CHAPTER 8

Doctor E.W. Lybeck, Vaccination Criticism, and the Bounds of Orthodox Medicine in Finland at the Turn of the Twentieth Century

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1 Introduction

The question of vaccine scepticism has recently stepped to the fore of Western social debate with the Covid-19 pandemic. However, fear, suspicion, and criticism of vaccination are nothing new, but have existed since Edward Jenner demonstrated in 1796 that inoculation with relatively mild cowpox afforded protection against deadly smallpox. He termed this preventive measure vaccination (in Latin *vacca = cow*).[1] Organised anti-vaccinationism only appeared when the smallpox vaccination was made mandatory,[2] which happened in most European countries during the nineteenth century.[3]

The anti-vaccination movements of the late nineteenth and early twentieth centuries were mostly formed by laymen, whereas the medical profession took on the task of defending vaccinations. Nevertheless, throughout Europe some licensed physicians also converted to the anti-vaccination position.[4] In spite of the increased scholarly interest in the history of vaccine

1 Nadja Durbach, *Bodily Matters. The Anti-vaccination Movement in England, 1853–1907* (Durham and London: Duke University Press 2005): 4, 20; Edward A. Belongia and Allison L. Naleway, "Smallpox Vaccine: The Good, the Bad, and the Ugly", *Clinical Medicine & Research* 1(2003), no. 2: 87–92. The Latin term used for cowpox was *variolae vaccinae* (smallpox of the cow). Later it was realised that the agent used in the smallpox vaccination was no longer the same as the cowpox virus; hence, the virus is today called 'vaccinia'. Bertram L. Jacobs a.o., "Vaccinia Virus Vaccines: Past, Present and Future", *Antiviral Research* 84 (2009), no. 1: 1–13.

2 T. Hannikainen, "Rokotuksen vastustusliikkeestä", *Duodecim* 30 (1914), no. 2: 64–94; Durbach, *Bodily Matters* (2005): 13, 37 and passim.

3 For example, Sweden made smallpox vaccination mandatory in 1816, followed by Great Britain in 1853, and the recently formed Germany in 1874, but France only in 1902. Heikki S. Vuorinen, *Taudit, parantajat ja parannettavat. Lääketieteellinen historia* (Tampere: Vastapaino 2010): 219, 245.

4 Durbach, *Bodily Matters* (2005): 157; Avi Sharma, *We Lived for the Body. Natural Medicine and Public Health in Imperial Germany* (DeKalb, IL: NIU Press 2014): 122–123.

controversies,[5] doubtful or critical attitudes towards vaccination among the medical profession have remained a less studied subject. This chapter addresses this research gap by focussing on the subject in early twentieth-century Finland.

In Finland, it was not until the 1910s that the anti-vaccination movement arose, originally amongst the supporters of natural healing and vegetarianism.[6] Finnish physicians presented a united front against the anti-vaccinationists, the only exception being one Edward Wilhelm Lybeck (1864–1919), who alongside his medical practice was also interested in natural healing and vegetarianism. The rest of the Finnish medical profession disapproved of him, and the acting director of the Finnish National Board of Health, professor Taavetti Laitinen, even reprimanded him in writing in 1911 for using his medical authority in support of anti-vaccinationism.[7]

The attitude of the Finnish medical practitioners towards Lybeck and anti-vaccinationism reflects the larger phenomenon that has been described as the medical monopolisation process. The term refers to a tendency to establish one true medical paradigm by constantly defining the boundaries of correct and acceptable healing, and it relates to the professionalisation of physicians.[8] At first, it was formal academic training that defined these boundaries. In Finland, legislation has guaranteed physicians with a university education the exclusive right to practise medicine since 1688.[9] Alongside formal training, the role of scientific knowledge as the definer of medical boundaries increased in importance after the mid-nineteenth-century paradigm shift from Hippocratic doctrines to scientific thinking. Healing systems, theories, and practices critical of the new scientific paradigm have since been fought and excluded from orthodox medicine as quackery; meanwhile, there has been an endeavour to

5 See, for example, Durbach, *Bodily Matters* (2005); Jacob Heller, *The Vaccine Narrative* (Nashville: Vanderbilt University Press 2008); Sharma, *We Lived for the Body* (2014); Suvi Rytty, "Rokotusvastaisuus historiallisena ilmiönä 1900-luvun alun Suomessa", *Sosiaalilääketieteellinen aikakauslehti* 57 (2020), no. 3: 215–227.

6 Rytty, "Rokotusvastaisuus historiallisena ilmiönä" (2020): 215–227.

7 "Suomen Lääkäriseuran 23:s yleinen kokous. 'Kuhnimisen' ja yleisön harhaanviemisen vastustaminen lääketieteellisissä kysymyksissä", *Uusi Suometar* (1911), no. 220: 5.

8 Eva Palmblad, *Sanningens gränser. Kvacksalveriet, läkarna och samhället. Sverige 1890–1990* (Stockholm: Carlsson 1997): 10–20. About professionalisation of physicians in Finland, see Saara-Maija Kontturi, *Lääkärikunnan synty. Suomen lääkärit n. 1750–1850* (Jyväskylä: University of Jyväskylä 2021).

9 Motzi Eklöf, "Doctor or Quack: Legal and Lexical Definitions in Twentieth-Century Sweden", in: Robert Jütte, Motzi Eklöf, and Marie C. Nelson (eds.), *Historical Aspects of Unconventional Medicine: Approaches, Concepts, Case Studies* (Sheffield: European Association for the History of Medicine and Health Publications 2001): 105–106.

keep the medical profession clean from doctrines, cures, or healers considered unorthodox.[10]

Evolving medical knowledge has contributed to medical novelties, which are typically surrounded by uncertainty and sometimes by controversy. This is certainly true for the smallpox vaccination.[11] The anti-vaccination movements made good use of these uncertainties by appealing for example to the statements presented by internationally known vaccine-critical medical professionals.[12] An examination of vaccine criticism therefore offers a good way of making medical uncertainties visible.[13] First, this chapter studies what made Lybeck a vaccination critic despite his medical education, and how he made use of medical uncertainties in his vaccine criticism. Second, this chapter examines how the Finnish medical profession discussed the vaccination question and analyses what kind of critique, doubt, or uncertainty concerning vaccination was allowed within the confines of the medical profession, and at what point it became heresy.

The research period covers the medical/natural healing career of Lybeck from 1895 to his death in 1919. The source material consists of: 1) the medical journals *Terveydenhoitolehti*[14] and *Duodecim*[15] that were published by the Finnish Medical Society *Duodecim* and contained some medical writings from Lybeck, as well as discussions about vaccination and vaccine criticism; 2) digitised newspaper articles[16] concerning the vaccination question, written by or about Lybeck; and 3) the periodicals *Terveys* and *Luonnonparantaja* (after 1915 *Parantaja*), which were published by the supporters of natural healing and vegetarianism and presented an approving forum for Lybeck's vaccine-critical writings. The focus is on smallpox vaccination, which at the time was the only

10 Palmblad, *Sanningens gränser* (1997): 10–20.

11 Michael Worboys, *Spreading Germs. Disease Theories and Medical Practice in Britain, 1865–1900* (Cambridge: University Press 2000): 119, 123, 243–246.

12 "160 lääkärin ja lääketieteen professorin lausuntoja rokotuksesta", *Terveys* 3 (1913), no. 7–8: 54–56; "215 lääkäriä Italiassa vastustavat julkisesti rokotusta", *Terveys* 9 (1919), no. 6: 7–9; Worboys, *Spreading Germs* (2000): 245–246; Durbach, *Bodily Matters* (2005): 157.

13 This is also a common argument for the usefulness of controversial scientific studies, expressed for instance in Steven Shapin and Simon Schaffer, *Leviathan and the Air-Pump: Hobbes, Boyle, and the Experimental Life* (Princeton NJ: University Press 1985).

14 The aim of *Terveydenhoitolehti* was to raise awareness of hygiene and healthcare among the general public.

15 *Duodecim* was a professional journal for Finnish-speaking physicians (as distinct from Swedish-speaking ones).

16 The Newspaper Collection of the National Library of Finland contains newspapers published from the late 1700s to today. The newspapers are available online in the digi.kansalliskirjasto.fi service.

