

The South Asian Origins of the Global Network to Eradicate Blindness: WHO, NGOs, and Decentralization

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Abstract (229/ 250 words)

The global network to eradicate blindness emerged out of the work of Western and South Asian professionals to eradicate smallpox which was endemic in South Asia. The history of the emergence of the global network to eradicate blindness demonstrates a shift from vertical command and control public health programs directed by the WHO, to the decentralized public health services originating in non-profit, non-governmental organizations and coordinated by the WHO. The WHO constitution started with a federal regionalist structure that encouraged collaboration and coordination with NGOs. In South Asia in particular, epidemiologists and general medical practitioners moved from eradicating smallpox through the WHO to creating their own domestic and international NGOs based in various countries with a mission to control blindness in South Asia and Africa. In 1975, pushed by the WHO Director General, these new NGOs in turn joined with individual ophthalmologists and existing blind member associations to form the International Agency for the Prevention of Blindness. Thus, the WHO was shaped by, and shaping, international NGOs such as the IAPB. The IAPB pushed for the formation of the WHO Prevention of Blindness program. This was the earliest example of how the IAPB facilitates bottom-up agenda-setting in the WHO. In 1980, when the WHO officially closed the smallpox program, the Prevention of Blindness program first received independent funding. Presently, the IAPB acts as a decentralized arm of the WHO.

Keywords: decentralization, public health, NGO, blindness, smallpox

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VISION 2020: The Right to Sight is the global initiative for the elimination of avoidable blindness, a joint programme of the World Health Organization (WHO) and the International Agency for the Prevention of Blindness (IAPB).¹

Introduction

In the program of the fifth general assembly of the International Agency for the Prevention of Blindness (IAPB), which met in 1994 in Berlin, the director general of the World Health Organization (WHO), Dr. Hiroshi Nakajima (Japan), wrote about the close collaborations and connections between the WHO's Prevention of Blindness program and nongovernmental organizations.² Those close connections enable them to strategically and systematically address a public health problem that affects 39 million people, approximately the same number of people worldwide as are affected by HIV/AIDs.³ Likewise, in the same program, the two

¹ International Agency for the Prevention of Blindness (IAPB), "VISION 2020: The Right to Sight-IAPB," IAPB, 2018, <https://www.iapb.org/vision-2020/>.

² IAPB, *International Agency for the Prevention of Blindness 5th General Assembly, Towards Affordable, Accessible, Appropriate Eye Care, International Conference Center, Berlin, Germany, May 8–13, 1994* (Berlin: International Agency for the Prevention of Blindness, 1994), 1. GVERI Resources Collection, Govindappa Venkataswamy Eye Research Institute, Aravind Eye Care System, Madurai, India (hereafter GVERI), Box ORG-20.

³ Donatella Pascolini and Silvio Paolo Mariotti, "Global Estimates of Visual Impairment: 2010," *British Journal of Ophthalmology* 96, no. 5 (May 1, 2012): 614–18; Logan D. A. Williams, "Three Models of Development: Community Ophthalmology NGOs and the Appropriate Technology Movement," *Perspectives on Global Development and Technology* 12, no. 4 (June 25, 2013): 449–75; "Number of Blind to Come down by 4m as India Set to Change Blindness Definition," *Hindustan Times*, March 27,

nongovernmental host organizations, the German Committee for the Prevention of Blindness and the Christoffel-Blindenmission (later renamed Christian Blind Mission), indicated that their goal for the assembly was “to create an environment where we may learn from one another’s successes, and share in the solving of similar problems, in order to achieve our common goal of blindness prevention ... [and] produce new ideas to facilitate the development of—Affordable, Accessible and Appropriate—eye care services in all regions of the globe.”⁴ In the wake of German reunification in 1990, the German host organizations felt positive about their goal of global blindness prevention and eradication. In 1999, the IAPB and the WHO started the Vision 2020 program to try to prevent the doubling of the number of blind people due to avoidable causes that was predicted for the period of 1990–2020.⁵

The eradication of smallpox in the WHO South-East Asia Regional Office was a serendipitous event that resulted in South Asia becoming the center of the global network to eradicate blindness. This essay argues the following points: (1) The eradication of smallpox in WHO South-East Asia Regional Office demonstrates the deconcentration of administrative power from the central office to the regional offices built into the WHO constitution; (2) The IAPB, shifted from, first, observing at WHO, to second, influencing the creation of the WHO Prevention of Blindness program, and finally, to serving as its advisor and ancillary. The WHO

2017, <https://www.hindustantimes.com/india-news/india-to-change-definition-of-blindness-reduce-number-of-blind-by-4-million/story-HxHKeH3XpfPBETsr2moerO.html>.

⁴ IAPB, “5th General Assembly” (ref. 2), 2; GVERI (ref. 2).

⁵ Allen Foster and Serge Resnikoff, “The Impact of Vision 2020 on Global Blindness,” *Eye* 19, no. 10 (2005): 1133–35; World Health Organization, “WHO Prevention of Avoidable Blindness and Visual Impairment,” 2009, accessed April 30, 2009, <http://www.who.int/blindness/en/>.

has delegated some decision-making, management, and financial authority to IAPB.⁶ Thus the WHO Prevention of Blindness program has influenced, and been shaped by the IAPB, a non-governmental organization.

There was a shift from vertical command and control public health programs directed by the WHO to the decentralized public health services originating in non-profit, non-governmental organizations and coordinated by the WHO. In South Asia in particular, epidemiologists and general medical practitioners moved from treating smallpox through the WHO to creating their own domestic and international NGOs based in various countries with a mission to control blindness in South Asia and Africa. In 1975, pushed by the WHO Director General, these new NGOs in turn joined with individual ophthalmologists and existing blind member associations to form the International Agency for the Prevention of Blindness. The IAPB pushed for the formation of the WHO Prevention of Blindness program. In 1980, when the WHO officially

⁶ The primary sources used to write this case came mainly from three interviews with community ophthalmology professionals, and from English resources in four archives: The Foundation of the American Academy of Ophthalmology Museum of Vision & Ophthalmic Heritage (San Francisco); the Aravind Eye Care System Govindappa Venkataswamy Eye Research Institute (GVERI) Resources Center (Madurai, India); the World Health Organization (WHO) Institutional Repository for Information Sharing (IRIS) online; and the National Museum of American History, Lemelson Center for the Study of Invention and Innovation. GVERI has source materials in English, Tamil, and Hindi, and WHO IRIS has materials in English, French, Spanish, Russian, Chinese, and Arabic. GVERI materials included IAPB conference pamphlets, brochures from some of the six-hundred-plus Lions Clubs in India, and materials from other NGOS and eye hospitals. WHO IRIS materials include World Health Assembly notes, program budgets, and other organizational records. I also used a variety of secondary sources to bolster areas of my analytical argument.

closed the smallpox program, the Prevention of Blindness program first received independent funding. Presently, the IAPB acts as a decentralized arm of the WHO Prevention of Blindness program.

More recent participants and observers in the “global campaign against all forms of avoidable blindness with emphasis on underserved communities” may be unaware of the connection between this joint undertaking by the WHO and IAPB, and an earlier WHO-controlled campaign to eradicate smallpox.⁷ The complete eradication of smallpox from human populations worldwide provided the initial “climate of optimism” for a blindness eradication program.⁸ It was in such a climate that medical professionals involved in what they called rural

⁷ IAPB, *IAPB Constitution* (West Sussex, UK: International Agency for the Prevention of Blindness, 1995 [1974]), 1; GVERI, Box ORG-20.

⁸ Suzanne Gilbert, phone interview with Logan D. A. Williams, March 28, 2010; see the short article on community ophthalmology in India by Govindappa Venkataswamy in IAPB, *The International Agency for the Prevention of Blindness 3rd General Assembly, A Decade Of Progress, New Delhi, India, December 6–11, 1986* (New Delhi, India: International Agency for the Prevention of Blindness, 1986), 27–29; GVERI, Box ORG-20; John Wilson, “Preventing Blindness, A Retrospective,” in *World Blindness and Its Prevention*, vol. 3, ed. International Agency for the Prevention of Blindness and Carl Kupfer (New York: Oxford University Press, 1988), 3; World Health Organization Regional Office for South-East Asia, Twenty-Eighth Session, *Report and Minutes of the Twenty-Eighth Session of the WHO Regional Committee for South-East Asia, New Delhi, 25–30 August, 1975* (New Delhi: World Health Organization, Regional Office for South-East Asia, November 1975). Also see the letters celebrating SEVA’s twenty-five years of service from the WHO Prevention of Blindness and Deafness program to SEVA and from Dr. R. P. Pokhrel to SEVA: “SEVA’s Silver Anniversary Concert,” 2003, GVERI Box ORG-14.

and public health ophthalmology decided to move forward with proposals to eradicate blindness worldwide. At the time, many of these medical professionals were concentrated in South Asia where smallpox was endemic. Without knowing this connection between smallpox and blindness, it is difficult to understand why an international network of eye health care professionals focused on marginalized communities is centered in South Asia versus elsewhere.

This is especially true because, after World War II, the common understanding among the Allied powers was that innovative science and technology always, necessarily, diffuses from the West to the Rest.⁹ This article offers a new perspective about the close relationship between the WHO, its partner—the multilateral, non-profit, non-governmental organization the IAPB—and foreign and domestic medical professionals working in governments and NGOs in South Asia. It therefore contributes to the project of many historians to provincialize Europe and demonstrate the legitimacy of non-Western knowledges.¹⁰ By describing a global network centered in South Asia it joins other non-Western, ethnocentric, exceptionalist accounts of the

⁹ Randall M Packard, “Visions of Postwar Health and Development and Their Impact on Public Health Interventions in the Developing World,” in *International Development and the Social Sciences: Essays on the History and Politics of Knowledge*, ed. Frederick Cooper and Randall M. Packard. (Berkeley: University of California, 1997).

¹⁰ One provincializes Europe by creating “a history that deliberately makes visible, within the very structure of its narrative forms, its own repressive strategies and practices....to write over the given and privileged narratives of citizenship other narratives of human connections” Dipesh Chakrabarty, “Postcoloniality and the Artifice of History,” in *The Post-Colonial Studies Reader*, ed. B. Ashcroft, G. Griffiths, and H. Tiffin, 383–90 (London: Routledge, 1995), 388; David Arnold, “Europe, Technology, and Colonialism in the 20th Century,” *History and Technology: An International Journal* vol. 21, no. 1 (2005): 85–106.

history of science.¹¹ The origins of the global network to eradicate blindness offer a crucial opportunity to explore the people and places of South Asia, and their significant contributions to understanding the history of NGOs in global health.

Out of the many communicable and non-communicable diseases that affect human health around the world, blindness is important to study because it affects such a great number and has such a devastating impact on identities and livelihoods. Blindness in Asia is interesting for a variety of reasons. The first couching surgery to correct blindness due to cataract was first performed in southern India more than two-thousand years ago.¹² Seventh-century records from China show Indian men with couching needles.¹³ South Asia's long tradition of treating eye diseases make it an important site for historical investigation.

The people of South Asia have long been a part of a global history of blindness investigation and treatment.¹⁴ In 2004, India and Nepal had high cataract surgical rates, a

¹¹ On the circulation of knowledge, see: Arnold, "Europe, Technology and Colonialism in the 20th Century," *History and Technology* 21, no. 1 (2005): 85–106; Fa-Ti Fan, "The Global Turn in the History of Science," *East Asian Science, Technology and Society: An International Journal* 6, no. 2 (2012): 249–58; and Kapil Raj, "Introduction: Circulation and Locality in Early Modern Science," *British Journal for the History of Science* 43, no. 4 (2010): 513–17.

