About a month after the request, the Soviet reply arrived in Vienna.[74] In the meantime, however, the OSR had concentrated on the threat posed by the *vacuolating agent.* The experts feared that rumours about its possible harmfulness could counteract the success of vaccination.[75] Therefore, in March 1961, the decision was made not to authorize any of the currently available live vaccines and to continue with IPV.[76] However, in order not to render all previous diplomatic efforts worthless, the ministry informed the *Österreichische Warenhandelsgesellschaft* that they were waiting for further decisions on the matter, first and foremost from the WHO, but were happy to continue the negotiations as soon as all open questions regarding the live vaccine had been clarified.[77]

However, the rejection of the OSR did not terminate the negotiations on the part of the Soviets. Enquiries were received via the Austrian embassy in Moscow and the *Österreichische Warenhandelsgesellschaft* in Vienna.[78] The latter remained persistent and provided the ministry with regular updates. In addition to the news that meanwhile, more than 60 million people in the USSR had been successfully immunised, the BMfsV was informed in July 1961 that production processes in Moscow strictly adhered to the American regulations and that the Poliomyelitis Research Institute was even willing to provide a written confirmation. The trader also mentioned that another large order had recently been received: Japan had purchased ten million doses of the live vaccine from the USSR. More important, however, was the fact that the USA had finally authorised the Sabin vaccine. The Soviets prided themselves on their success story that had finally been acknowledged by the US. This was believed to boost the Soviet vaccine's international appeal. The *Österreichische Warenhandelsgesellschaft* informed the BMfsV that the price for the dragées had not increased since the beginning of the year, a vaccine dose (one dragée) was still available for 0.90 Dollar and orders could be delivered within 25 days.[79]

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73 ÖStA, BMfsV, Sektion V 1961, Sch. 1360, Zl. 4493, 4702: Muster des Herstellungszertifikates betr. Poliomyelitis-Lebendvakzine russischer Provenienz.

74 ÖStA, BMfsV, Sektion V 1961, Sch. 1360, Zl. 4493, 20006: Österreichische Warenhandelsgesellschaft. Herstellungs- und Prüfungszertifikate über Poliomyelitis-Lebendvakzine zur oralen Verabreichung.

75 Karl Schindl, Schutzimpfung gegen Kinderlähmung durch Tropfengabe, in: Soziale Sicherheit. Zeitschrift für die österreichische Sozialversicherung 11 (1961), 393–397,

76 On 7 March 1961, two major Austrian newspapers reported on the continuation of the Salk vaccination. This decision of the government was justified by the fact that the safety of the new live vaccine had not yet been completely proven. Unlike the OSR, however, the press emphasized the issue of secondary infections as crucial. Both newspapers agreed, however, that oral polio vaccination was the "method of the future" and that its use in Austria had only been postponed. "For the future, however, one gives the tablets great chances to become the ideal vaccine", the Kurier stated optimistically, referring to the Soviet OPV. Cf. Geimpft wird mit der Nadel, in: Kurier (7 March 1961), 3; Günter Templ, Polioimpfung weiterhin mit der Nadel, in: Die Presse (7 March 1961), 6.

77 ÖStA, BMfsV, Sektion V 1961, Sch. 1360, Zl. 4493, 35384: Österreichische Warenhandelsgesellschaft. Poliomyelitis-Lebendvakzine zur oralen Schutzimpfung.

78 ÖstA, BMfsV, Sektion V 1961, Sch. 1360, Zl. 4493, 46699: Poliomyelitis-Lebendvakzine russischer Provenienz.

79 ÖstA, BMfsV, Sektion V 1961, Sch. 1360, Zl. 4493, 98600: Österreichische Warenhandelsgesellschaft. Poliomyelitis-Lebendvakzine russischer Provenienz.