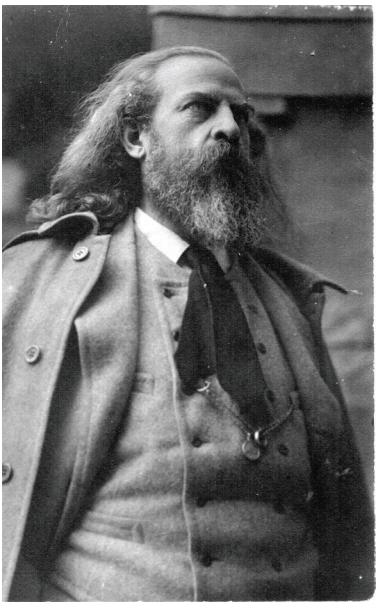

FIGURE 8.1
Edward Wilhelm Lybeck (1864–1919).
SOURCE: PICTURE ARCHIVE OF THE KIRVU FOUNDATION (KIRVU-SÄÄTIÖ). PHOTOGRAPHER UNKNOWN

vaccination given to the whole population, as well as the only compulsory one in Finland.[17] It was therefore the primary target of vaccine criticism.

2 Doctor Lybeck on the 'Wrong Track'

Edward Wilhelm Lybeck (see Figure 8.1) was a member of two medical societies, the Medical Society of Finland (*Finska Läkaresällskapet /Suomen Lääkäriseura*) and the Finnish Medical Society Duodecim (*Suomalainen Lääkäriseura Duodecim*).[18] After Lybeck's death in 1919 his colleagues commemorated him in a meeting of the Medical Society Duodecim with these telling words:

> L.[ybeck] was undoubtedly talented and quite a character in many respects, but his enthusiasm eventually led him onto the wrong track of the natural healer, thus cutting the ground from under his feet. The

17 Helene Laurent, *Asiantuntijuus, väestöpolitiikka, sota. Lastenneuvoloiden kehittyminen osaksi kunnallista perusterveydenhuoltoa 1904–1955* (Helsinki: Unigrafia 2017): 177, 270–271.

18 "Årsberettälse för 1895", *Finska Läkaresällskapets Handlingar* 38 (1896), no. 2: 89; "Vuosikertomus Duodecim-seuran toimintakaudelta 18.11.1918–18.11.1919", *Duodecim* 36 (1920), no. 1: 75.

> society remembers with sorrow this member whose life was in some respects tragic but could have been fruitful had it been correctly steered.[19]

Lybeck's medical career began promisingly in Helsinki at his own private hospital, Kammio-Tallbacka, intended for patients suffering from nervous disorders and mental illnesses.[20] Judging by the case studies he published in the professional journal *Duodecim,* he was keen to advance medicine as a science.[21] However, after 1904 things started to change. Lybeck left the capital and opened a kind of experimental farming colony for tranquil mental patients in the backwoods of Ruovesi. When this experiment failed, Lybeck turned the establishment into a natural healing sanatorium around 1910 and advertised it as suitable for patients suffering from rheumatism, neurasthenia, heart conditions, digestive disorders, or kidney problems. Mental patients were no longer accepted.[22] From 1910, Lybeck also began to criticise vaccination in public.[23]

Natural healing was a complex of preventive and healing practices that had developed from hydropathy in mid-nineteenth-century Germany. It centred around therapies based on water, fresh air, sunlight, and a vegetarian diet, and was pioneered and practised primarily by laypeople. Its alternative conception of disease and its criticism of regular medicine were a fertile breeding ground for anti-vaccinationists.[24] It was the guidebook *New Science of Healing* by the German natural healer Louis Kuhne, translated to Finnish in 1906, that kick-started a veritable natural healing craze in Finland. Although Kuhne's healing did attract some following among the working class and peasantry, most

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19 "Vuosikertomus Duodecim-seuran toimintakaudelta 18.11.1918–18.11.1919" (1920): 75.

20 Kalle Achté, Jorma Rantanen and Tapani Tamminen, *Luontaishoidon isä, tohtori E. W. Lybeck, Elämänmäen parantaja* (Jyväskylä: Recallmed Oy 1994): 62–90, 127–130.

21 Edward Wilhelm Lybeck, "Köyhäin mielenvikaisten hoidosta Skotlannissa", *Duodecim* 12 (1896), no. 3: 61–73; Edward Wilhelm Lybeck, "Hysterinen hemianopsiatapaus", *Duodecim* 12 (1896), no. 7: 161–169; Edward Wilhelm Lybeck, "Nitroglycerinin avulla hoidettu arteriosclerositapaus […] ", *Duodecim* 13 (1897), no. 2: 33–38; Edward Wilhelm Lybeck, "Kuppataudin tuottama homonymi – hemianopsia-tapaus […] ", *Duodecim* 13 (1897), no. 4: 127–136; Edward Wilhelm Lybeck, "Valekuolemasta ja muutamista kuoleman tuntomerkeistä", *Duodecim* 14 (1898), no. 2: 49–51.

22 "Luonnonparantola ja Kesäkoti", *Uusi Suometar* (1910), no. 64: 2; "Luonnonparantola ja Kesäkoti", *Helsingin Sanomat* (1910), no. 65: 1; Achté, Rantanen and Tamminen, *Luontaishoidon isä* (1994): 128–131.

23 "Tohtori Lybeck Laihialla", *Vaasa* (1910), no. 56: 2–3; "Tohtori Lybeckin esitelmä luonnonparannuksesta", *Karjala* (1910), no. 135: 3; "Päivän uutisia", *Kotimaa* (1911), no. 117: 4.

24 Avi Sharma, "Medicine from the Margins? *Naturheilkunde* from Medical Heterodoxy to the University of Berlin, 1889–1921", *Social History of Medicine* 24 (2011), no. 2: 334–337; Sharma, *We Lived for the Body* (2014): 20–39, 114–140.

Finnish followers of Kuhne, known by the pejorative nickname "*kuhnijat*",[25] came from the middle class.[26]

At the beginning of the second decade of the twentieth century, the Finnish advocates of natural healing and vegetarianism began to organise themselves by publishing magazines (*Terveys* and *Luonnonparantaja/Parantaja*) and setting up associations and natural healing sanatoriums. Their most notable sanatorium was established in Kirvu in the Karelian Isthmus in 1911, and their most prominent organisation, the Vegetarian Association of Finland (*Suomen Vegetaarinen Yhdistys*), was founded in 1913. Despite its name, the association also sought to promote natural healing, anti-vaccinationism and temperance, which were seen as integral parts of vegetarianism – when it was understood as synonymous with the wider concept of a natural lifestyle. The leading figures of this Finnish natural lifestyle movement were the editor of *Terveys* Anna Kurimo, the editor of *Luonnonparantaja/Parantaja* Sampsa Luonnonmaa, natural healers Maalin Bergström and Oskari Johnsson, and Dr. E.W. Lybeck.[27]

Lybeck primarily gained his reputation as the leading figure of Finnish natural healing and lifestyle by touring the country and giving public lectures on his favourite subjects: temperance; sexual probity; health reform through clothing; vegetarianism; the use of natural healing methods; and anti-vaccinationism.[28] Lybeck proved a brilliant, captivating, and therefore also much sought-after speaker who always drew large audiences, in part also due to his eccentric appearance, which made him a living example of a natural lifestyle: he was a tall and handsome man with a beard and long hair, wore neither a hat nor shoes, and preferred so-called 'reform clothes', made from coarse cloth and imitating ancient peasant dress.[29] Lybeck's appointment in 1911 as the chief physician in the new Kirvu natural healing sanatorium appeared to confirm

25 In Finnish, 'kuhnija' also refers to a person who is lazy and sluggish.

26 Suvi Rytty, *Ruumiista reformiin. Suomalaiset elämänuudistajat, luonnonmukainen ruumiinmuokkaus ja modernisaation ongelma, 1910–1932* (Turku: University of Turku 2021): 63–70.

27 Rytty, *Ruumiista reformiin* (2021): 13, 71–97.

28 "Raittiusjuhlat Pohjolassa", *Kansalainen* (1906), no. 75: 3; "Tohtori Lybeck", *Salmetar* (1908), no. 137: 3; "Luentokursseilla kr. työv. yhdist. huoneistossa", *Työkansa* (1909), no. 28: 2; "T:ri E. Lybeckin esitelmää", *Keski-Suomi* (1909), no. 131: 2; "Tohtori Lybeckin esitelmä luonnonparannuksesta", *Karjala* (1910), no. 135: 3; Jouko (pseudonym), "Tohtori Lybeck", *Jokamiehen Viikkolehti* (1910), no. 46: 369; Achté, Rantanen and Tamminen, *Luontaishoidon isä* (1994): 94–95.