¹² Wilson, "Preventing Blindness" (ref. 8).

¹³ Vijaya Deshpande, "Ophthalmic Surgery: A Chapter in the History of Sino-Indian Medical Contacts," *Bulletin of the School of Oriental and African Studies, University of London* 63 no. 3 (2000): 370–88.

¹⁴ Aparna Nair, "'They Shall See His Face': Blindness in British India, 1850–1950," *Medical History* 61, no. 2 (2017): 181–99.

measurement of surgeries performed per million people with blindness due to cataract.¹⁵ Both countries are known for high-quality eye hospitals and well-trained ophthalmic personnel. In contrast to their success in indicators of emerging good eye health care, India is well-known as an emerging economy, whereas Nepal is one of the poorest countries in the world. Nepal's gross domestic product (GDP) per capita (purchasing power parity) ranked 196 out of 229 countries in 2017, and 25.2% of Nepal's population lived under the poverty line in 2011.¹⁶ Despite its poverty and political instability (including the civil war from 1995 to 2008 that refashioned the Hindu kingdom into a democratic republic), Nepal has successfully increased its cataract surgical rate since the 1980s. India has likewise increased its cataract surgical rate. Furthermore, some of the most well-known eye institutions in the world (such as Aravind Eye Care System in India and the Tilganga Institute of Ophthalmology in Nepal) are located in South Asia. These influential NGOs, as well as others such as SEVA Foundation (US) and the Royal Commonwealth Society for the Blind (UK), are coordinated by the IAPB. They are at the center of a global network of professionals interested in community ophthalmology.

Community ophthalmology as a discipline combines features of public health, community medicine and clinical ophthalmology.¹⁷ African-American ophthalmologist Dr.

¹⁵ World Health Organization, "Global Cataract Surgical Rates In 2004," 2004, accessed February 1, 2007, http://www.who.int/blindness/data_maps/CSR_WORLD_2004.jpg.

¹⁶ CIA, "CIA - The World Factbook - Nepal," *The World Factbook* (Washington, DC: Central Intelligence Agency, 2018), <https://www.cia.gov/library/publications/the-world-factbook/geos/np.html>

¹⁷ Patricia E. Bath, "Blindness Prevention through Programs of Community Ophthalmology in Developing Countries," XXIII Concilium Ophthalmologicum, Kyoto, International Congress Series No. 450, 2 (1978): 1913–15.; "Rationale for a Program in Community Ophthalmology," *Journal of the National Medical Association* 71 (1979): 145.

Patricia E. Bath coined the term community ophthalmology in 1976 to emphasize an important and unique feature of her proposed solution to the problem of blindness in marginalized populations: eye health care should be primary health care.¹⁸ This was a novel and controversial argument she made to the US public health community and the US ophthalmology community.¹⁹

Community ophthalmology professionals include community eye health care workers, hospital managers, epidemiologists, and ophthalmologists. They typically provide eye health services to a large number of poor blind and low-vision patients and track population-wide outcomes. These services range from screening for vision problems, to providing surgical correction for diseases of the eye. Frequently, but not always, community ophthalmology professionals are embedded in international networks.

¹⁸ Please see her self-citation of her 1976 presentation (at the annual meeting of the American Public Health Association in Florida) in the reference lists of the following two publications and interview transcript: Bath, “Blindness Prevention” (ref. 17); Patricia E. Bath, C. O. Quarcoopome, and Taj H. Kirmani, “Community Ophthalmology Plan for Underserved Populations,” *ACTA XXIV International Congress of Ophthalmology* 2 (1983): 13–17.; Patricia Bath and Eve Higginbotham, “Conversation Between Patricia Bath, MD, and Eve Higginbotham, MD, Orlando, FL.” Oral History Collection, the Foundation of the American Academy of Ophthalmology Museum of Vision & Ophthalmic Heritage, October 23, 2011, San Francisco, accessed December 1, 2013, <http://www.museumofvision.org/bios/?key=69&subkey=1>.

¹⁹ Bath, “Rationale for a Program” (ref. 17); personal communication with Logan D. A. Williams, March 2, 2018; Bath and Higginbotham, “Conversation Between Patricia Bath, MD, and Eve Higginbotham” (ref. 18); Patricia Era Bath, “Blacks at Greater Risk for Blindness,” *Archives of Ophthalmology* 108, no. 10 (1990): 1377.

WHO SEARO, Regionalism, and The Smallpox Decade, 1965–1975

In order to understand why strong community ophthalmology programs developed in South Asia, one must first understand something of the history of smallpox. The regional offices of the WHO are where operational decisions are made that implement the policies and programs coming from the WHO central office in Geneva.²⁰ This includes programs such as the smallpox eradication program which was intensified between 1965 and 1975. The eradication of smallpox in India and Nepal demonstrates the deconcentration of administrative power from the central office to the regional offices built into the WHO constitution.

The formation of the World Health Organization’s administrative structure in 1948 was affected by regional politics in North and South America. Three groups were part of the formation of the WHO in the 1940s: member-states; non-profit, non-governmental organizations;²¹ and existing inter-governmental organizations. The Pan-American Sanitary Board (PASB), an existing inter-governmental organization, was highly influential in the creation of the constitution of the WHO.²² Since 1902, the Pan-American Sanitary Board was composed of North and South American countries but primarily represented US interests with

²⁰ Javed Siddiqi, “Attempts to Build a Decentralized Universal Health Organization,” in *World Health and World Politics: The World Health Organization and the UN System* (Columbus, SC: University of South Carolina Press, 1995), 53–122.

²¹ Thomas Richard Davies, *NGOs: A New History of Transnational Civil Society* (New York: Oxford University Press, 2014).

²² Tine Hanrieder, “The Path-Dependent Design of International Organizations: Federalism in the World Health Organization,” *European Journal of International Relations* 21, no. 1 (2015): 215–39; Siddiqi, “Attempts to Build” (ref. 20).

the role of president in PASB permanently assigned to the US surgeon general.²³ US representatives in March 1946 required that PASB remain autonomously governed, but suggested that other regional organizations be centrally governed by the WHO in a region-based administrative structure.²⁴ A few months later at the International Health Conference in June 1946, US representatives back-pedaled on their imperative for continued autonomy of the Pan-American Sanitary Board; however, other PASB member-states formed a powerful voting block advocating for the regional WHO constitutional design.²⁵ This regional structure was still reflected in article 44 of the 2006 edition of the WHO constitution.²⁶

Once the constitution was ratified in 1948, as each of the new six WHO regional offices began, they looked to the example of the Regional Office of the Americas (the WHO name for PASB), and self-elected regional directors in defiance of the WHO constitution, which required that regional directors be appointed by the WHO central office.²⁷ The result is that no other UN organization has elected regional directors with the same high level of administrative and policy-

²³ Hanrieder, “The Path-Dependent Design” (ref. 22); Randall M. Packard, *A History of Global Health: Interventions into the Lives of Other Peoples* (Baltimore: Johns Hopkins University Press, 2016).

²⁴ Hanrieder, “The Path-Dependent Design” (ref. 22).

²⁵ Hanrieder, “The Path-Dependent Design” (ref. 22); Siddiqi, “Attempts to Build” (ref. 20).

²⁶ International Health Conference, “WHO Constitution,” in *Summary Report on Proceedings, Minutes and Final Acts of the International Health Conference Held in New York from 19 June to 22 July 1946* (New York: United Nations, World Health Organization, Interim Commission, 1948), 100–109, <http://www.who.int/iris/handle/10665/85573>.; World Health Organization, “WHO Constitution,” in *Basic documents*, 6th ed., 1–18. Geneva, Switzerland: World Health Organization, 2007, <http://www.who.int/iris/handle/10665/43637>.

²⁷ Hanrieder, “The Path-Dependent Design” (ref. 22)

making autonomy and power.²⁸ The WHO regional offices, and the elected WHO regional director positions therefore represent an early deconcentration of administrative power from the WHO to its regional offices.²⁹ The WHO has been nimble in avoiding being coopted by

²⁸ Yves Beigbeder, *The Internal Management of United Nations Organizations: The Long Quest for Reform* (New York, NY: St. Martin's Press, 1997), Erica-Irene A. Daes and Adib Daoudy, "Decentralization of Organizations within the United Nations System. Part III, The World Health Organization" (Geneva, Switzerland: United Nations Joint Inspection Unit, April 1993), <http://dag.un.org/handle/11176/338739>, and FAO (Food and Agriculture Organization of the United Nations), "FAO: The Challenge of Renewal - Report of the Independent External Evaluation of the Food and Agriculture Organization of the United Nations (FAO)" (Rome: Food and Agriculture Organization of the United Nations, 2007), cited in Hanrieder, "The Path-Dependent Design" (ref. 22).

²⁹ This deconcentration of power occurred before public administration scholars theorized the four main components of decentralizing a centralized government structure: deconcentration of decision making and management to peripheral government units responsive to the central government; delegation of decision-making and management to parastatal organizations such as public corporations or regulatory commissions; devolution of decision-making, management, and financial resources to local government agencies; privatization of public goods and services to non-profit or for-profit non-governmental organizations. Dennis A. Rondinelli and G. Shabbir Cheema, "Implementing Decentralization Policies: An Introduction," in *Decentralization and Development: Policy Implementation in Developing Countries*, ed. G. Shabbir Cheema, Dennis A. Rondinelli, and United Nations Centre for Regional Development (Beverly Hills, CA: Sage, 1983), 9–34, and Thomas Bossert, "Analyzing the Decentralization of Health Systems in Developing Countries: Decision Space, Innovation and Performance," *Social Science and Medicine* 47, no. 10 (1998): 1513–27.

powerful member-states.³⁰ Perhaps this is because their administrative structure started out as decentralized from Geneva into regions.

Another connection between smallpox and community ophthalmology is that severe smallpox causes blindness. Smallpox pustules can cause scarring on various parts of the eye organ, including the conjunctiva, eyelid, and cornea.³¹ From the early 1800s, smallpox was a significant cause of blindness globally.³² The last case of smallpox was seen in the US in the 1940s; this was likely part of a larger trend of improved health infrastructure in industrialized countries as well as health education about the spread of diseases. Starting in the 1950s, cataract became the most significant cause of blindness globally.³³ Smallpox was no longer a leading cause of avoidable blindness globally by the 1960s.³⁴ As epidemiologist, ophthalmologist, and Dean Emeritus of Johns Hopkins University Bloomberg School of Public Health Dr. Alfred

³⁰ Nitsan Chorev, *The World Health Organization between North and South* (Ithaca, NY: Cornell University Press, 2012).

³¹ S. R. Rathinam and E. T. Cunningham, “Vitiligo Iridis in Patients with a History of Smallpox Infection,” *Eye* 24, no. 10 (2010): 1621–22.

³² Stewart Duke-Elder, ed., *System of Ophthalmology, Diseases of the Outer Eye*, vol. 8 (London: H. Kimpton, 1965), cited in Hugh R. Taylor and Jill E. Keeffe, “World Blindness: A 21st Century Perspective,” *British Journal of Ophthalmology* 85, no. 3 (2001): 261–66

³³ Taylor and Keeffe, “World Blindness” (ref. 32).