In terms of vaccine security and the growing concern about the *vacuolating agent,* empirical data were quoted: "The practice of vaccination – of 200 million people in the USSR (including the second vaccination) and 100 million people in other countries – has shown that *vacuolating agent* is not pathological."[80] In addition, Mikhail Chumakov stated that the simian virus had also been detected in Salk's inactivated vaccine, which had been used for years without any measurable side effects. At the end of September, the Österreichische *Warenhandelsgesellschaft* finally announced that a live vaccine, free of simian virus, would be available by November 1961.[81] However, by this time, Austria had already made a decision. It was not the Soviet product, long favoured by Heinrich Jettmar because of its mass application, that won the race but the oral polio vaccine produced by the British-American company Pfizer. On 15 June 1961, Pfizer submitted an offer to the BMfsV for a simian-virus-free live vaccine. Although the British-American vaccine was also based on Sabin strains and had been tested in field trials in the USA, Japan and Africa, it had not yet achieved a range similar to that of the Soviet oral vaccine. Nevertheless, the argument of finally having a vaccine free of contaminating simian virus was so tempting that the OSR's polio committee gave its approval for authorisation in Austria in July.[82] The fact that Pfizer presented "impeccable production protocols" and the vaccine had also been tested by the British Medical Research Council, "whose strict testing regulations are known throughout the world", was also a decisive factor.[83] Karl Schindl summed it up with the following statement: "Our country should not become an experimental field for foreign vaccines."[84]

Introduction of Oral Vaccination in Austria

The national authorisation did not, however, signify an immediate start of vaccination.[85] On the one hand, delivery deadlines had to be observed, and on the other hand, a vaccination campaign during the summer months was ruled out due to the risk of interference with enteroviruses that could potentially result in a weakening of the protective effect of vaccine-induced immunity. Moreover, vaccination logistics had to be organised first, and targeted advertising was required to convince the population of the advantages of the new oral vaccination. The first round of vaccination finally started simultaneously in all nine federal provinces on 13 November 1961. This made Austria the pioneer of OPV administration among the Western nations.[86] The FRG and Great Britain did not introduce oral vaccination until 1962,[87] Italy started free OPV vaccination in 1964 and made vaccination compulsory in 1966.[88] The development was different in

80 The figures given seem to have been increased for advertising purposes. ÖstA, BMfsV, Sektion V 1961, Sch. 1360, Zl. 4493, 110107: Österreichische Warenhandelsgesellschaft. Poliomyelitis-Vaccine russischer Provenienz.

81 ÖstA, BMfsV, Sektion V 1961, Sch. 1360, Zl. 4493, 110107: Österreichische Warenhandelsgesellschaft. Poliomyelitis-Vaccine russischer Provenienz.

82 ÖstA, BMfsV, Sektion V 1961, Sch. 1360, Zl. 9057, 73062: Orale Polio Vaccine „Pfizer".

83 Schindl, Schutzimpfung, see note 75, 395.

84 Ibid., 394.

85 In the US, Pfizer's OPV type I was licenced in August 1961, type II followed in October 1961 and type III in March 1962. Lindner / Blume, Vaccine Innovation, see note 14, 438.

86 Schindl, Schutzimpfung, see note 75, 393–397.

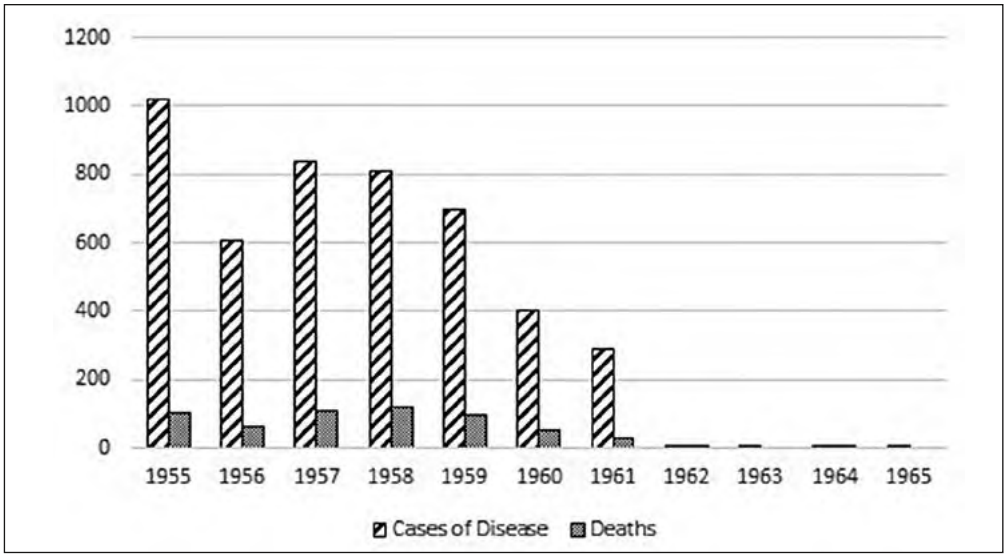
87 Lindner / Blume, Vaccine Innovation, see note 14, 439–443.