29 "Suur-Savon lomakurssit, kolmas luentopäivä", *Suur-Savo* (1907), no. 3: 2; "Luentokursseista", *Etelä-Suomi* (1907), no. 34: 2; "Tohtori Lybeck", *Otava* (1908), no. 138: 3; Wiki (pseudonym), "Lomakurssipakinaa", *Hämetär* (1909), no. 2: 4; Jouko (pseudonym), "Tohtori Lybeck" (1910): 368–369.

his defection from the medical profession to the natural healing movement,[30] for, according to the local district physician, the Kirvu sanatorium was a veritable "den of quacks".[31]

The popularity of natural healing worried many Finnish physicians because it was primarily practised by laymen with no medical training, and it was based on a conception of disease that blamed faulty lifestyles rather than germs. All diseases were curable with natural healing methods. The supporters of natural healing and lifestyle also claimed that medicines and smallpox vaccination were dangerous to health.[32] In public discussion, Lybeck's anti-vaccination lectures were especially blamed for the decline of the proportion of vaccinated children that had occurred in Finland at the beginning of the twentieth century.[33] How the medically trained Lybeck could join forces with Kuhne's followers and believe in Kuhne's unscientific doctrines was also a source of wonder, both publicly and among the Finnish medical profession.[34]

Part of the answer lies in the natural healing methods themselves, for they did not significantly differ from those practiced in regular medicine under the name of physical methods. The main difference was that the latter were used in accordance with the medical conception of disease and by a licensed physician.[35] The roots of physical methods lay partly in the ancient doctrine of dietetics, according to which it was possible to regulate one's state of health

30 "Kirvun luonnonparantola", in: *Suuntaviivoja. Aatteellinen erikoisjulkaisu Terveyden 20-vuotisen ilmestymisen johdosta* (Oulu 1930): 6; Hilma Räsänen, *Maalin Bergström. Ihminen ja parantaja* (Porvoo: WSOY 1941): 151–155, 179, 241, 269–273, 281.

31 Helsinki, National Archives of Finland, Archives of the I Bureau of the National Board of Health, Eba 66: *Antrean piirilääkärin vuosikertomus* (1911); Suvi Rytty, "Puoskarointia vai puhdasta auttamisen halua? Luonnonparantaja Maalin Bergström ja laittoman lääkärintoimen harjoitus 1900-luvun alun Suomessa", in: Markku Hokkanen and Kalle Kananoja (eds.), *Kiistellyt tiet terveyteen. Parantamisen monimuotoisuus globaalihistoriassa* (Helsinki: SKS 2017): 147–148.

32 Rytty, "Puoskarointia vai puhdasta auttamisen halua?" (2017): 141–145.

33 "Isonrokon kiertokulku Karjalassa. Rokko levenee nopeasti", *Helsingin Sanomat* (1911), no. 143: 7; "Tauti vieraana Karjalassa", *Turun Sanomat* (1911), no. 1948: 1; Joppi (pseudonym), "Ammattilääkäri – 'luonnonlääkärinä'", *Työ* (1911), no. 147: 2; Kari Pitkänen, "Myrkkyä, sanoi tohtori Lybeck. Rokotustaistelu Suomessa 1900-luvun alkuvuosikymmenillä", in: Matti Peltonen (ed.), *Arki ja murros. Tutkielmia keisariajan lopun Suomesta* (Helsinki: SHS 1990): 123, 128–132.

34 Helsinki, National Archives of Finland, Archives of the I Bureau of the National Board of Health, Eba 65: *Pyhän Antrean piirilääkärin vuosikertomus* (1910); Joppi (pseudonym), "Ammattilääkäri – 'luonnonlääkärinä'" (1911): 2; "Kuhne-humpuuki", *Työmies* (1911), no. 179: 2; "Suomen Lääkäriseuran 23:s yleinen kokous" (1911): 5.

35 Ernst Therman, "Luonnonparannus", *Tietosanakirja V* (Helsinki: Otava 1913): 1243–1245.

with correct lifestyles.[36] In part, the physical methods were medical variants of water cure and other natural healing methods, whose popularity from the early nineteenth century had also encouraged Western physicians to become familiar with, and to practise them.[37] At the beginning of the twentieth century, especially in Germany, many young physicians developed an interest in natural healing methods because, despite all the progress in medical knowledge, medical therapies had developed very little, leaving physicians still relatively helpless in the face of most diseases. In Germany, this medical interest in the healing power of nature led to the creation of a chair for Physical and Dietary Therapies at the University of Berlin in 1920.[38]

According to Lybeck himself, he became acquainted with natural healing methods early on in his medical career, when he took on the medical practice at the Vaanila hydropathic institution during the summer months.[39] Later, he also used hydrotherapy in his private hospital, Kammio-Tallbacka in Helsinki.[40] So it seems that, at least at first, Lybeck did not perceive his interest in natural healing as something outside the bounds of regular medicine. Even after he was profiled as the leading figure of the Finnish natural healing and anti-vaccination movement, he did not entirely abandon medicine or its teachings. For example, he did not accept Louis Kuhne's outdated and naive theories about disease at face value. He believed that because of their medical knowledge physicians ought to direct the natural healing enthusiasm of the common people, weed out all the nonsense, and make use of the "grains of gold" this healing system contained.[41]

However, one aspect of the natural healing ideology appealed to Lybeck above others: the idea of the interconnection of body and soul, as well as of health and morals. Lybeck was a deeply religious man who was drawn to Finnish Pietist revivalism, but he was also interested in theosophy, the Tolstoyan

36 Harold Cook, "Physical Methods", in: William F. Bynum and Roy Porter (eds.), *Companion Encyclopedia of the History of Medicine*, *Vol. 1 & 2* (London / New York: Routledge 2001): 940–945.

37 Uwe Heyll, *Wasser, Fasten, Luft und Licht. Die Geschichte der Naturheilkunde in Deutschland* (Frankfurt / New York: Campus Verlag 2006): 13–28, 33–34, 59–87.

38 Sharma, "Medicine from the Margins?" (2011): 334–337.

39 Edward Wilhelm Lybeck, "Istumakylvyt, niiden käyttäminen ja vaikutus", *Duodecim* 27 (1911), no. 5–6: 184–185. In early twentieth-century Finland all sanatoriums, spas, or hydrotherapeutic institutions had to be led by a medically trained physician to have a licence to operate. Niilo Pesonen, *Piirilääkärinä Suomessa* (Porvoo/Helsinki/Juva: WSOY 1990): 110–111.

40 "Tallbacka nya sjukpaviljong för nervsjuka", *Hufvudstadsbladet* (1902), no. 329: 4–5.

41 Edward Wilhelm Lybeck, "Vielä sananen 'Kuhnimisesta'", *Terveydenhoitolehti* 23 (1911), no. 1: 13; Lybeck, "Istumakylvyt, niiden käyttäminen ja vaikutus" (1911): 184–187, 197.

movement, and the occult. Like many of the supporters of natural lifestyle, he was a "truth-seeker" (*totuuden etsijä*),[42] which was a term used by his contemporaries. It referred to the spiritual search related to the experience of the spiritual vacuum that had been created by secularisation and modernisation. Truth-seekers sought purer religiosity, more authentic forms of Christianity, and ways to bridge the gap between science and religion.[43]

Lybeck was convinced he had found the truth in natural healing and lifestyle, as he believed they concurred with God's will and therefore rewarded people with health. Scientific progress, on the contrary, distanced Western medicine from the age-old alliance of health and morality by reducing medicine to a laboratory science and claiming that diseases were caused by bacteria that picked out their victims randomly, not caring whether people lived virtuous or dissolute lives.[44] In many respects, Lybeck sought to combine natural healing with regular medicine by finding justification for natural healing in scientific research. This was especially noticeable in his vaccine criticism, which he strove to validate by referring not just to the scientific knowledge of the smallpox vaccination, but also to the lack of it.[45]

3 Medical Uncertainty about Smallpox Vaccination

Today, vaccines are considered to represent the triumph of germ theory. However, Edward Jenner introduced his smallpox vaccination in the 1790s, long before any knowledge of microbes or any theoretical understanding of immunity. The smallpox vaccine was based entirely on the empirical observation that cowpox afforded protection against smallpox. The method of vaccination was borrowed from the earlier practice of variolation (also called inoculation), in which lymph material from the smallpox pustules was introduced into the body for instance by scratching it into the skin of the upper arm to induce a

42 Edward Wilhelm Lybeck, "Uskontunnustukseni", *Terveys* 1 (1911), no. 1: 1–5; Rytty, *Ruumiista reformiin* (2021): 170.