³⁴ 25th World Health Assembly and M. G. Candau, “Provisional agenda item 2.6 Prevention of Blindness: Report by the Director-General,” A25/10, WHA25 (Geneva, Switzerland: World Health Organization, March 30, 1972). <http://www.who.int/iris/handle/10665/145459>.

Sommer noted, by then “there were people who survived smallpox and were blind from it, but most people who are going to get that severe a smallpox [infection] usually ended up dying.”³⁵

Although smallpox may no longer have been a leading cause of blindness globally in the 1960s, it was still considered a leading cause of blindness in India.³⁶ In the mid-1800s, 75% of the blindness in India was attributed to smallpox disease.³⁷ British India banned variolation in 1865 because of its association with worship of the goddess Shitala Mata, but then had a public-health problem on its hands.³⁸ British India in response developed peripheral health administrative infrastructure to fight the cyclically endemic smallpox through vaccination.³⁹ In fact, by 1900, British India produced a variety of vaccines (cattle-based, chicken egg-cultured, rabbit-based, human-based; fresh, lanoline-preserved, glycerin-preserved, dried; and so on) with

³⁵ Dr. Alfred Sommer, phone interview with Logan D. A. Williams, April 16, 2013.

³⁶ World Health Organization Regional Office for South-East Asia, “25th Anniversary of the WHO Regional Organization for South-East Asia, 1948–1973,” New Delhi, India: World Health Organization, Regional Office for South-East Asia, 1975, <http://apps.searo.who.int/pds/ShowDetails.asp?Code=B3768>.

³⁷ Leonard Rogers, “Smallpox and Vaccination in British India during the Last Seventy Years,” *Proceedings of the Royal Society of Medicine* 38 (November 24, 1944): 135–39, cited in Frank Fenner, Donald Ainslie Henderson, Isao Arita, Zdenek Jezek, and Ivan Danilovich Ladnyi, “India and the Himalayan Area,” in *Smallpox and Its Eradication, History of International Public Health* (Geneva, Switzerland: World Health Organization, 1988); Nair, “They Shall See His Face” (ref. 14).

³⁸ Frederique Apffel Marglin, “Smallpox in Two Systems of Knowledge,” UNU/WIDER Planning Meeting on Systems of Knowledge, July 1987.

³⁹ Sanjoy Bhattacharya, Mark Harrison, and Michael Worboys, “Innately Diverse,” in *Fractured States: Smallpox, Public Health and Vaccination Policy in British India 1800–1947* (New Delhi: Orient Longman, 2005), 146–230.

different princely states competing to enhance the science of vaccination.⁴⁰ Despite the breadth and depth of these scientific and administrative efforts, smallpox remained a significant cause of blindness in India through the 1970s.⁴¹ Around the same time, smallpox scars were also responsible for 3% of blindness in Nepal.⁴²

The plan to eradicate smallpox worldwide drew on lessons learned from the failure of the malaria eradication program (which was converted into a malaria control program).⁴³ The WHO malaria worldwide eradication program from 1955 to 1960 was an expensive failure and “[d]uring its 15 years of existence, it accounted for more than one-third of [the] WHO’s total expenditures and its 500-person WHO staff dwarfed all other programmes. The USA alone contributed nearly a thousand million dollars to the effort.”⁴⁴ The WHO malaria eradication program failed as a public-health intervention in part because of its top-down, rigid structure.⁴⁵ It was not nimble enough to adjust to different cultural and political-economic contexts although it

⁴⁰ Bhattacharya, Harrison, and Worboys, *Innately Diverse* (ref. 39).

⁴¹ Venkataswamy, “Community Ophthalmology,” in IAPB, *3rd General Assembly*, GVERI. (ref. 8)

⁴² L. B. Brilliant, R. P. Pokhrel, N. C. Grasset, J. M. Lepkowski, A. Kolstad, W. Hawks, R. Pararajasegaram, G. E. Brilliant, S. Gilbert, and S. R. Shrestha, “Epidemiology of Blindness in Nepal,” *Bulletin of the World Health Organization* 63 no. 2 (1985): 375–86.

⁴³ World Health Organization and Socrates Litsios, *The Third Ten Years of the World Health Organization: 1968–1977* (Geneva: World Health Organization, 2008), 181–84, http://www.who.int/global_health_histories/who-3rd10years.pdf.

⁴⁴ Donald A. Henderson, “Eradication: Lessons from the Past,” 1999, accessed January 14, 2013, <http://www.cdc.gov/mmwr/preview/mmwrhtml/su48a6.htm>.

⁴⁵ Henderson, “Eradication” (ref. 44).

reaped interesting scientific data that led to an understanding of the importance of surveillance and containment strategies in stopping the spread of communicable diseases.

The application of these lessons to eradicating smallpox began in 1965, when the United States funded an eradication program in West Africa led by Dr. Donald A. Henderson using Center for Disease Control (CDC) medical officers and USAID staff.⁴⁶ Dr. William Foege trained with the CDC and then worked on smallpox eradication in eastern Nigeria beginning in December 1966.⁴⁷ Dr. Foege worked with Swiss-French epidemiologist Dr. Nicole Grasset (Red Cross) and others; their West African studies proved in June 1967 that smallpox requires close contact to spread and that surveillance-containment can be an effective control strategy.⁴⁸

In contrast to the WHO malaria eradication program, its smallpox eradication program was initially underfunded, which led to the need for ingenuity.⁴⁹ Having been burned with the failure of the global malaria eradication program, the director general of the WHO, Dr. Marcelino G. Candau (Brazil), reluctantly authorized a global smallpox eradication program at the insistence of the less economically developed countries voting bloc in the World Health

⁴⁶ Fenner et al., “India and the Himalayan Area” (ref. 37); Henderson, “Eradication” (ref. 44); Bob H. Reinhardt, “The Global Great Society and the US Commitment to Smallpox Eradication,” *Endeavour* 34, no. 4 (2010): 164–72.

⁴⁷ William H. Foege, *House on Fire: The Fight to Eradicate Smallpox* (Berkeley: University of California Press, 2012); Donald A. Henderson, “Smallpox: Dispelling the Myths. An Interview with Donald Henderson,” *Bulletin of the World Health Organization* 86, no. 12 (2008): 909–88.

⁴⁸ Isao Arita, *Smallpox Eradication Saga: An Insider’s View* (New Delhi: Orient Blackswan, 2010); Foege, *House on Fire* (ref.47); Henderson, “Dispelling the Myths” (ref. 47).

⁴⁹ Henderson, “Eradication” (ref. 44).

Assembly in 1966.⁵⁰ This shocked the “Geneva bloc” which consisted of member-states such as the United States, France, Britain, and other powerful industrialized countries, who had actively opposed such a global program.⁵¹ This was during the heyday of the Cold War, and therefore a large part of their objection may have been because such a program for smallpox had been first proposed by the Soviet Union almost a decade earlier.⁵² Yet in 1964, US President Lyndon Johnson first proposed his domestic program to eliminate poverty and racial injustice at home, the “Great Society,” and also demonstrated interest in expanding this program into his foreign policy. With pledged financial support from President Johnson in 1965, the WHO Director General moved forward.⁵³

Before seeing the results of his plans with the US smallpox program for West Africa, Dr. Donald A. Henderson became chief of the WHO smallpox eradication unit in Geneva in 1966.⁵⁴ At the WHO, Dr. Henderson modified the program he had previously designed to eliminate

⁵⁰ The World Health Assembly is where nation-states and NGO observers proffer pre-drafted resolutions and make decisions by voting on them. Then the WHO director general and executive board transforms these resolutions into policy at the WHO, which the WHO regional offices then implement. Less economically developed countries are greater in number than the “Geneva bloc” and each country gets one vote. See Siddiqi, “Attempts to Build” (ref. 20) and also Henderson, “Dispelling the Myths” (ref. 47); WHO and Litsios, *The Third Ten Years* (ref. 43).

⁵¹ Reinhardt, “Global Great Society” (ref. 46).

⁵² Reinhardt, “Global Great Society” (ref. 46); World Health Organization “Smallpox,” in *Bugs, Drugs and Smoke: Stories from Public Health* (Geneva: World Health Organization, 2011), 3–21, http://www.who.int/about/history/publications/public_health_stories/en/.

⁵³ Reinhardt, “Global Great Society” (ref. 46).

Fenner et al., “India and the Himalayan Area” (ref. 37); Henderson, “Dispelling the Myths” (ref. 47).

smallpox in West Africa. At this time both the United States and the WHO programs shifted from the old strategy of mass vaccination to the new strategy of surveillance-containment protocols which incorporated targeted vaccination in an outbreak area.⁵⁵

The WHO smallpox eradication program had an operating budget of \$2.4 million per year.⁵⁶ This small budget was a pittance compared to the malaria eradication program, especially considering that that for its first seven years (1966–1972), cash donations to the smallpox eradication program were only \$79,500.⁵⁷ As implemented, the WHO smallpox eradication program staff was small (9 in Switzerland, 150 around the world) and relied upon support at the community level in addition to the national government level.⁵⁸ In each country where they operated, this small staff required supplementation by domestic health personnel including training local community leaders (such as teachers and religious leaders) to provide vaccinations. Instead of sticking to a rigid operations manual, they improvised based in part upon the local health care infrastructure and personnel that were available in each country.⁵⁹ This is demonstrated by how the smallpox intensification program was run in India.

⁵⁵ Henderson, “Dispelling the Myths” (ref. 47).

⁵⁶ Reinhardt, “Global Great Society” (ref. 46).

⁵⁷ Henderson, “Eradication” (ref. 44).

⁵⁸ Henderson, “Eradication” (ref. 44); “Dispelling the Myths” (ref. 47).

⁵⁹ Sanjoy Bhattacharya and Rajib Dasgupta, “A Tale of Two Global Health Programs: Smallpox Eradication’s Lessons for the Antipolio Campaign in India,” *American Journal of Public Health* 99, no. 7 (2009): 1176–84; Henderson, “Eradication” (ref. 44).

Before the WHO started the global smallpox eradication program, the governments of India and Nepal started their own eradication programs in 1962.⁶⁰ At this time, the ethos of decentralization was just beginning to be theorized and applied to restructure United Nations-run programs after the United Nations Technical Assistance Program published *Decentralization for National and Local Development*.⁶¹ Five years later, Europe, North America, and Australia were considered officially “smallpox free” and the governments of India and Nepal also implemented the WHO intensive smallpox eradication program.⁶² The chief medical officer for the Nepalese smallpox eradication program oversaw a centrally organized program staffed by His Majesty’s Government in fifty of the kingdom’s seventy-five districts.⁶³ Dr. Purushottam Narayan Shrestha worried about the bordering state of Uttar Pradesh in north-eastern India, since it was the source of smallpox outbreaks that episodically injected smallpox into Nepal, despite local eradication efforts.⁶⁴ Northern India shares the remote and difficult terrain of the Himalayan Mountains and some plains areas with the country of Nepal and also shares western borders with what was then

⁶⁰ Marglin, “Smallpox in Two Systems” (ref. 38), 20; Purushottam Narayan Shrestha, *Smallpox Eradication in Nepal* (Geneva, Switzerland: World Health Organization, 1978); Marasini, “Health and Hospital Development in Nepal: Past and Present,” *Journal of Nepal Medical Association* 42 (2003): 306–11.