88 Bernardino Fantini, Polio in Italy, in: Dynamis 32/2 (2012), 329–359, 350–351.

the Netherlands, which stuck with IPV and envisaged oral vaccination only for rapid immunisation during severe epidemics.[89]

Austria saw a high turnout during the first vaccination round. In total, about 2.5 million Austrians received the oral vaccine when it was first introduced in 1961. The overall coverage rate of 72 percent among those under 21 years of age only slightly exceeded the target value; however, in some regions, rates of up to 90 percent were achieved. As expected, the turnout among adults was much lower, reaching only 18 percent. Still, the vaccination coverage rate of 35 percent for the total population of Austria was considered a success.[90] "We were all surprised by the unexpectedly high participation of the population", the head of the health department, Karl Schindl, summarised with satisfaction.[91] At the end of 1961, the BMfsV formulated their long-term goal by stating, "it is now important to continue along the path we have taken so that the initial success is crowned with a real defeat of this scourge of humanity, at least in our country."[92] Although the number of individuals appearing for follow-up vaccinations decreased during the subsequent rounds in 1962 and, in particular, the fourth booster dose administered in 1963 was received by only 58 percent of those under 21, the level of immunisation in Austrian society proved sufficient to prevent further epidemic outbreaks of poliomyelitis.

Figure 1: Number of reported polio cases and deaths in Austria, 1955–1965[93]



89 Lindner / Blume, Vaccine Innovation, see note 75, 439.

90 Vladimir Petrinsky, Organisation and Implementation of Polio Vaccination with Live Vaccine in Austria According to the Sabin Method, in: Bundesministerium für soziale Verwaltung, ed., Schluckimpfung gegen Kinderlähmung in Österreich. Versuch einer Bilanz (Vienna–Frankfurt am Main–Zurich 1968), 55–62.

91 Karl Schindl, Vom Stand der Schluckimpfung gegen Kinderlähmung in Österreich, in: Mitteilungen der österreichischen Sanitätsverwaltung 63/11 (1962), 357.

92 Tiroler Landesarchiv (= Tyrolean Provincial Archive, TLA), Amt der Tiroler Landesregierung 1961, Sanitätsdirektion Vc 495, Zl. 1493.

93 Bundesministerium für soziale Verwaltung, ed., Schluckimpfung gegen Kinderlähmung in Österreich. Versuch einer Bilanz (Vienna–Frankfurt am Main–Zurich 1968), 113.

The epidemiological effect was evident, and the cost-benefit calculation, in contrast to IPV, was clearly beneficial.

> "If one considers that, since the first oral vaccination, there has been no poliomyelitis epidemic in Austria and no vaccinated patient has had to die of polio, this is the perfect proof that the money of the federal government and the provinces was well invested",

the BmfsV officially stated in 1967.[94]

Isolated (or rather imported) polio cases were recorded until 1980, and the last fatal infection occurred in 1973. In 1980, Austria was officially declared polio-free.[95] Since the presence of wild polioviruses was no longer detected and the immediate danger of an epidemic had ceased, the OSR recommended a return to IPV in 1997. Using the inactivated vaccine prohibits the emergence of rare cases of vaccine-induced poliomyelitis. Oral polio vaccination was abandoned in 1999.[96] With the return to administration by injection, the federal law on public polio vaccination, which regulated the use of the oral vaccine, was suspended in 2002.[97] Since 2004, a combination childhood vaccine (six-in-one vaccine against polio, diphtheria, tetanus, pertussis, hepatitis B and haemophilus influenzae type B) is used.[98]

Conclusion

In the fight against the annual polio epidemics, the Austrian health authorities were confronted with a burning question from 1959 onwards. They had to decide how to position themselves in the game of the great powers: should they continue immunisation efforts with the inactivated vaccine or dare to adopt the oral live vaccine that had already been tested millions of times in the Soviet Union? Could they implement OPV into their national vaccination plan and thus act against the Western majority position?