43 Nina Kokkinen, "Artists as Truth-Seekers: Focusing on Agency and Seekership in the Study of Art and Occulture", *Approaching Religion* 11 (2021), no. 1: 4–27; Rytty, *Ruumiista reformiin* (2021): 171.

44 Edward Wilhelm Lybeck, "Uskontunnustukseni" (1911): 1–5; Edward Wilhelm Lybeck, "Muut parantajat ja lääkärit", *Terveys* 2 (1912), no. 1: 2–3; Edward Wilhelm Lybeck, "Muut parantajat ja lääkärit, jatkoa", *Terveys* 2 (1912), no. 2: 9–11.

45 Lybeck, "Muut parantajat ja lääkärit" (1912): 2–3; Lybeck, "Muut parantajat ja lääkärit, jatkoa" (1912): 9–11; Edward Wilhelm Lybeck, "Rokotus-pakko. Lainlaadinta tällä alalla muutettava", *Uusi Suometar* (1914), no. 97: 7.

mild case of smallpox. Jenner just modified this practice by substituting cowpox for smallpox.[46]

The germ theory itself did not become established overnight or without problems. Indeed, between 1865 and 1900 there were many germ theories about disease, and early theories especially suffered from great uncertainty about what disease germs were (chemical poisons, ferments, degraded cells, fungi, 'bacteria', or parasites), and whether they were a cause or consequence of disease. After 1880 there was a growing consensus in medicine that many diseases were caused by the introduction of certain microorganisms into the body, and that most disease germs were 'bacteria'. However, there were still unresolved questions such as the disease-causing mechanisms of bacteria, and why germs did not invariably produce disease.[47]

This medical uncertainty also concerned the smallpox vaccination. Indeed, according to Michael Worboys, the developing knowledge about bacteria brought more questions than answers. Although Louis Pasteur's research in the latter part of the nineteenth century established the term vaccination for all forms of protective inoculations with altered germs and launched the development of new vaccines, the pathogens of both smallpox and cowpox remained unknown. Microscopic research on cowpox lymph and the content of smallpox pustules revealed many microorganisms, none of which could be identified as the specific germ of vaccinia or variola.[48] Indeed, it was only in the late 1930s that the smallpox virus (a sub-microscopic infectious agent much smaller than a bacterium) could be seen and identified with the new electron microscope.[49] In Finnish medical periodicals also, some physicians admitted as late as in 1917 that the pathogens of "acute eczemas" such as scarlet fever, measles, and smallpox remained unknown, possibly because they were too small to be observed with a microscope at the time.[50]

The gaps in medical knowledge also extended to immunity, which was reflected in the understanding of the smallpox vaccination's modes of action. Theories of immunity started to take shape in the 1880s, and there were many of them. One of the most prominent was Élie Metchnikoff's phagocytic theory, according to which white blood cells sought out and ingested invading microorganisms. Nevertheless, Pasteur's success in 1886 with his rabies vaccine,

46 Durbach, *Bodily Matters* (2005): 19–20, 158; Sharma, *We Lived for the Body* (2014): 117–118.

47 Worboys, *Spreading Germs* (2000): 1–6.

48 Worboys, *Spreading Germs* (2000): 119, 123, 243–246.

49 Durbach, *Bodily Matters* (2005): 162.

50 Rob. Elmgren, "Desinficioimisesta maaseudulla", *Duodecim* 22 (1906), no. 8–9: 188; Yrjö Levander, "Piirteitä kulkutautien luonteesta, historiasta ja vastustamisesta", *Terveydenhoitolehti* 29 (1917), no. 7–9: 120.

which seemed able to stop the infection from manifesting itself, lent support to the poison and antidote model. The assumption was that due to a chemical process, the rabies vaccine either neutralised the toxins of the pathogen of rabies or inhibited the pathogen, making it unable to produce toxins. The theory was explored in laboratories around Europe, which in 1894 led to the development of the diphtheria antitoxin.[51]

Today it is known that the weakened or inactive parts of a particular organism (antigen) in vaccines trigger an immune response within the body,[52] whereas serum therapy takes disease-fighting chemicals (antibodies) from the blood of recovered patients and transfers them to the sick to boost the body's natural antitoxic reactions.[53] Amidst the various theories of immunity, medical knowledge about the mechanism of smallpox vaccination remained somewhat vague at the beginning of the twentieth century, among Finnish medical practitioners also. For example, Doctor Fredrik Joel Pätiälä assumed that vaccines might produce immunity, as in serum therapy, and Doctor Konrad ReijoWaara referred to the smallpox vaccine as an artificial antitoxin against the "poison of smallpox".[54] 'Poison' in medical language was derived from the Latin word 'virus', which before its current meaning referred to a pathogen that was assumed to be a chemical agent in the blood spreading its effects on all tissues.[55]

By modern standards it may seem odd that the smallpox vaccine was widely used and even made mandatory, even though nobody knew exactly what it contained, or how it worked in the body. Even after the new bacteriological techniques introduced in the 1880s, the nature of the smallpox germ or the mechanism of smallpox vaccination stirred surprisingly little interest.[56] To most physicians, Finnish or otherwise, this uncertainty about smallpox vaccination posed no serious problem as smallpox was easily diagnosed and known to be contagious but also preventable – with vaccination.[57] Furthermore, the

51 Worboys, *Spreading Germs* (2000): 219–220.

52 World Health Organization, "How do Vaccines Work?" (8.12.2020), https://www.who.int/news-room/feature-stories/detail/how-do-vaccines-work (accessed on 23.8.2022).

53 Bert Hansen, "The Story of Serum Therapy", *Distillations Magazine* (28.4.2020), https://www.sciencehistory.org/distillations/the-story-of-serum-therapy (accessed on 12.1.2023).

54 Fredrik Joel Pätiälä, "Immuniteetista ja veriseerumiterapiasta", *Duodecim* 10 (1894), no. 2: 33–41; Konrad ReijoWaara, "Isosta rokosta ja rokotuksesta", *Terveydenhoitolehti* 24 (1912), no. 7–8: 97–98.

55 Worboys, *Spreading Germs* (2000): 118.

56 Worboys, *Spreading Germs* (2000): 240–245; Durbach, *Bodily Matters* (2005): 159–160.

57 ReijoWaara, "Isosta rokosta ja rokotuksesta" (1912): 97–99; Levander, "Piirteitä kulkutautien luonteesta" (1917): 120; Worboys, *Spreading Germs* (2000): 244.

criteria for scientific certainty were different from what they are today. However, inadequate medical knowledge concerning smallpox vaccination left room for doubt and criticism – not only among medically untrained laymen, but also among licensed physicians. These doubts and criticisms mainly concerned questions of the safety, efficacy, necessity, and compulsion of the smallpox vaccination.

4 The Question of Safety

Nowadays, inoculation with the vaccinia virus is known to be highly effective in preventing smallpox infection, but it is also associated with several side effects, ranging from mild to serious and even potentially life-threatening reactions.[58] At the beginning of the twentieth century, based on general observations and experiences, there was an awareness that the smallpox vaccination sometimes had adverse effects. Finnish physicians who discussed vaccination in the country's medical journals at the time, did acknowledge that the smallpox vaccine could sometimes cause adverse effects such as inflammation of the skin or a high fever. Older district physicians especially knew from their own experience that vaccinated children sometimes started in an "unclear way to suffer and ail".[59] It was therefore advisable not to vaccinate children who were already weak or sickly, or who were recovering from fever. Eczema and other skin conditions were especially known to be worsened by vaccination.[60]

Adverse effects were the main theme of anti-vaccination campaigns.[61] The Finnish anti-vaccinationists claimed that vaccination made children weak and sickly and caused persistent rashes, inflammation of the skin, and sometimes even death. These claims were mainly based on the experiences of the parents of the vaccinated children, but also on the statements of foreign physicians who had turned into opponents of compulsory smallpox vaccination due to

58 Belongia and Naleway, "Smallpox Vaccine" (2003): 87–92; Centers for Disease Control and Prevention (CDC), "Side Effects of Smallpox Vaccination" (12.7.2017), https://www.cdc.gov/smallpox/vaccine-basics/vaccination-effects.html (accessed on 25.8.2022).