⁶¹ See Rondinelli and Cheema, “Implementing Decentralization Policies” (ref. 29); Fenner et al., “India and the Himalayan Area” (ref. 37).

⁶² Fenner et al., “India and the Himalayan Area” (ref. 37); Shrestha, “Smallpox Eradication in Nepal” (ref. 60); WHO and Litsios, *The Third Ten Years* (ref. 43), 178

⁶³ Shrestha, “Smallpox Eradication in Nepal” (ref. 60).

⁶⁴ P. N. Shrestha, “History of Smallpox,” *Journal of Nepal Medical Association* 10, no. 2 (1972): 107–11.

West Pakistan, and northeastern borders with China and East Pakistan (the territory which became the independent nation of Bangladesh after civil war and succession in 1971).

East Pakistan suffered from a hurricane that brought a recently credentialed US internist, Dr. Lawrence B. Brilliant, to South Asia to fight smallpox and later blindness. In 1970, Dr. Brilliant, together with his friends from the Hog Farm entertainment activist commune in Berkeley, California, purchased a bus and used it to travel from Germany to support relief efforts for the Bhola typhoon (tropical cyclone) that had hit East Pakistan killing hundreds of thousands of people.⁶⁵ They worked on relief efforts in East Pakistan until leaving due to the civil war with West Pakistan.

Dr. Brilliant and his friends then moved to northern India and stayed at an ashram to learn from a spiritual guru named Neem Karoli Baba. This guru convinced him to present himself to the WHO SEARO office to tackle the problem of smallpox.⁶⁶ With her past experience in smallpox eradication in West Africa, Dr. Nicole Grasset was appointed the WHO South-East Asia Regional Office adviser for the WHO Smallpox Eradication unit in India in 1971.⁶⁷ She then hired Dr. Brilliant, who became one of the first WHO medical officers to work on smallpox eradication in India in 1972.⁶⁸ Nearby in East Pakistan, and later Iran, another

⁶⁵ Harriett Rubin. “Dr. Brilliant vs. the Devil of Ambition,” *Fast Company*, September 30, 2000, accessed February 1, 2012, <http://www.fastcompany.com/41704/dr-brilliant-vs-devil-ambition>; see Elliot Marseille, “Intraocular Lenses, Blindness Control, and the Hiding Hand,” in *Rethinking the Development Experience: Essays Provoked by the Work of Albert O. Hirschman*, ed. Lloyd Rodwin and Donald A. Schön (Washington, DC: Brookings Institution; Lincoln Institute of Land Policy, 1994), 147–75, on 155.

⁶⁶ Rubin, “Devil of Ambition” (ref. 65); Marseille, “Intraocular Lenses” (ref. 65), 156

⁶⁷ Fenner et al., “India and the Himalayan Area” (ref. 37).

⁶⁸ WHO “Smallpox” (ref. 52).

internist and future ophthalmologist, Dr. Alfred Sommer, worked for the US CDC Epidemiology Intelligence Service on the epidemiology of smallpox and other infectious diseases.⁶⁹ Dr. Henderson in West Africa in the 1960s, Dr. Sommer in Iran and East Pakistan in the 1970s, and likely Dr. Brilliant in India in the 1970s had a strong desire to serve the public, but not as part of the US military draft for the Vietnam War (1945–1975).⁷⁰

Dr. Brilliant was soon working with WHO SEARO in a big push to end smallpox in India that lasted two years from 1973 to 1975. In June 1973, smallpox remained endemic in only five (primarily South Asian) countries: India, Nepal, Bangladesh, Pakistan, and Ethiopia.⁷¹ That summer WHO SEARO staff worked with Indian health personnel to create a detection and containment strategy applied village-by-village in ten-day increments.⁷² In letters between Dr. Henderson working in Geneva and Dr. Brilliant working in India, it became clear that the WHO approach to eradicating smallpox had to change in order to be successful in India.⁷³ The technical strategy was failing to account for local contexts and, in some cases, local resistance to

⁶⁹ Alfred Sommer and Daniel M. Albert, “Conversation Between Alfred Sommer, MD MHS and Daniel M. Albert, MD Chicago, IL,” The Foundation of the American Academy of Ophthalmology Museum of Vision & Ophthalmic Heritage, 2010.

⁷⁰ Reinhardt, “Global Great Society” (ref. 46); Sommer and Albert, “Conversation” (ref. 69); Marseille, “Intraocular Lenses” (ref. 65), 157.

⁷¹ Fenner et al., “India and the Himalayan Area” (ref. 37), 713.

⁷² WHO and Litsios, *The Third Ten Years* (ref. 43), 179.

⁷³ Bhattacharya and Dasgupta, “Tale of Two Global Health Programs” (ref. 59).

vaccination by patients, and local resistance to implementation of the detection and containment strategy by state officials.⁷⁴

[INSERT FIGURE 1]

Rededication of India's central government, combined with short-term, flexible, and decentralized labor used by the WHO smallpox eradication program in both India and Nepal, helped to re-concentrate resources in order to eradicate smallpox. International news reporters covering India's peaceful nuclear explosion/test of May 18, 1974, also covered the smallpox endemic to India and the recent outbreak that had exploded with thousands of cases in the northeastern state of Bihar.⁷⁵ In June 1974, Prime Minister Gandhi's administration agreed to centrally coordinate India's smallpox eradication program at the recommendation of the WHO. This funneled funds from WHO to a centrally organized bureaucratic structure that could hire local personnel that would focus on smallpox eradication only. The new structure relieved some of Dr. Grasset's frustrations with the caginess she had previously encountered from local officials with a mandate to help her, but no money, personnel, or political interest to do so.⁷⁶

The WHO smallpox eradication program deployed short-term, flexible, decentralized labor across the Republic of India. WHO SEARO negotiated with state and central authorities to use the extensive labor pool available in each state to conduct their surveillance and containment

⁷⁴ Sanjoy Bhattacharya, "Uncertain Advances," *American Journal of Public Health* 94, no. 11 (2004): 1875–83; Bhattacharya and Dasgupta, "Tale of Two Global Health Programs" (ref. 59).

⁷⁵ Itty Abraham, *Making of the Indian Atomic Bomb: Science, Secrecy and the Postcolonial State* (New York: Zed Books, 1998); Fenner et al., "India and the Himalayan Area" (ref. 37), 769–70.

⁷⁶ Bhattacharya, "Uncertain Advances" (ref. 74), 1880.

strategy to eliminate the smallpox.⁷⁷ In particular, the Bihar Military Police offered a disciplined source of labor for the new strategy agreed upon by WHO SEARO, the central Indian government, and the Bihar state government.⁷⁸ In January 1975, having determined a revised surveillance and containment strategy that focused on door-to-door house calls instead of village-by-village searches, “Operation Smallpox Zero” began.⁷⁹ Dr. Brilliant later recalled that eradicating smallpox in India required 100,000 Indian army soldiers making two billion house calls over two years from 1973 to 1975.⁸⁰

Not only did WHO SEARO adapt to India with these new strategies, the joint teams of international and Indian employees also had to adapt to each other, and to the differing political-economic, bio-physical, and psycho-social contexts present in each state within India and district within Nepal. The WHO SEARO staff worked in teams with permanent staff from the Indian government. Together they also hired many temporary staff that they found locally in the communities where they conducted the vaccinations; these staff were offered short-term employment contracts and were relied upon by the WHO SEARO team members to help them navigate local bureaucracy and negotiate local condemnation of vaccination.⁸¹

In one example, US Peace Corps volunteers found that Nepalese people, of Gurung ethnicity, were already familiar with vaccination. This familiarity came in part because of the

⁷⁷ Bhattacharya and Dasgupta, “Tale of Two Global Health Programs” (ref. 59).

⁷⁸ Fenner et al., “India and the Himalayan Area” (ref. 37); Bhattacharya, “Uncertain Advances” (ref. 74), 1881.

⁷⁹ WHO and Litsios, *The Third Ten Years* (ref. 43).

⁸⁰ Rubin, “Devil of Ambition” (ref. 65).

⁸¹ Bhattacharya and Dasgupta, “Tale of Two Global Health Programs” (ref. 59), 1176, 1178.

Gurung villagers' reverence for Shitala Mata, the Hindu goddess of smallpox, and the relationship between worshipping the goddess and an older, non-Western, practice of variolation to build immunity to smallpox. It may also have been partly because many of the village elders were former Gurkha soldiers in the British military during World War I and World War II, and thus were already familiar with modern Western medicine. The group of Peace Corps volunteers worked in Lamjung District northwest of Kathmandu, but found that Gurung villagers were more likely to cooperate with the vaccination program if the volunteers acceded to wait, as honored guests, for the most auspicious time to begin vaccination.⁸²

Additionally, "Brilliant's co-workers searched schools and markets as well as Shitala Mata temples. People entering the temple to make an offering to Shitala Mata, the [Hindu] [g]oddess of smallpox, were followed back to their houses where his co-workers often found people with smallpox."⁸³ Despite the insistence of British India that such worship was superstition, and would end with modern public health vaccination programs, worship of Shitala Mata continued concurrent with vaccination. As those patients with smallpox were traditionally sequestered while the immediate family members did not accept visitors,⁸⁴ following a Shitala Mata devotee back home was one avenue of finding smallpox patients. For the smallpox eradication program to be successful, South Asian public health professionals and WHO SEARO staff had to use leaflets dropped from airplanes, cash incentives, and local vaccinators, and they

⁸² Don Messerschmidt, "The Scourge of Smallpox: Nepal 1964," *ECSNEPAL - The Nepali Way*, July 9, 2010, <http://ecs.com.np/features/the-scourge-of-smallpox-nepal-1964>.

⁸³ WHO "Smallpox" (ref. 52), 14.

⁸⁴ Marglin, "Smallpox in Two Systems of Knowledge" (ref. 38).

had to leave superior attitudes about modern Western scientific knowledge behind to better show respect for their Hindu patients who engaged in Shitala worship.⁸⁵

On May 24, 1975, the last Indian patient with smallpox was identified as having contracted the disease in East Pakistan. Finally, in August 1975, India celebrated smallpox eradication along with Indian Independence Day.⁸⁶ With this celebration, the cycle of infection from India and Nepal was ended, and Nepal could soon follow by reporting the last case on April 6, 1975, and the official eradication on April 13, 1977.⁸⁷

The very last natural case of smallpox in the world was found in Ethiopia on October 26, 1977.⁸⁸ Starting out with 10–15 million smallpox cases occurring annually in thirty-one endemic countries in 1967, there were no known cases of smallpox in 1978 or 1979. The World Health Assembly officially proclaimed, on May 8, 1980, that smallpox was successfully eradicated.⁸⁹ It took twelve years and \$98 million of combined international assistance, only 35% of which came from the WHO regular budget, with the rest coming from other contributions. Any remaining strands of smallpox, or the smallpox vaccine, can now be found in collaborating laboratories in Geneva, Atlanta, or Moscow.⁹⁰

⁸⁵ Marglin, “Smallpox in Two Systems” (ref. 38); Shrestha, “Smallpox Eradication in Nepal” (ref. 60).

⁸⁶ Fenner et al., “India and the Himalayan Area” (ref. 37), 788

⁸⁷ Shrestha, “Smallpox Eradication in Nepal” (ref. 60).

⁸⁸ WHO and Litsios, *The Third Ten Years* (ref. 43).

⁸⁹ Henderson, “Eradication” (ref. 44).