Despite all the scepticism towards the Soviet conditions, the OSR, above all the epidemiologist and hygienist Heinrich Jettmar and the senior official of the BMfsV, Karl Schindl, were initially not inhibited by "geopolitical blinkers". Unlike the FRG representatives, they actively sought contact with the Soviet Union and were seriously interested in purchasing the oral vaccine, which was cheaper and easier to administer than IPV. The Soviet Union also showed interest in the deal, probably regarding it as a means to strengthen their influence in neutral Austria and to promote "peaceful coexistence" through vaccine diplomacy.

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94 Petrinsky, Organisation, see note 90, 62.

95 Reinhild Strauss et al., WHO Poliomyelitis Eradication Programme. Status Quo and Implementation in Austria, in: Wiener Klinische Wochenschrift 120/7–8 (2008), 210–216. Cf. also the Guide to Poliomyelitis Case Management in Austria, version 1.2, 2019, published by the Federal Ministry of Social Affairs, Health, Care and Consumer Protection, https://www.sozialministerium.at/Themen/Gesundheit/Impfen/Poliomyelitis,-Eradikation-und-Durchimpfungsraten.html (last access: 10.06.2021).

96 Strauss, WHO Eradication Programme, see note 95, 214.

97 Bundesgesetz, mit dem das Bundesgesetz über öffentliche Schutzimpfungen gegen übertragbare Kinderlähmung aufgehoben wird, BGBl. 93/2002, 779.

98 Strauss, WHO Eradication Programme, see note 95, 214.

The diplomatic channels were buzzing on both sides but in the end, the negotiations were not successful. The failure of the science diplomatic mission can be attributed to several reasons. The first setback the Austrians had to accept was the enormous price increase due to the newly agreed dollar-rouble exchange rate. They felt taken advantage of by the Soviets but their scientific concerns far outweighed the financial disagreements. The fact that the production and test reports from Moscow were transmitted only hesitantly while Western pharmaceutical companies provided the BMfsV and OSR with well-prepared data did little to assuage the doubts about the Soviet vaccine and the seriousness of the business relationship. It almost seems as if the scientific controversy over the simian virus (*vacuolating agent*) came at the right time. The general qualms about the potential danger of this newly detected simian virus gave the Austrian decision-making bodies the opportunity to remove pressure from the negotiations. At the same time, Western pharmaceutical companies took advantage of the general uncertainty to find a niche and occupied it quickly. Pfizer managed to launch its simian-virus-free vaccine before the Russians.

In Austria, the discussion about the *vacuolating agent* had revolved mainly around one topic: the acceptance of the vaccine by the population. After the Salk vaccine emerged as a "non-responder" – meaning that turnout rates were low because the responsible politicians could not agree on a uniform strategy, being petty and overly economical with national finances, and because "the necessary jabs, especially among small children, were by no means popular"[99] – the oral vaccine had to become an unchallenged success. Any criticism diminishing public acceptance of the oral vaccine had to be ruled out. However, the OSR preferred to present itself as dithering for the good of the population rather than acting unscrupulously. The memories of the Cutter incident in the USA were still too fresh, even among Austrians.

The fact that Austria, despite its cautious approach, succeeded in becoming the first country in the Western world to conduct a mass vaccination campaign with attenuated OPV can be explained by its timely organisation. Austria had prepared itself thoroughly and passed the federal law on public vaccination against poliomyelitis at the end of 1960. Likewise, negotiations with all major pharmaceutical companies – in the East and West – were started even earlier, at the end of 1959, securing Austria sufficient quantities of the vaccine. Of course, it should not be overlooked that Austria, with its moderate size, was easier to supply than larger nations. In any case, the mass vaccination campaign launched in November 1961 was celebrated as a success due to the high turnout. The Austrian example, with its rapid decrease in polio case numbers post vaccination, proved the effectiveness of OPV also on this side of the Iron Curtain.

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99 Heinrich Jettmar on the benefits of OPV during the 71st plenary meeting of the OSR on 25 June 1960. ÖStA, BMfsV, Sektion V, Sch. 1262, 1960, Zl. 20654: Oberster Sanitätsrat; Orale Schutzimpfung mit Lebendvakzine gegen Poliomyelitis.