59 Konrad ReijoWaara, "Onko meillä syytä jatkaa kaikkien lasten pakollinen rokottaminen tähänastiseen tapaan", *Terveydenhoitolehti* 20 (1908), no. 9: 136. See also Konr. Relander, "Rokottamisesta", *Duodecim* 1 (1885), no. 5: 49–52.

60 ReijoWaara, "Isosta rokosta ja rokotuksesta" (1912): 103; Hannikainen, "Rokotuksen vastustusliikkeestä" (1914): 69.

61 Durbach, *Bodily Matters* (2005): 41, 47–68 and passim.

FIGURE 8.2 Kuhne bathing in the Kirvu natural healing sanatorium.
SOURCE: PICTURE ARCHIVE OF THE KIRVU FOUNDATION (KIRVU-SÄÄTIÖ).
PHOTOGRAPHER UNKNOWN

their own experiences of its use.[62] Although both opponents and supporters of vaccination may have shared the same observations concerning these adverse effects, the explanations for why and how these came about varied according to their differing conceptions of disease and worldviews.

The Finnish anti-vaccinationists claimed – according to the natural healing concept of disease, which was influenced by the old Hippocratic theories – that all illness was caused by impurities, 'foreign matter', which disturbed the normal balance and function of the body and its organs. The main carriers of these impurities into the body were bad air, meat, alcohol, tobacco, and coffee, as well as medical drugs, serums, and vaccines (see Figure 8.2).[63] Smallpox vaccination was believed to contaminate the blood, which explained not only the

62 M – i (pseudonym), "Mistä syystä kansa rokotusta vastustaa", *Luonnonparantaja* 1 (1912), no. 2: 27–29; "Rokotuksen vaarallisuus", *Luonnonparantaja* 1 (1912), no. 6: 90–91; "160 lääkärin ja lääketieteen professorin lausuntoja rokotuksesta" (1913): 54–56; "215 lääkäriä Italiassa vastustavat julkisesti rokotusta" (1919): 7–9.

63 Louis Kuhne, *Uusi lääketiede eli oppi tautien yhtenäisyydestä ja niiden siihen perustuvasta parantamisesta ilman lääkkeitä ja leikkauksia* (Hämeenlinna: Arvi A. Karisto 1910): 20–36; Rytty, *Ruumiista reformiin* (2021): 113–122.

adverse effects right after the vaccination, but also diseases that appeared even years later, such as diphtheria, syphilis, leprosy, cancer, or tuberculosis, for the "vaccine poison" could remain hidden in the body for many years without any sign of illness. Indeed, in the eyes of the Finnish anti-vaccinationists, the compulsory smallpox vaccination explained why pulmonary tuberculosis formed a major public health problem in early twentieth-century Finland – as well as why the population of industrial countries were allegedly plagued by physical, mental, and moral decay, known at the time as degeneration.[64]

Finnish physicians usually denounced most anti-vaccination arguments as unscientific, incoherent, childish, or lacking proof. Because medical practitioners relied on a scientific conception of disease and worldview, they could not accept the anti-vaccinationists' claims that vaccination was also the root cause of those diseases that appeared much later in life, such as tuberculosis or cancer. They emphasised that many ailments and diseases that appeared after vaccination were probably just coincidences. This applied to common children's diseases like measles, scarlet fever, and diphtheria, for example.[65] Previous research has observed, that although medical practitioners admitted that some adverse effects were related to the smallpox vaccination, they tended to downplay them. The lack of scientific facts meant it was difficult to deduce which ailments were really the consequence of vaccination and what the crucial factor behind the adverse effects was: the active substance, the content of the vaccine lymph, the operating technique, the vaccinator, the "disposition" of the vaccinee, or poor care of vaccination wounds.[66]

In 1911, a public debate arose in Finland concerning the death of a two-year-old child after being given the smallpox vaccination. Even Professor Laitinen, the acting director of the National Board of Health, took a stand on this case. He suggested the death was probably the result of many factors. First, the vaccine lymph must have been too fresh and therefore too powerful. Second, the vaccinator must have inoculated the vaccine lymph too deeply when it should have been inoculated on the surface of the skin. And third, the child must already have been weak and ailing, for otherwise it would not have died.[67] A

64 "Rokotuksen turmiollisuus", *Terveys* 2 (1912), no. 5: 33–37; "Rokotuksen seurauksia", *Luonnonparantaja* 3 (1914), no. 3–4: 57–58; Oskari Jalkio, "Keuhkotauti, sen syyt ja luonnonmukainen hoito", *Terveys* 14 (1925), no. 9–10: 127; Rytty, *Ruumiista reformiin* (2021): 99–103, 128–129.

65 Ernst af Hällström, "Suojelusrokotuksesta", *Terveydenhoitolehti* 23 (1911), no. 8–9: 115–116; Hannikainen, "Rokotuksen vastustusliikkeestä" (1914): 67–68.

66 Sharma, *We Lived for the Body* (2014): 124–127.

67 "Rokotuksen aiheuttama kuoleman tapaus Kannuksessa. Lääkintöhallituksen päätirehtöörin ajatus", *Uusi Suometar* (1911), no. 153: 2.

week later it was reported in another newspaper – and later in the medical journal *Terveydenhoitolehti* – that according to a "medical examination", the child had died of "blood poisoning" caused by dirt in the vaccination wound. It was emphasised that the fault had not lain with the vaccine lymph or with the vaccinator after all, but with the poor care of the vaccination wound – in other words with the child's parents.[68]

In his criticism of vaccines, Lybeck balanced between natural healing ideology and scientific medical knowledge. In line with natural healing doctrines, he referred to smallpox vaccine as "dirt" that contaminated the blood, whilst he also considered bacteriological laboratories and serum plants for the manufacture of vaccines " [...] as unnecessary as I find breeding plants for lice and cockroaches [...]".[69] He again endeavoured to justify his argument with scientific research by identifying "dirt" with bacteria:

> [...] it is impossible to get completely pure vaccine lymph because there's no such thing. The only thing every authority affirms is that even the purest vaccine lymph contains a large quantity of all kinds of microorganisms whose pathogenicity, when they end up in the blood, is unknown. It is quite certain, and even the authorities seem to admit this, that these microorganisms often cause tuberculosis, meningitis, kidney diseases, erysipelas, general weakness, etc.[70]

It was true that different microorganisms were discovered in the vaccine lymph during the latter part of the nineteenth century. For some time, it remained unclear what these organisms and their effects were, and how they were related to the pathogen of cowpox. Many medical practitioners were inclined to believe that these organisms were non-pathogenic, but the anti-vaccinationists used these bacteriological findings to support their cause.[71] As Nadja Durbach has observed, it is too simplistic to categorise anti-vaccinationists as opponents of germ theories, because many anti-vaccinationists incorporated the discourse of germs into their own understanding of the nature of disease.[72] Early twentieth-century Finnish supporters of natural healing also used the knowledge of bacteria simplistically. They claimed that the facts, that most

68 "Muualta Suomesta. Se Kannuksen rokotusjuttu", *Sorretun Voima* (1911), no. 77: 3; Hällström, "Suojelusrokotuksesta" (1911): 116.