⁹⁰ WHO and Litsios, *The Third Ten Years* (ref. 43).

WHO Delegates Blindness Programs to IAPB, 1975 Onwards

The global eradication of smallpox created a climate of optimism in which medical professionals involved in “rural” and “public health” ophthalmology felt confident to propose a program to eradicate blindness. These professionals worked through various NGOs. International NGOs have been around since the 1920s; however, they have not been perceived to have influence in the WHO. For example, the League of Red Cross Societies and the Rockefeller Foundation, in addition to PASB, are well known to have been involved with the initial formation of the WHO in 1946 as observers to the International Health Conference.⁹¹ The precursor to IAPB, the International Association for the Prevention of Blindness (founded in Hague in 1929), also pre-existed the WHO, and has been a collaborator since the WHO’s founding.⁹² However, the general belief is that the WHO is more responsive to member-states and other multi-lateral organizations like the World Trade Federation and the World Bank than it is to the influence of NGOs or private corporations.⁹³

This belief deserves scrutiny since, from the beginning, the WHO’s constitution recognized nongovernmental organizations as authoritative, with the capability to assume the delivery of public health goods and services, and as amenable to coordination with a national government, or multi-lateral organization. In the 1948 and 2006 copies of the WHO constitution,

⁹¹ Steve Charnovitz, “Two Centuries of Participation: NGOs and International Governance,” *Michigan Journal of International Law* 18, no. 2 (1997): 183–286.

⁹² World Health Organization Office of External Coordination, “Directory.”

⁹³ Richard Dodgson, Kelley Lee, and Nick Drager, “Global Health Governance: A Conceptual Review,” Discussion Paper, World Health Organization, Dept of Health and Development, Geneva, February 2002, <http://www.who.int/iris/handle/10665/68934>.

nongovernmental organizations are mentioned in article 18 (their rights and responsibilities in the world health assembly) and article 71 (cooperating and coordinating with the WHO). Also, article 33 of the WHO constitution discusses how the director-general can directly connect with a national health program's operating NGOs.⁹⁴

The WHO constitution, therefore, has helped to perpetuate decentralized health care programs. There are two ways to think about decentralization at the WHO: deconcentration and delegation. Deconcentration, or the movement of decision making and management authority from central to peripheral government agencies, was part of the initial regional structure of the WHO. This was true at the time of the founding of the WHO in 1946, and ratification of the constitution by member-states in 1948. This continued to be the case over time as the historical contingencies of the WHO's founding as a regionalized organization made its administrative design unique among UN organizations.

Delegation, or the movement of decision-making and management authority from central government agencies to parastatal organizations such as public corporations or regulatory commissions, increased over time at the WHO; this is demonstrated through the differences between the earlier WHO smallpox eradication program and later WHO collaboration with IAPB to create programs for eradicating blindness. The WHO took a vertical, command and control approach to their program designs for malaria and also, to a lesser degree, for smallpox. Although individual regional organizations took the lead, the overall mandate came top down from the World Health Assembly executive committee. The reverse was true for the program to eradicate blindness. In WHO, this program arose as a direct result of the optimism of eradicating smallpox in South Asia. The WHO prevention of blindness program and the IAPB co-

⁹⁴ International Health Conference, "WHO Constitution" (ref. 26); WHO, "WHO Constitution" (ref. 26).

constructed each other;⁹⁵ the WHO directed the administrative structure of IAPB as an organization, while IAPB had opportunities in advisory groups, consultation groups, and co-coordinated meetings to shape WHO policies to address blindness. Over time, the WHO delegated even more authority to the international NGO IAPB, which became multilateral. Director-General Candau planned this, and the WHO constitution long accounted for it. The regions of IAPB exactly mirror the WHO regions, except that the region of the Americas in the WHO has been split into Latin America and North America for the IAPB. Before the WHO launched any blindness eradication programs, John F. Wilson began his many years-long mentorship of Indian ophthalmologist Dr. Govindappa Venkataswamy. They met in 1965 while both were attending an ophthalmology meeting on rehabilitating the blind in New York City.⁹⁶ This began a decades-long friendship.

Wilson was a blind British lawyer with a high degree of prestige and status among ophthalmologists and public health professionals in Britain and worldwide. The son of a minister, he was not born blind, but suffered from chemical burns in a school laboratory when he was twelve years of age.⁹⁷ Before meeting Dr. Venkataswamy, Wilson had long been active in member associations for the blind, including the World Council for the Welfare of the Blind. He

⁹⁵ Raj, “Introduction” (ref. 11); Peter Taylor, “Co-Construction and Process: A Response to Sismondo’s Classification of Constructivisms,” *Social Studies of Science* 25, no. 2 (1995): 348–59.

⁹⁶ Sankaran Manikutty and Neharika Vohra, *Aravind Eye Care System: Giving Them the Most Precious Gift* (Ahmedabad, India: Indian Institute of Management, 2004).

⁹⁷ Douglas Martin, “J. F. Wilson, 80, Whose Work Saved Millions from Blindness,” *New York Times*, December 6, 1999, <http://www.nytimes.com/1999/12/06/world/jf-wilson-80-whose-work-saved-millions-from-blindness.html>; Pavithra Mehta and Suchitra Shenoy, *Infinite Vision: How Aravind Became the World’s Greatest Business Case for Compassion* (San Francisco: Berrett-Koehler, 2011), 57–66.

also acted as the founder and long-term director of the UK-based Royal Commonwealth Society for the Blind (now called Sight Savers International).⁹⁸ The Royal Commonwealth Society for the Blind performed considerable work in Africa and India in the 1950s and 1960s to address infectious trachoma and therefore, was well thought of by ophthalmologists working in the arena of public health.

During this same time period, Dr. Venkataswamy was an ophthalmologist of high status in southern India. He was responsible, in 1956, for heading an ophthalmology department in a government hospital and, in 1961, for implementing community-based eye health outreach in the southern state of Tamil Nadu.⁹⁹ Dr. Venkataswamy had significant achievements—especially considering he suffered pain from rheumatoid arthritis since the beginning of his medical career before Indian independence. Despite his accomplishments, he sometimes felt unconfident because of his caste and race.¹⁰⁰ Before Wilson met Dr. Venkataswamy, the latter already presided over “the growing network of eye camps all over Tamil Nadu and had developed a network of friends and well-wishers across India who empathized with his passion for providing good quality affordable eye care.”¹⁰¹

[INSERT FIGURE 2]

⁹⁸ Mehta and Shenoy, *Infinite Vision* (ref. 97), 57–66.

⁹⁹ Mehta and Shenoy, *Infinite Vision* (ref. 97), 61–62.

¹⁰⁰ Manikutty and Vohra, *Aravind* (ref. 96); Mehta and Shenoy, *Infinite Vision* (ref. 97), 64; Govindappa Venkataswamy, “Spiritual Consciousness and Healing: An Interview with Govindappa Venkataswamy.” By Missy Daniel. *Second Opinion*, 18, no.1 (1992): 68–81.

¹⁰¹ Manikutty and Vohra, *Aravind* (ref. 96), 3.

In addition to Dr. Venkataswamy and Wilson, the WHO was beginning to recognize blindness as a severe threat to global health. A report published by the WHO in 1966 described sixty-five different definitions of blindness, as defined by various member-states. At the 22nd World Health Assembly in 1969, resolution WHA 22.29 requested the WHO-Director General:

1. To undertake a study on the information which is at present available on the extent and all causes of preventable and curable blindness and to propose activities in this field which the Organization would carry out within its programme of work; and
2. To collaborate, as may be required, with other organizations having an interest in this domain, including certain non-governmental organizations in relation with WHO.¹⁰²

This interest in collaboration with nongovernmental organizations was not as distinctive as it seems. A wide variety of resolutions of the World Health Assembly frequently urged that the WHO coordinate with non-governmental organizations around key programmatic areas.¹⁰³ Over

¹⁰² 22nd World Health Assembly, *Draft Second Report of the Committee on Programme and Budget*, A22/P&B/21, WHA22 (Geneva, Switzerland: World Health Organization, 1969), 2, <http://apps.who.int/iris/handle/10665/144305>.

¹⁰³ 1st World Health Assembly, *First World Health Assembly, Geneva 24 June to 24 July 1948: Plenary Meetings: Verbatim Records: Main Committees: Summary of Resolutions and Decisions* (Geneva, Switzerland: World Health Organization, 1948), <http://www.who.int/iris/handle/10665/85592>; 25th World Health Assembly, *Twenty-Fifth World Health Assembly, Geneva, 9–26 May 1972: Part I: Resolutions and Decisions: Annexes* (Geneva, Switzerland: World Health Organization, 1972), <http://www.who.int/iris/handle/10665/85850>; 28th World Health Assembly, *Twenty-Eighth World Health Assembly, Geneva, 13–30 May 1975: Part I: Resolutions and Decisions: Annexes* (Geneva, Switzerland:

time, the WHO has coordinated many programs with NGOs,¹⁰⁴ while decreasing the number of staff in Geneva and maintaining the number of staff in regional offices.¹⁰⁵

Meanwhile, Wilson was trying to refocus Dr. Venkataswamy from working regionally in Tamil Nadu, to eliminate blindness nationally in all of India. When Dr. Venkataswamy recounted his friendship with Wilson for his grandniece's video *Infinite Vision*, he remembered fondly how John was not intimidated by anyone and took him around "here and there." In a quote, excerpted in his grandniece's book of the same name, he says

You see, as an eye doctor, I was not thinking of a national programme or a global programme.... I just wanted to be a good doctor and operate on the people who came to me—whoever I could reach.... John saw I was working with the community, he thought, "Now here is a fellow who can be gradually molded to work at the national or international level."¹⁰⁶

World Health Organization, 1975), <http://www.who.int/iris/handle/10665/86022>; 31st World Health Assembly, *Thirty-First World Health Assembly, Geneva, 8–24 May 1978: Part I: Resolutions and Decisions: Annexes* (Geneva, Switzerland: World Health Organization, 1978), <http://www.who.int/iris/handle/10665/86043>.

¹⁰⁴ World Health Organization Office of External Coordination, *Directory of Nongovernmental Organizations in Official Relations with the World Health Organization* (Geneva, Switzerland: World Health Organization, 1990), <http://www.who.int/iris/handle/10665/59634>.

¹⁰⁵ For example, in 1967, two-thirds of WHO staff were based in six regional offices, and this decreased slightly to 60 percent of staff in 1993. See Siddiqi, "Attempts to Build" (ref. 20), 55.

¹⁰⁶ Pavithra Krishnan, "Infinite Vision: Dr. Govindappa Venkataswamy," 2004, Aravind Eye Care System, accessed June 1, 2012, <http://www.aravind.org/ivision/menupage1000.htm>; Mehta and Shenoy, *Infinite Vision* (ref. 97), 64.

Dr. Venkataswamy indicates in the quote above that mentorship from Wilson, including the social networks that Wilson brought him into, expanded his self-confidence that what he was doing in Tamil Nadu was valuable across all of India and perhaps around the world as well. In 1969, the Royal Commonwealth Society for the Blind began the “Eyes of India” campaign, which Wilson credited with leading to: (1) new procedures for treating blindness on a large scale in the rural areas of India, and (2) influencing the Indian government’s Indian National Programme to fight blindness.¹⁰⁷

The WHO was still gathering data from member-states about the causes of blindness in 1970. As part of fulfilling his duties after resolution WHA 22.29, the WHO director general sent a questionnaire to all of the member countries, soliciting information on the state of blindness within each country in March 1970—just two months before the 23rd World Health Assembly.¹⁰⁸ Two years later, he reported his results: there were, at minimum, 8.5 million people confirmed with blindness in forty-one countries around the world; this was on the same order of magnitude as previous estimates of 10 million people with blindness worldwide.¹⁰⁹ In his report to the 25th World Health Assembly in provisional agenda item 2.6, Dr. Candau argued that infectious causes of blindness had decreased over time and diseases such as smallpox no longer contributed to the causes of blindness at the same high level that they did in 1943 when the first data on blindness and its causes worldwide was recorded.¹¹⁰ Throughout the report he acknowledged the role of UNICEF in assisting the WHO to address trachoma in Asia, Africa and

¹⁰⁷ Wilson, “Preventing Blindness” (ref. 8), 3.

¹⁰⁸ 25th World Health Assembly and Candau, “Report by the Director-General” (ref. 34).

¹⁰⁹ 25th World Health Assembly and Candau, “Report by the Director-General” (ref. 34), 5.

¹¹⁰ 25th World Health Assembly and Candau, “Report by the Director-General” (ref. 34), 5, 13.

Europe, as well as the importance of non-profit non-governmental organizations such as the Royal Commonwealth Society for the Blind in fighting infectious causes of blindness such as onchocerciasis in former British colonies in Asia and Africa. However, in this report the Director-General expressed the desire to move away from the WHO's work on understanding disease etiology (origins and causes) to future work on disease prevention and cures.

With the many different national definitions of blindness, further standardization and clarity of technical details of preventing and curing blindness was required.¹¹¹ Therefore, Dr. Candau proposed that a Study Group on the Prevention of Blindness was necessary to provide more detailed technical information to inform the need for a comprehensive “public health ophthalmology” program.¹¹² The Director-General also suggested that, “Collaboration with other international bodies such as UNICEF, ILO, FAO, and UNESCO and with non-governmental organizations should be intensified in order to encourage the development and co-ordination activities dealing with the curative and rehabilitation aspects, in addition to prevention.”¹¹³ Thus, the director general ended his report by suggesting that more collaboration was necessary with organizations such as UNICEF that are inside the United Nations as well as external non-governmental organizations outside of the United Nations.

The Indian delegation to the 25th World Health Assembly in 1972 then proposed that WHO intensify technical assistance and educational assistance to member-states to support national programs to prevent blindness and medical education for ophthalmologists. The secretariat of the WHO and the Government of India (with the support of the third Prime

¹¹¹ 25th World Health Assembly and Candau, “Report by the Director-General” (ref. 34), 5.

¹¹² 25th World Health Assembly and Candau, “Report by the Director-General” (ref. 34), 1, 16.

¹¹³ 25th World Health Assembly and Candau, “Report by the Director-General” (ref. 34), 16.

Minister of India, Indira Gandhi) drafted resolution WHA 25.55, which the assembly unanimously approved.¹¹⁴

Although the global program to eradicate blindness was proposed and the idea circulated worldwide at the 25th World Health Assembly in May 1972, some believe the idea first originated in Israel in the 1960s.¹¹⁵ Israeli professor Isaac Michaelson convened a scientific meeting on blindness prevention in Jerusalem in 1971.¹¹⁶ In August, just a few months after WHA 25.55 was proposed, a special issue of the *Israel Journal of Medical Sciences* on “public health ophthalmology” was published. The special issue promoted the idea of a global program to eradicate blindness and featured an article by Dr. Venkataswamy, among other ophthalmologists from around the world.¹¹⁷ At the time, India had a population of approximately 548 million people, with approximately 42 million people living in Dr. Venkataswamy’s home state of Tamil Nadu and most of the population in central India.¹¹⁸

A few months later, in November 1972, approximately twenty-four people met at the WHO in Geneva to convene the study group on preventing and curing the problem of blindness.

¹¹⁴ Carl Kupfer and Edward H. McManus, *History of the National Eye Institute: 1968–2000* (Bethesda, MD: National Institutes of Health National Eye Institute, 2009), 164; 25th World Health Assembly, *Resolutions and Decisions* (ref. 103).

¹¹⁵ Wilson, “Preventing Blindness” (ref. 8). 3.

¹¹⁶ IAPB, “IAPB History,” 2016, <http://www.iapb.org/about-iapb/iapb-history>.

¹¹⁷ Wilson, “Preventing Blindness” (ref. 8); Venkataswamy, “Community Ophthalmology,” in IAPB, 3rd General Assembly, GVERI. (ref. 8)

¹¹⁸ Fenner et al., “India and the Himalayan Area” (ref. 37).

The study group included leaders in public health ophthalmology from around the world.¹¹⁹ Among the Study Group members were Dr. A. E. Maumenee of the Wilmer Eye Institute at Johns Hopkins Hospital in Maryland and Dr. G. Venkataswamy a professor of ophthalmology at Madurai Medical College in India. Dr. W. J. Holmes (US) attended as a representative of the International Association for the Prevention of Blindness. Wilson represented both the Royal Commonwealth Society for the Blind and the World Council for the Welfare of the Blind as a member of the Study Group secretariat.¹²⁰ Therefore, the idea of a global program to eradicate blindness was taken up worldwide in 1972 at the World Health Assembly, in scientific journals, and among non-profit non-governmental organizations around the world.

Of the many diseases that cause blindness, this study group identified cataract disease as a target for an international program, saying that such a program would likely have a “massive impact in the countries concerned” because treatment for cataract disease, in the form of cataract surgery, was advanced enough to be practical and justifiable at a large scale.¹²¹ The study group also advocated for the creation of an international coordinating body for blindness in addition to national ophthalmic health services.¹²²

¹¹⁹ The Indian government recognized Dr. Venkataswamy for his work fighting avoidable blindness with the Padma Sri award in 1973. See Mehta and Shenoy, *Infinite Vision* (ref. 97). John F. Wilson received the title “Sir” when he was knighted in England in 1975. See Martin, “J. F. Wilson” (ref. 97).

¹²⁰ World Health Organization, “The Prevention of Blindness: Report of a WHO Study Group,” WHO Technical Report Series 518, http://apps.who.int/iris/bitstream/10665/38222/1/WHO_TRS_518_eng.pdf.

¹²¹ WHO, “Prevention of Blindness” (ref. 120).

¹²² WHO, “Prevention of Blindness” (ref. 120).

Dr. Marcelino G. Candau retired from the WHO in July 1973 after twenty years shaping the organization as its second and longest-serving director general.¹²³ The new director general, Dr. Halfdan Mahler (Denmark), participated in the WHO SEARO meeting in New Delhi shortly after his inauguration and was lauded by the various national representatives to the Regional Committee for his decision to participate in their 25th anniversary celebration.¹²⁴ At the 25th anniversary meeting, the regional director of WHO SEARO, Dr. V. T. Herat Gunaratne (Sri Lanka), commented on the office's status as the first regional office ratified by member-states at the WHA. He also praised the progress of the South-East Asia Region toward eliminating smallpox and becoming more self-reliant and self-sufficient in biomedical laboratory analysis and vaccine production after twenty-five years. Dr. Mahler's remarks were less congratulatory. He reflected that the world was watching what a regionally concentrated organization, such as the WHO, would do with the resources the member-states had provided. Dr. Mahler cautioned that the smallpox eradication program could make or break the WHO as a functional organization. Then he requested that WHO SEARO escalate their smallpox efforts because they had "the biggest share of the work to accomplish" with 88% of the world's cases. The speeches from other WHO SEARO officials, other UN organization officials, and representatives from NGOs and member-states continued through the anniversary celebration. Only one member-state, Indonesia, spoke publically about their concern for blindness as part of an array of

¹²³ 26th World Health Assembly, "Dr M. G. Candau, Director-General Emeritus," WHA26, 1973.

<http://www.who.int/iris/handle/10665/92035>.

¹²⁴ WHO Regional Office for South-East Asia, "25th Anniversary" (ref. 36).

problems WHO SEARO should focus on addressing the next twenty-five years. Indonesia's agenda did not include smallpox, since they had already eradicated it.¹²⁵

Dr. Mahler also participated in the private regional meeting. Considering that his public speech focused on the troubling elements of WHO's regional structure, his request that WHO be considered a coordinating instead of implementing partner was met with more skepticism. The alternate representative from Indonesia, Dr. Peter Patta Sumbung (Chief of Bureau for Special Affairs, Department of Health, Jakarta), reflected on the decentralized structure of the WHO and asked the new Director-General if there were any criteria for why certain projects were administered by headquarters in Geneva, while other projects were administered by the regional offices. Yet Dr. Sumbung was supportive of Dr. Mahler's idea of making WHO health services contextually based in local needs.

Overall, a large concern at this meeting was how the regional member-states would eradicate blindness. The representative from Nepal, Dr. G. S. L. Das (Deputy Director General, Ministry of Health, Kathmandu), asked what was being done about blindness due to xerophthalmia (nutritional deficiency of Vitamin A) and cataract since both were prevalent in SEARO. The response from the Regional Director, Dr. V. T. H. Gunaratne, indicated that WHO SEARO had hired a consultant to further investigate the magnitude of blindness in SEARO.¹²⁶

¹²⁵ WHO Regional Office for South-East Asia, "25th Anniversary" (ref. 36); Henderson, "Dispelling the Myths" (ref. 47).

¹²⁶ World Health Organization Regional Office for South-East Asia, Twenty-Sixth Session, *Report and Minutes of the Twenty-Sixth Session of the WHO Regional Committee for South-East Asia, New Delhi, 18–24 September, 1973* (New Delhi, India: World Health Organization, Regional Office for South-East Asia., November 1973), 54–57.

Based on this meeting, Dr. Mahler noted in his annual report that, in 1973, a few of the eleven member-states within the WHO South-East Asia Region seemed to be progressively more interested in consulting, advising, and training services from the WHO in order to prevent blindness and restore sight due to cataract and glaucoma. He commented in particular that WHO conducted “A preliminary assessment of the needs and resources in Bangladesh, Burma and India” to fight blindness in November 1973.¹²⁷ Blindness surveys were also designed or conducted in the Eastern Mediterranean Region and the European Region with the help of consultants from the WHO.¹²⁸ These preliminary assessments were later expanded to Nigeria (1974) and Guatemala (1975).¹²⁹

By the end of 1973, the WHO executive board had already established official relations with non-profit, nongovernmental member associations related to blindness and ophthalmology including the International Association for Prevention of Blindness, the International Federation of Ophthalmological Societies, the International Organization against Trachoma, and the World

¹²⁷ World Health Organization and Halfdan Mahler, *The Work of WHO, 1973: Annual Report of the Director-General to the World Health Assembly and to the United Nations*, Official Records of the World Health Organization 213 (Geneva: World Health Organization, 1974), 33,

<http://apps.who.int/iris/handle/10665/85868>; *The Work of WHO, 1974: Annual Report of the Director-General to the World Health Assembly and to the United Nations*, Official Records of the World Health Organization 221 (Geneva: World Health Organization, 1975), 73,

<http://www.who.int/iris/handle/10665/85882>.

¹²⁸ WHO and Mahler, *Work of WHO, 1973* (ref. 127), 33.