69 Lybeck, "Muut parantajat ja lääkärit, jatkoa" (1912): 10.

70 Lybeck, "Rokotus-pakko" (1914): 7.

71 Worboys, *Spreading Germs* (2000): 245–246.

72 Durbach, Bodily *Matters* (2005): 157.

diseases were caused by bacteria, and many bacteria had been found in the vaccine lymph, proved that smallpox vaccination was indeed the source of multiple diseases.[73]

These bacteriological findings fed public fears that vaccination might carry or induce other diseases such as syphilis, erysipelas, tuberculosis, glanders, and whooping cough. These fears had an older foundation in observations that the original Jennerian vaccination, where the vaccine lymph had been taken from the pustules of vaccinated humans, had in some cases transferred other diseases such as syphilis from person to person. When this danger became known, the vaccine began to be produced on the skin of animals, mostly calves. However, the animal lymph did not resolve the problem of the unwanted organisms. Eventually, public fears forced medical scientists throughout Europe to find ways of disinfecting these contaminants from the vaccine lymph. One answer was found in the glycerination of the vaccine lymph, which managed, to some extent, to reduce the number of harmful bacteria without destroying the action of the essential organism in the vaccine.[74]

Judging by Finnish medical journals, the purity of the vaccine lymph seemed not to have been as decisive a point to the medical practitioners as it was to the public. Only one physician, Maunu af Heurlin, discussed the matter in 1912 in *Duodecim*. In Heurlin's opinion, researchers had exaggerated the relevance of the bacteria, for although they looked like pyogenic bacteria such as Staphylococcus and Streptococcus, their virulence had not been found to be very high. Besides, glycerination already offered one solution to reduce the amount of bacteria found in the lymph, as did improving the level of hygiene in the vaccine production process. Moreover, Heurlin continued, according to the latest research there was no scientific proof that the vaccine lymph transferred tetanus or tuberculosis to vaccinees. It remained an open question, whether the inflammatory reaction following smallpox vaccination was caused by the active substance or unwanted bacteria in the vaccine. However, the problem

73 "Tiedemiesten lausuntoja rokotuksesta", *Luonnonparantaja* 2 (1913), no. 2–3: 38–39; "160 lääkärin ja lääketieteen professorin lausuntoja rokotuksesta" (1913): 54–56; "215 lääkäriä Italiassa vastustavat julkisesti rokotusta" (1919): 7–9.

74 Worboys, *Spreading Germs* (2000): 246–247; Durbach, *Bodily Matters* (2005): 161–162. Sydney Arthur Monckton Copeman, an English government bacteriologist reported at the Seventh International Congress of Hygiene and Demography in 1891 his observations that storing vaccine lymph in 50% chemically pure glycerine reduced the number of 'extraneous' bacteria while leaving the efficacy of the lymph undiminished. Arthur Salusbury MacNalty and James Craigie, "Sydney Arthur Monckton Copeman 1862–1947", *Biographical Memoirs of Fellows of the Royal Society* 6 (1948), no. 17: 39–41.

was solved if children were vaccinated when they were new-born, because the inflammatory reaction, regardless of its cause, was then smaller.[75]

5 Controversy over Efficacy Highlighted by Statistics

> [...] even against my will I have to admit that vaccination is the biggest delusion into which medicine has fallen; not only is it unable to protect against smallpox, but it is also accompanied by illness and weakening, suffering and death, and it also increases the predisposition to the very same disease from which it was intended to protect the human race.[76]

This was Lybeck's view, and it was in line with another key argument against vaccination, namely that smallpox vaccination did not protect against smallpox, but rather increased the likelihood of contracting smallpox and dying from it.[77]

The main reason for doubting the efficacy of vaccination was the general observation that people who had been vaccinated could still get smallpox. Jenner had based his vaccination on the assumption that just as smallpox infection gave a person lifelong immunity to the disease, so vaccination would give similar lifelong protection. However, Europe-wide smallpox epidemics following the introduction of Jennerian vaccination showed that the artificial immunisation did not last a lifetime and that revaccinations were necessary.[78] Another reason why people contracted smallpox despite being vaccinated was that the immunisation had failed. Especially in the early days of vaccination, the vaccine was difficult to preserve and could lose its effectiveness.[79]

Jenner's innovation had been based on the insight that some pox diseases were so similar that they afforded cross-immunity. Since the pathogen of both smallpox and cowpox remained unidentified well into the twentieth

75 Maunu af Heurlin, "Milloin lapsi on rokotettava?", *Duodecim* 28 (1912), no. 5: 238–240.

76 Lybeck, "Rokotus-pakko" (1914): 7.

77 Aaku Mäki, "Isorokko Itä-Suomessa. Rokotus ja uudestaan rokotus todettu tehottomaksi", *Luonnonparantaja* 1 (1912), no. 1: 11–13; "160 lääkärin ja lääketieteen professorin lausuntoja rokotuksesta" (1913): 54–56; Rytty, "Rokotusvastaisuus historiallisena ilmiönä 1900-luvun alun Suomessa" (2020): 220.

78 Hannikainen, "Rokotuksen vastustusliikkeestä" (1914): 234–237; Worboys, *Spreading Germs* (2000): 118–120, 124.

79 Arno Forsius, "Lehmärokon historiaa", *Kuvauksia lääketieteen historiasta* (2001), https://web.archive.org/web/20190219164116/http://www.saunalahti.fi/arnoldus/vaccinia.html (accessed on 14.8.2024).

century, the relationship between cowpox and smallpox was still disputed in the late nineteenth century.[80] Judging by the Finnish medical journals, this unanswered question of cross-immunity aroused little interest among the profession and did not lessen its trust in the protective power of the smallpox vaccination.[81]

Older physicians especially, who had led the fight against smallpox epidemics in the late nineteenth century, knew from their own experience that smallpox vaccination did really work. They also knew how helpless medical practitioners and Western medicine as a whole would be in the face of smallpox without vaccination, and therefore emphasised its benefits over its adverse effects.[82] For example, ReijoWaara described in *Terveydenhoitolehti* how in one family the elderly mother had died of smallpox, the elderly father had been seriously ill, the 17-year-old son only slightly ill, and the adult daughter not ill at all. The mother had been unvaccinated, the father had been vaccinated as a child, the son 12 years previously, and the daughter revaccinated only two years before. According to ReijoWaara, this gave the clearest possible picture of the protective power of the smallpox vaccination.[83]

An even better way to prove that smallpox vaccination truly worked appeared to be statistical data on smallpox-related deaths compared to the data on the number of vaccinees. Because numbers gave an appearance of objectivity and scientific credibility, statistics became a tool of public policy throughout Europe and played an important role in justifying compulsory vaccination during the nineteenth century.[84] The earliest statistical data on smallpox-related deaths was available in Sweden (Finland was part of Sweden until 1809) from the latter part of the eighteenth century.[85] It seemed to prove

80 Worboys, *Spreading Germs* (2000): 118, 243–244.

81 ReijoWaara, "Onko meillä syytä jatkaa kaikkien lasten pakollinen rokottaminen tähänastiseen tapaan" (1908): 135–136; G.V.L. (pseudonym), "Rokotuksen hyöty", *Terveydenhoitolehti* 23 (1911), no. 3: 39–40; Hällström, "Suojelusrokotuksesta" (1911): 113–114; Uno Winter, "Isosta rokosta ja rokotuksesta", *Terveydenhoitolehti* 24 (1912), no. 2: 17–19; Konrad ReijoWaara, "Suojelusrokotuksesta. Vastaus 'isälle'", *Terveydenhoitolehti* 24 (1912), no. 5: 72–73; Heurlin, "Milloin lapsi on rokotettava" (1912): 234–236; Hannikainen, "Rokotuksen vastustusliikkeestä" (1914): 69, 73, 79.

82 Relander, "Rokottamisesta" (1885): 49–52; Winter, "Isosta rokosta ja rokotuksesta" (1912): 17–19; ReijoWaara, "Suojelusrokotuksesta. Vastaus 'isälle'" (1912): 72–73; ReijoWaara, "Isosta rokosta ja rokotuksesta" (1912): 98–99; Hannikainen, "Rokotuksen vastustusliikkeestä" (1914): 69; Konrad ReijoWaara, "Rokotuksen hyötyä valaisevia pikakuvia", *Terveydenhoitolehti* 29 (1917), no. 7–9: 111–112.

83 ReijoWaara, "Rokotuksen hyötyä valaisevia pikakuvia" (1917): 112.

84 Durbach, *Bodily Matters* (2005): 2; Sharma, *We Lived for the Body* (2014): 120.

85 In Sweden and Finland, nationwide collection of population data was started in 1749 as parish clergy had to start listing births, deaths, and marriages. The cause of death became a standard part of these records in the mid-eighteenth century, and smallpox was com-

that the introduction of the vaccination had decreased both morbidity from smallpox and the frequency of smallpox epidemics.[86]

However, anti-vaccinationists also used such statistics to support their own arguments. Finnish anti-vaccinationists relied on the vast European anti-vaccination literature that used statistics to prove vaccination did not afford protection against smallpox, but instead increased susceptibility and morbidity to the disease.[87] In early twentieth-century Finland, opponents and supporters of vaccination blamed each other for twisting the statistical data.[88] Recent research, however, suggests it was less a question of twisting the statistics than the unreliability of the statistics themselves due to, for example, the unsystematic information collection methods.[89]

In this light, it is unsurprising that a perusal of statistics sometimes converted vaccination supporters into opponents. This was the case with the German physician Heinrich Böing and the English professor of epidemiology Charles Creighton.[90] Something similar may have happened to Lybeck when he studied the writings of medical authors who were known for their vaccine criticism. He considered the arguments presented by the professor of hygiene and epidemiology Adolf Vogt especially convincing. Vogt had based his argument on Europewide statistics. Lybeck interpreted Vogt to mean that neither smallpox infection nor vaccination produced immunity, but only increased susceptibility to the disease, which prompted Lybeck to exclaim:

> Having read this, it feels as though an earthquake will rock the whole construction of medicine so carefully put together. What is there to wait for, what is there to believe, when the cornerstone is thus crumbling into pieces![91]

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paratively easy to diagnose and distinguish from other diseases even by non-physicians. Kari Pitkänen, James H. Mielke and Lynn B. Jorde, "Smallpox and its Eradication in Finland", *Population Studies* 43 (1989), no. 1: 95, 97.

86 Sharma, *We Lived for the Body* (2014): 121.

87 O.T. Axell, "Rokotuksen turmiollisuus", *Terveys* 2 (1912), no. 4: 25–28; Aaku Mäki, "Rokotuskokeista ja sen seurauksista Englannissa", *Luonnonparantaja* 1 (1912), no. 7–8: 104–106; Durbach, *Bodily Matters* (2005): 3, 47–50.

88 Hällström, "Suojelusrokotuksesta" (1911): 115; Hannikainen, "Rokotuksen vastustusliikkeestä" (1914): 67; "Mitä velvollisuudentuntoisten vanhempien on varteenotettava uuden rokotus-lain suhteen?", *Terveys* 6 (1916), no. 11–12: 169–170; Sampsa Luonnonmaa, "Rokotuspakko poistettava", *Parantaja* 3 (1918), no. 2: 28, 32–33.

89 Durbach, *Bodily Matters* (2005): 2–3; Sharma, *We Lived for the Body* (2014): 120–121.

90 Hannikainen, "Rokotuksen vastustusliikkeestä" (1914): 71–74, 78; Sharma, *We Lived for the Body* (2014): 122.

91 Lybeck, "Rokotus-pakko" (1914): 7.

6 The Issues of Necessity and Compulsion

In early twentieth-century Finland, as well as in the rest of Europe, smallpox epidemics had become rare and the horrors they had caused were beginning to fade away.[92] Older medical practitioners suspected that many a young physician had never even seen a patient with smallpox, which explained why some had become critical of compulsory vaccination. Now that the disease was no longer a public health threat, it was easy to imagine that the adverse effects of vaccination might exceed its benefits.[93] Lybeck probably belonged to this latter group of medical practitioners, as he had qualified as a Licentiate of Medicine in 1895,[94] when smallpox was no longer a demographically important disease in Finland.[95]

Thus, the opponents' third key argument against vaccination was that it was unnecessary. This was intertwined with the argument over the effectiveness of vaccination, i.e. whether or not vaccination had anything to do with the decline of smallpox in Europe.[96] Based on statistics, Lybeck claimed that vaccination had had nothing to do with the decline in smallpox mortality. His view was that smallpox had declined only in those regions where it had been fought with isolation and hygienic practices, not in regions that had resorted to vaccination.[97] Lybeck's view was in line with other Finnish anti-vaccinationists who believed that the ultimate cause of smallpox was dirt, and that it was therefore possible to conquer the disease with improved hygiene and the isolation of patients. In other words, smallpox vaccination was a totally unnecessary medical intervention.[98]

Most Finnish physicians, by contrast, seemed to consider smallpox vaccination as the key weapon in the fight against smallpox. Nevertheless, they were

92 After 1910 there had only been a few cases of smallpox a year in Finland, apart from 1918, the year of the civil war. Pitkänen, Mielke and Jorde, "Smallpox and its Eradication in Finland" (1989): 95, 97.

93 ReijoWaara, "Onko meillä syytä jatkaa kaikkien lasten pakollinen rokottaminen tähänastiseen tapaan" (1908): 135–137; Winter, "Isosta rokosta ja rokotuksesta" (1912): 18; ReijoWaara, "Isosta rokosta ja rokotuksesta", (1912): 99; Levander, "Piirteitä kulkutautien luonteesta" (1917): 119.

94 "Vuosikertomus Duodecim-seuran toimintakaudelta 18.11.1918–18.11.1919" (1920): 75.

95 Pitkänen, Mielke and Jorde, "Smallpox and its Eradication in Finland" (1989): 96–97.

96 Hannikainen, "Rokotuksen vastustusliikkeestä" (1914): 71–94; Luonnonmaa, "Rokotuspakko poistettava" (1918): 26–34; Sharma, *We Lived for the Body* (2014): 121–123.

97 Lybeck, "Rokotus-pakko" (1914): 7.

98 "Rokotusvirkailijain ja rokotuksen vastustajain väitteitä", *Luonnonparantaja* 2 (1913), no. 1–2: 41–44; "Valaistusta rokotusasiaan", *Parantaja* 2 (1916), no. 1: 22–23; Luonnonmaa, "Rokotuspakko poistettava" (1918): 32–33.

willing to admit that other preventative measures such as efficient isolation and disinfection, combined with improved hygiene conditions, had also played a prominent role,[99] although the significance of the latter had only grown towards the end of the nineteenth century.[100] An interesting example of how the statistics blurred opinion is the overview of the Finnish anti-vaccination movement written by the district physician and, later, medical counsellor T. Hannikainen in *Duodecim* in 1914. Based on Europe-wide statistical data, Hannikainen set out to prove that the decrease in smallpox mortality during the nineteenth century was principally caused by vaccination. However, when he began to analyse the Finnish statistics, they no longer pointed so obviously to the role of vaccination. He concluded that the decrease in smallpox mortality in Finland during the nineteenth century was not principally due to vaccination but to efficient isolation and disinfection, combined with higher wealth, better education, and improved hygiene.[101]

The questions about the necessity, efficacy and safety of smallpox vaccination were entwined with the dispute over compulsion. Indeed, the anti-vaccination movements in Finland and elsewhere in Europe represented vaccination as dangerous, inefficient, and unnecessary in order to repeal the legislation that made smallpox vaccination mandatory – not necessarily to abolish vaccination per se.[102] In line with this goal, Lybeck demanded in *Terveys* in 1912 the abandonment of compulsory vaccination:

> The law on vaccination was enacted on the assumption that vaccination is harmless and beneficial. If we are able to prove that it is neither, but on the contrary both inefficient and dangerous, it makes the law on compulsory vaccination unjust, and the sooner it will be repealed, the better.[103]

Fundamentally, the Finnish anti-vaccinationists, along with their European counterparts, opposed compulsory vaccination as a violation of individual rights to one's body. Durbach has connected the nineteenth-century anti-vaccinationism with a wider public debate over the extent of the government's rights to intervene in the private lives of its citizens.[104] Interestingly, the

99 Hannikainen, "Rokotuksen vastustusliikkeestä" (1914): 93.
100 Worboys, *Spreading Germs* (2000): 120.
101 Hannikainen, "Rokotuksen vastustusliikkeestä" (1914): 72–93.
102 Durbach, *Bodily Matters* (2005): 13–23, 37–40, 69–90; Rytty, "Rokotusvastaisuus historiallisena ilmiönä 1900-luvun alun Suomessa" (2020): 221–222.
103 Lybeck, "Muut parantajat ja lääkärit, jatkoa" (1912): 11.
104 Lybeck, "Muut parantajat ja lääkärit, jatkoa" (1912): 11; Luonnonmaa, "Rokotuspakko poistettava" (1918): 33–34; Durbach, *Bodily Matters* (2005): 5–6, 69–90; Rytty, "Rokotusvastaisuus historiallisena ilmiönä 1900-luvun alun Suomessa" (2020): 222, 224–225.