¹²⁹ WHO and Mahler, *Work of WHO, 1974* (ref. 127), 73; WHO and Litsios, *The Third Ten Years* (ref. 43), 297.

Council for the Welfare of the Blind.¹³⁰ The director general specifically noted that, “[c]ontacts with nongovernmental organizations were intensified during the year” as a deliberate act by the WHO to both provide and receive technical assistance and support as concerned the problem of blindness.¹³¹

With a push from Dr. Mahler, in October 1974, members of the International Association for the Prevention of Blindness Executive Committee finalized the constitution of the newly restructured and renamed International Agency for the Prevention of Blindness (IAPB) while attending the American Academy of Ophthalmology and Otolaryngology meeting in Dallas, Texas.¹³² On January 1, 1975, the World Blind Union and the International Council of Ophthalmology joined together in turn with individual ophthalmologists and representatives of other member associations related to the problem of blindness. Together they formed the new International Agency for the Prevention of Blindness (which succeeded the preexisting International Association for the Prevention of Blindness).

Importantly, the restructured IAPB was founded by organizations, not just individuals. The IAPB was started by premiere ophthalmologists from developing and industrialized nations and they elected Sir John Wilson their first president. The IAPB is unique because, from the beginning, its executive board was composed of leading nongovernmental agencies advocating for blind people, leading nongovernmental agencies advocating for the prevention of blindness, individual medical professionals with unique and specialized expertise (epidemiology and

¹³⁰ WHO and Mahler, *The Work of WHO, 1973* (ref. 127), 33, 317.

¹³¹ WHO and Mahler, *The Work of WHO, 1973* (ref. 127), 33.

¹³² WHO and Mahler, *The Work of WHO, 1973* (ref. 127), 73; WHO and Litsios, *The Third Ten Years* (ref. 43), 209; IAPB, “IAPB Constitution” (ref. 7).

virology in addition to the sub-specialties of ophthalmology), and officials from the WHO.¹³³

Dr. Mahler believed that the IAPB, as the new collaborating NGO for the WHO Prevention of Blindness program, would enable an expansion of the work of the program.¹³⁴ The purpose of the IAPB is to eradicate blindness through a global program “with an emphasis on underserved communities.”¹³⁵ In the IAPB Constitution, article II function “a” is specifically related to the coordinating role of IAPB with the United Nations.¹³⁶

Sometime before the 28th World Health Assembly, a visit by Sir John F. Wilson and Dr. Venkataswamy to “the ministry” ended up becoming a request that Prime Minister Indira Gandhi provide support for a national organization to control blindness.¹³⁷ A survey by the Indian government in 1974 had indicated that the prevalence of avoidable blindness was 1.38% of the population.¹³⁸ Therefore, a centralized program was considered necessary by the Prime Minister.

In May 1975, Wilson, in his new role as President of IAPB, presented his plea before the 28th World Health Assembly first technical committee A that the WHO coordinate national

¹³³ IAPB, *International Agency for the Prevention of Blindness 2nd General Assembly, New Horizons, Washington, DC October 24-28, 1982* (Washington, DC: International Agency for the Prevention of Blindness, 1982), GVERI Box ORG-20; IAPB, “IAPB Constitution” (ref. 7).

¹³⁴ WHO and Mahler, *The Work of WHO, 1974* (ref. 127), 73

¹³⁵ IAPB, “IAPB Constitution” (ref. 7), 1.

¹³⁶ IAPB, “IAPB Constitution” (ref. 7), 1.

¹³⁷ Krishnan, “Infinite Vision” (ref. 106); Manikutty and Vohra, *Aravind* (ref. 96); Mehta and Shenoy, *Infinite Vision* (ref. 97), 57–66.

¹³⁸ Planning Commission, “Annual Plan 2003-04-: Chapter 4 Human and Social Development,” in *Annual Five Year Plans* (New Delhi, India: Government of India, 2002),

http://planningcommission.nic.in/plans/annualplan/ap0304pdf/ap0304_ch4.pdf.

programs to prevent blindness.¹³⁹ His request was made more convincing by his revelation that the IAPB had already coordinated thirty national committees to work on the issue of blindness.¹⁴⁰ The World Health Assembly plenary subsequently approved resolution WHA 28.54, which requested director general Mahler to continue and expand efforts to fight blindness, and to work with member-states to set up national programs “especially aimed at the control of trachoma, xerophthalmia, onchocerciasis and other causes and to introduce adequate measures for the early detection and treatment of other potentially blinding conditions such as cataract and glaucoma,” and also continue to work with nongovernmental organizations on funding and other resources.¹⁴¹ This resolution formed the basis for creating the new technical cooperation program.¹⁴²

¹³⁹ Such technical committees debate important technical, financial and management details and propose resolutions which are later voted on at the plenary meeting. See World Health Organization, “WHO | How the World Health Assembly Works,” WHO, March 2, 2018, http://www.who.int/mediacentre/events/governance/wha/how_wha_works/en/ and WHO Regional Office for South-East Asia, *Report and Minutes of the Twenty-Eighth* (ref. 8), 94.

¹⁴⁰ World Health Organization and Halfdan Mahler, *The Work of WHO, 1975: Annual Report of the Director-General to the World Health Assembly and to the United Nations*. Official Records of the World Health Organization 229 (Geneva: World Health Organization, 1976), <http://www.who.int/iris/handle/10665/86025>.

¹⁴¹ Kupfer and McManus, *History of the National Eye Institute* (ref. 114), 164; 28th World Health Assembly, *Resolutions and Decisions* (ref. 103).

¹⁴² Kupfer and McManus, *History of the National Eye Institute* (ref. 114), 164; World Health Organization and Halfdan Mahler, *The Work of WHO, 1976–1977: Annual Report of the Director-General to the World Health Assembly and to the United Nations*, Official Records of the World Health

At the following 28th WHO SEARO meeting in August, the regional committee followed the World Health Assembly's resolution on the Prevention of Blindness (WHA 28.54) with their own resolution SEA/RC28/R10. The representative from India, Mr. Gian Prakash (Secretary, Ministry of Health and Family Planning, New Delhi) made everyone aware that the Central Council of the Ministry of Health and Family Planning of India had already resolved that "the problem of blindness should be tackled under a national scheme." Therefore, the Government of India requested technical assistance in the form of 5,280 ophthalmology equipment kits to be placed in primary health centers and visual aids for the blind.¹⁴³

India started the National Programme for Prevention of Visual Impairment and Control of Blindness in 1976. The new program subsumed its earlier National Trachoma Control program.¹⁴⁴ The National Programme for Prevention of Visual Impairment and Control of Blindness was started without funding from the WHO which instead provided technical assistance and advice.¹⁴⁵ The Indian program to control blindness was unique because it was

Organization 243 (Geneva: World Health Organization, 1978), 118,

<http://apps.who.int/iris/handle/10665/86039>.

¹⁴³ WHO Regional Office for South-East Asia, *Report and Minutes of the Twenty-Eighth* (ref. 8), 90; WHO and Mahler, *The Work of WHO, 1976–1977* (ref. 142).

¹⁴⁴ V. V. Preobragenski and U. C. Gupta, "The National Trachoma Control Programme in India," *Journal of the All-India Ophthalmological Society* 12 (July 1964): 68–73.

¹⁴⁵ Planning Commission, "Annual Plan 2003-04-" (ref. 138); John Wilson, "Clearing the Cataract Backlog," *The British Journal of Ophthalmology* 71, no. 2 (1987): 158.

problem-oriented instead of disease-oriented.¹⁴⁶ As the first national blindness eradication program in the world, it set the standard for later such programs to be coordinated instead of implemented by the WHO.

As had long been planned, the theme of WHO's World Health Day in 1976 was "Foresight Prevents Blindness." In that same year, the WHO organized an inter-regional meeting in Baghdad, Iraq, to discuss the causes of blindness and the requirements to address it, including the development of human resources and eye health infrastructure.¹⁴⁷ In 1976 and 1978, Dr. Grasset and Dr. Brilliant were still part of the WHO SEARO office when it held meetings and set new goals and a new budget to tackle blindness.

Meanwhile, in Delhi in 1976 and 1978, the WHO SEARO held meetings to identify the causes of blindness and assess the magnitude regionally, and to determine how to eradicate blindness in South East Asia. The WHO SEARO meeting about blindness in 1978 brought together ophthalmologists from around the region with WHO staff, and therefore was a key event linking WHO SEARO smallpox staff Drs. Nicole Grasset and Larry Brilliant with Dr. R. P. Pokhrel an ophthalmologist from Nepal. In order to address blindness in the region, WHO SEARO wanted to: pinpoint the causes, calculate the extent, create a strategy, and monitor and

¹⁴⁶ L. P. Agarwal, "National Programme for Prevention of Visual Impairment and Control of Blindness," *Indian Journal of Ophthalmology* 25, no. 4 (1977): 1–5; WHO and Mahler, *The Work of WHO, 1976–1977* (ref. 142).

¹⁴⁷ WHO and Mahler, *The Work of WHO, 1976–1977* (ref. 142); UNOStamps, "World Health Day 1976–Foresight Prevents Blindness," UNO Stamps, February 6, 2008, accessed March 17, 2012. http://www.unostamps.nl/subject_world_health_day_1976.htm.

assess the results of implementing the strategy.¹⁴⁸ Likely as a result of the goals identified in these meetings, the proposed portion of the future WHO SEARO 1980–1981 budget to address blindness issues was in the amount of \$839,300.¹⁴⁹

At the first general assembly of the restructured IAPB in 1978 in the United Kingdom, it was clear that the IAPB was regionalized following the design of the WHO. The name, general assembly, mirrors the name of WHO’s World Health Assembly but the function is different. In contrast to the WHA, the IAPB General Assembly is where NGOs, individuals, national-member committees, and regional committee chairs report progress in meeting the charge that WHO has given the IAPB to eradicate blindness. The WHO sets policy on combating blindness (in consultation with and informed by organizations such as International Council of Ophthalmology, IAPB, and Helen Keller International). The IAPB works at a variety of levels to support governmental and nongovernmental programs implementing this policy and collect data about the results.¹⁵⁰

To start, the IAPB had eight regional committees, and this was composed of fifty-six national committees.¹⁵¹ This was deliberately modeled after the six WHO regional offices.¹⁵²

¹⁴⁸ World Health Organization and Regional Office for South-East Asia, “WHO Regional Office for South-East Asia Proposed Programme Budget for 1980–1981,” SEA/RC31/3., Regional Committee Meeting 31, Ulan Bator, August 22–28, 1978, <http://www.who.int/iris/handle/10665/129873>.

¹⁴⁹ WHO and Regional Office for South-East Asia, “Budget for 1980–1981” (ref. 148).

¹⁵⁰ WHO and Mahler, *The Work of WHO, 1976–1977* (ref. 142).

¹⁵¹ IAPB, “2nd General Assembly” (ref. 133).

¹⁵² Whereas in 1978 there were eight IAPB regional committees, in 1990 there were six, and in 2018, the “IAPB divides its global network into seven regions, based on the World Health Organizations’ geographical division of the world into six regional offices (with the only difference that we divide the

The IAPB organized an international general assembly every four years. In between, the regional committees and national committees organized their own conferences on blindness. Hence, from its beginning, the IAPB functioned as the most prominent member association for ophthalmology professionals interested in eradicating blindness. With this restructuring, this international non-profit, nongovernmental organization served as an ancillary to the WHO according to the resolution WHA22.29 proposed under Director-General Candau.