well-known German physician and vaccine critic Heinrich Böing opposed first and foremost the compulsion, not the smallpox vaccination as such. Based on revaccination experiments, Böing had concluded that vaccination gave protection against smallpox for only one or two years, which in his opinion was too short a time to justify government intervention in the private lives of its citizens in the form of compulsory vaccination.[105]

In general, estimates of the duration of artificial immunity against smallpox varied among European medical practitioners and scientists, ranging from one to ten or even fifteen years. Based mainly on their own experience, but also taking into account statistics, Finnish medical practitioners were mostly of the opinion that the immunity given by smallpox vaccination lasted from seven to ten years, which was long enough to justify compulsory vaccination.[106] The low incidence of smallpox in the early twentieth century, however, led some Finnish physicians to consider whether it might be possible to abandon compulsory vaccination completely, as anti-vaccinationists demanded.[107] ReijoWaara noted in *Terveydenhoitolehti* in 1908*:*

> Although vaccination is a good means of protection and thus a good tool in the fight against the spread of the disease, it does not follow that we should continue the vaccination of all children for ever, even when there is no threat of disease. For it cannot be insisted that there are no health risks for small children in vaccination.[108]

In the end, these medical practitioners concluded that giving up compulsory smallpox vaccination remained impossible. First, Finland was next to Russia, where the incidence of smallpox was still quite high. It could spread to Finland from there. Second, the physicians doubted whether the Finnish system for preventing epidemic diseases would be sufficiently effective without smallpox vaccinations. There was still no Communicable Diseases Act in effect, without which it would be difficult to make ordinary people collaborate in the

105 Hannikainen, "Rokotuksen vastustusliikkeestä" (1914): 73–74, 78; Sharma, *We Lived for the Body* (2014): 122–123.

106 H.A. Hm (pseudonym), "Lasten vanhemmille Sortavalan lääkäripiirissä", *Terveydenhoitolehti* 4 (1892), no. 6: 87; Winter, "Isosta rokosta ja rokotuksesta" (1912): 18–19; Heurlin, "Milloin lapsi on rokotettava" (1912): 247–260; Hannikainen, "Rokotuksen vastustusliikkeestä" (1914): 79.

107 ReijoWaara, "Onko meillä syytä jatkaa kaikkien lasten pakollinen rokottaminen tähänastiseen tapaan" (1908): 137–138; Winter, "Isosta rokosta ja rokotuksesta" (1912): 19; Levander, "Piirteitä kulkutautien luonteesta" (1917): 119.

108 ReijoWaara, "Onko meillä syytä jatkaa kaikkien lasten pakollinen rokottaminen tähänastiseen tapaan" (1908): 136.

event of a smallpox epidemic. They were known to be reluctant to be vaccinated or revaccinated and did not understand the importance of isolation and hygiene.[109] Ultimately, smallpox vaccination remained compulsory in Finland until 1952.[110]

7 Vaccine Criticism and the Bounds of Orthodox Medicine

In 1914, Doctor T. Hannikainen discussed both the Finnish and international anti-vaccination movement in *Duodecim*. He maintained that the core of anti-vaccinationists was made up of supporters of natural healing and other "enemies of orthodox medicine". He underlined that, among the opponents of vaccination, there were also physicians, although their scientific knowledge was no better than that of a natural healer. He suspected that it was financial greed and hopes for a large clientele that motivated these medical practitioners to join the popular natural healing movement – which was probably an indirect allusion to Lybeck.[111]

However, Hannikainen admitted that the opponents of vaccination did include a number of physicians who deserved the title of scientist. He named professor of pathology and bacteriology Edgar Crookshank, professor of epidemiology Charles Creighton, professor of hygiene and epidemiology Adolf Vogt, and Dr. Heinrich Böing. What separated these men from the "natural healers", according to Hannikainen, was that they had not turned against regular medicine but had worked diligently to shed light on the unanswered questions concerning vaccination. For example, Böing had not criticised the medical establishment nor questioned the protection that smallpox vaccination afforded against the disease. He had mainly criticised compulsory vaccination, rather than the vaccination itself.[112]

Hannikainen did not explicitly discuss Lybeck, but he clearly did not consider the latter as a reasonable medical opponent of vaccination. Lybeck approached the vaccine question from the vantage point of the "enemies of orthodox medicine" – the natural healing movement. It seems he initially

109 ReijoWaara, "Onko meillä syytä jatkaa kaikkien lasten pakollinen rokottaminen tähänastiseen tapaan" (1908): 137–138; Uno Winter, "Vielä kerran kuhnekylvyistä", *Terveydenhoitolehti* 23 (1911), no. 3: 45; Winter, "Isosta rokosta ja rokotuksesta" (1912): 19; Levander, "Piirteitä kulkutautien luonteesta" (1917): 119.

110 Laurent, *Asiantuntijuus, väestöpolitiikka, sota* (2017): 271.

111 Hannikainen, "Rokotuksen vastustusliikkeestä" (1914): 67.

112 Hannikainen, "Rokotuksen vastustusliikkeestä" (1914): 71–74.

developed an interest in natural healing as a cure that supplemented the inadequate arsenal of medical therapies. Although he did not entirely abandon medicine or its teachings, he was attracted by natural healing's ability to combine health with morality, which also influenced his vaccine criticism. Lybeck believed that the only way to health was to follow a morally correct lifestyle, and medicine undermined this goal by offering medicines and vaccines that were used to correct or prevent the traces of an immoral life. This especially concerned venereal diseases: Lybeck had been horrified to learn of efforts to develop a vaccine against syphilis. He exclaimed in *Uusi Suometar* in 1914*:*

> Must even one who struggles to lead a pure life let himself and his children be vaccinated with the poison of syphilis so that mankind can continue to sin without punishment?[113]

In many respects, Lybeck was undertaking a challenging balancing act between orthodox medicine and unorthodox healing. His vaccine criticism was based on the natural healing ideology, but he tended to justify it by referring not just to the scientific knowledge on the smallpox vaccination, but also to the lack of it. His aim was not to solve these unanswered medical questions related to vaccination, but rather to use the elements of uncertainty to criticise the basic principle of it. Indeed, his criticism was directed at the entire medical establishment, which was based on a scientific worldview and which he saw as confined to the laboratory, forgetting the connection between health and morality. His criticism also extended to his colleagues, whom he accused of uncritically accepting vaccination despite the problems associated with it, which made them "morally criminal and guilty of ruining their own people".[114] In the end, the vaccination debate was also a clash of worldviews.

A telling example of the defence of medical orthodoxy was the 23rd general meeting of the Medical Society of Finland in 1911. At the meeting, Lybeck was questioned by his colleagues about his relationship with the followers of Kuhne and the anti-vaccination movement. Regardless of the content – scientific or otherwise – of Lybeck's vaccine criticism, his colleagues defined him as a preacher of Kuhne's doctrines simply because he associated with Kuhne's followers at the Kirvu natural healing sanatorium. The meeting accepted a resolution according to which the Medical Society of Finland disapproved of licensed physicians using their medical authority to support anti-vaccinationism and

113 Lybeck, "Rokotus-pakko" (1914): 7.
114 Lybeck, "Muut parantajat ja lääkärit, jatkoa" (1912): 11.

the quacks who followed Kuhne's doctrines. Officially, Lybeck remained a member of the Medical Society of Finland, but significantly, he addressed its other members as "former colleagues".[115]

This chapter has shown, how doubts or criticism towards vaccination were allowed in the confines of the medical profession only as far as they did not turn against the basic principle of vaccination, the scientific conception of disease, or the medical establishment per se. My analysis of the discussions conducted in the two medical journals suggests that the scientific uncertainties related to smallpox vaccination roused very little discussion among the Finnish medical profession. If anything, medical practitioners tended to downplay the role of these elements of uncertainty in order to calm the public and reassure it of the benefits of smallpox vaccination. Although scientific evidence, for example from laboratory research, was beginning to play an increasingly central role in defining medical boundaries, it was ultimately grassroots knowledge from medical practice that filled the gaps left by medical uncertainty. The Finnish physicians' own practical experience was enough to convince them that smallpox vaccination really worked and that it was the best available means of controlling smallpox. Most importantly, based on this experience, they estimated that the benefits of smallpox vaccination to the nation were greater than its associated problems and risks.

115 "Suomen lääkäriseuran 23:s yleinen kokous" (1911), no. 220: 4–5.