At the IAPB's first general assembly, Dr. Patricia E. Bath was elected as an alternate on the executive board.¹⁵³ Dr. Bath had presented her definition of community ophthalmology in 1976 at the American Public Health Association meeting in Miami, Florida.¹⁵⁴ With her previous public-health volunteer experiences as an undergraduate student in Yugoslavia, and as an internist in her home neighborhood of Harlem, New York, Dr. Bath was sensitive to how some types of public health problems, in this case blindness, disproportionately affect the marginalized.¹⁵⁵ In Yugoslavia the marginalized were women and children, and in the United States they were African-Americans. In each case, the key insight was better quality primary health care. Dr. Bath made integrating eye health care into primary health care the cornerstone of

Americas further into North and Latin America).” See WHO Office of External Coordination, “Directory” (ref. 100); IAPB, “IAPB Regions,” 2018, <https://www.iapb.org/iapb-regions/>.

¹⁵³ Patricia E. Bath, personal communication with Logan D. A. Williams, IAPB 1st General Assembly Program, UK, July 8, 1978, March 24, 2011.

¹⁵⁴ Patricia Era Bath, “Blindness Prevention” (ref. 17); Bath and Higginbotham, “Conversation Between Patricia Bath, MD, and Eve Higginbotham” (ref. 18)

¹⁵⁵ Bath, “Blacks at Greater Risk for Blindness” (ref. 19); Bath, interview, ca. March 2000, in Patricia Bath Oral History Collection No. 753 Box No. 1, reference video 753.1, National Museum of American History, Lemelson Center for the Study of Invention and Innovation, VHS format, 17:02

her new program of community ophthalmology to provide eye health care to the marginalized in the United States and around the world.¹⁵⁶ Meanwhile, Dr. Bath was passionate in believing that community ophthalmology methods would mitigate and reduce avoidable blindness; she introduced her programs in Africa and Asia with the help of colleagues like Professor Taj Kirmani from Pakistan and the IAPB regional chair for Africa, Professor C. O. Quarcoopome from Ghana.¹⁵⁷

[INSERT FIGURES 3 AND 4]

Finally, at the behest of the IAPB, WHO started the Prevention of Blindness program in 1978.¹⁵⁸ In 1980, the same year that the WHO officially declared smallpox eradicated, the WHO Program for the Prevention of Blindness staff in Geneva grew from one to two people and was finally assigned its own budget of \$2.3 million.¹⁵⁹ When directly comparing the different disease eradication programs run by the WHO, there is clearly a shift between the larger, more expensive, centrally organized eradication programs for malaria and smallpox prior to the 1970s, versus the smaller, cheaper, distributed organization of the eradication program for avoidable blindness (see Table 1 below).

¹⁵⁶ Bath, “Blindness Prevention” (ref. 17); Bath, Quarcoopome, and Kirmani, “Community Ophthalmology Plan for Underserved Populations,” (ref. 18)

¹⁵⁷ Bath, “Rationale for a Program” (ref. 17); Bath, Quarcoopome, and Kirmani, “Community Ophthalmology Plan for Underserved Populations,” (ref. 18)

¹⁵⁸ IAPB, “Introduction: What Is IAPB?,” 2004, http://www.iapb.org/wat_iapb.htm; IAPB, “IAPB History” (ref. 116); World Health Organization, “Prevention of Blindness and Visual Impairment Historical Perspective,” 2016, <http://www.who.int/blindness/history/en/>.

¹⁵⁹ The International Agency for the Prevention of Blindness and Carl Kupfer, eds. *World Blindness and Its Prevention*, vol. 3 (New York: Oxford University Press, 1988), 9.

[Insert Table 1. Comparing the World Health Organization’s Eradication Programs]

The focus of an international network of ophthalmologists on different definitions for public health ophthalmology over time demonstrated the widespread interest and the urgent nature of the burden of avoidable blindness to those outside and inside of the network. The global network of professionals interested in eradicating blindness participated in the second IAPB meeting in 1986 in New Delhi.¹⁶⁰ At this meeting, Dr. Venkataswamy defined community ophthalmology by pointing to Director-General Candau’s earlier call for a public health ophthalmology.¹⁶¹ In the late 1970s and early 1980s, there were pockets of ophthalmologists at premiere institutions around the world (for example at Johns Hopkins University and the University College London) becoming interested in so-called public health ophthalmology or rural ophthalmology. This idea of creating dedicated ophthalmology programs to “reach the unreached” emerged along with the global network to eradicate blindness in the 1970s to the late 1980s.¹⁶² American ophthalmologist Dr. Carl Kupfer, who founded the US National Institutes of Health National Eye Institute in 1970 as its first director, defined public health ophthalmology as a new way of delivering eye health care that includes “preventative, curative and promotive

¹⁶⁰ IAPB, “International Agency for the Prevention of Blindness 3rd General Assembly, A Decade of Progress, New Delhi, India December 6–11, 1986,” GVERI, Box ORG-20.

¹⁶¹ Venkataswamy, “Community Ophthalmology,” in IAPB, 3rd General Assembly, GVERI. (ref. 8).

¹⁶² Ram Prasad Pokhrel, *Reaching the Unreached: Three Decades of Struggle in Nepal* (Kathmandu, Nepal: International Forum, 2003), <http://www.rppokhrel.com/index.php?pageid=pub>.

activities.”¹⁶³ He commended the British ophthalmologist, Dr. Barrie Jones, as a pioneer in the field of public health ophthalmology in the United Kingdom. Dr. Jones was also known for coining the phrase “the burden of avoidable blindness.”¹⁶⁴ Concurrently, in South Asia, at the famous All India Institute of Medical Sciences in New Delhi, Dr. L. P. Agarwal outlined a new national program to fight avoidable blindness based on the new concept of community ophthalmology.¹⁶⁵ Dr. Syed Modasser Ali published the first book developing practical guidance for creating community ophthalmology programs through a local press in Bangladesh. The book was reviewed by a colleague of Dr. Barrie Jones at the University College London.¹⁶⁶ Thus, Dr. Venkataswamy’s discussion of community ophthalmology in the New Delhi IAPB meeting was part of a larger, international ground-swell of governmental, nongovernmental, and private eye clinics focused on serving the underserved. The IAPB began observing at WHO, before shifting to influencing the creation of the WHO Prevention of Blindness program, and finally, to serving as its advisor and ancillary. The WHO has delegated some decision making, management, and financial authority to IAPB.

¹⁶³ Carl Kupfer, “Public Health Ophthalmology,” *The British Journal of Ophthalmology* 71 no. 2 (1987): 116–17.

¹⁶⁴ Peter Leaver, “Obituaries: Professor Barrie R. Jones CBE Bsc (NZ) FRCS (Eng) FRCP (Lon) Hon FRACS,” 2009, accessed February 25, 2013, [http://www.moorfields.nhs.uk/Healthprofessionals/MoorfieldsAlumniAssociation/Alumninews/Obituaries; Wilson, “Clearing the Cataract Backlog,” \(ref. 145\), 158.](http://www.moorfields.nhs.uk/Healthprofessionals/MoorfieldsAlumniAssociation/Alumninews/Obituaries; Wilson, “Clearing the Cataract Backlog,” (ref. 145), 158.”)

¹⁶⁵ Agarwal, “National Programme” (ref. 146).

¹⁶⁶ Gordon J. Johnson, “Community Ophthalmology. By Syed Modasser Ali. Pp. 144. Tk.150. Anamoy: Bangladesh. 1985,” *The British Journal of Ophthalmology* 73, no. 7 (1989): 583.

Conclusion

The eradication of smallpox in WHO South-East Asia Regional Office demonstrates the deconcentration of administrative power from the central office to the regional offices built into the WHO constitution. It brought Western epidemiologists to the region and proved a tipping point for international interest in a global program to eradicate avoidable blindness. Arguably, in the 1970s, there was a conversion of economic and social resources from the disease of smallpox, to the diseases of avoidable blindness. This was facilitated by a regional concentration of administrative power in the WHO South-East Asia Regional Office. This essay tracked the shift in the WHO approach to disease eradication as it was shaped by its deliberate delegation of decision making, management, and fund raising to NGOs.

Some may argue that the WHO smallpox eradication program was an example of E. F. Schumacher's concept of appropriate technology.¹⁶⁷ Others suggest that the WHO smallpox program was viewed, similar to the WHO malaria eradication program before it, as authoritarian and top-down and not exemplary of the new primary "health care for all" initiatives occurring later in the 1980s under the third WHO Director-General Halfdan Mahler.¹⁶⁸ The historically contingent dependency of the formation of the global network to eradicate blindness on smallpox eradication in South Asia suggests that, from the 1960s to the 1990s, there was a clear shift at the WHO between the larger, more expensive, centrally organized eradication programs for malaria and smallpox versus the smaller, cheaper, decentralized organization of the eradication program

¹⁶⁷ Ernst F. Schumacher, *Small Is Beautiful: Economics as if People Mattered* (London: Blond & Briggs, 1973); WHO and Litsios, *The Third Ten Years* (ref. 43), 2.

¹⁶⁸ Bhattacharya and Dasgupta, "Tale of Two Global Health Programs" (ref. 59); Henderson, "Eradication" (ref. 44).

for avoidable blindness. This demonstrates that WHO began to develop a reputation for coordinating and leading (as opposed to implementing) global health initiatives in the 1970s, and that it was uniquely suited to do so because of its constitution.¹⁶⁹

The connections between prominent Western doctors and South Asian ophthalmologists grew and strengthened over time into a network of community ophthalmologists with strong roots in South Asia, the United States and United Kingdom. The decentralized power of the WHO was seen even further in the push in the early 1970s by the director general to connect with non-governmental organizations in order to collect data about blindness and coordinate programs to fight blindness. Thus, the subordinate network of community ophthalmologists grew from small nodes in various countries to stretch across the world with the multilateral organization called the International Agency for the Prevention of Blindness providing the coordinating structure instead of the WHO. This is demonstrated above by interactions between WHO staff members from Western industrialized nations working in India and Nepal (Dr. Brilliant from the United States, Dr. Grasset); prominent executive board members of the International Agency for the Prevention of Blindness (Dr. Bath, Dr. Sommer, and Dr. Kupfer from the United States, and Sir John Wilson from the United Kingdom); and prominent ophthalmologists in South Asia who also served as International Agency for the Prevention of Blindness (IAPB) executive board members (Dr. Venkataswamy in India and Dr. Pokhrel in Nepal).

¹⁶⁹ This came many years before Director General Brundtland's work from 1998–2003 to reinvent the organization as such. Please see the contrasting argument, Theodore M. Brown and Marcos Cueto, “The World Health Organization and the Transition From ‘International’ to ‘Global’ Public Health,” *American Journal of Public Health* 96, no. 1 (2006): 62–72.

As demonstrated above, it is a misperception to believe that NGOs lack influence in policymaking and programs for global health at the WHO. The WHO has remained a nimble multilateral organization without being overly swayed by the sometimes-competing interests of member-states from the global north and the global south.¹⁷⁰ Meanwhile, the WHO was also shaping, and being shaped by international non-governmental organizations. Noticeable examples are large non-profit foundations such as Rockefeller and Gates which have shaped the biomedicalization of the WHO's technical agenda.¹⁷¹ However, smaller multilateral NGOs, such as IAPB, facilitate bottom-up agenda-setting in the WHO. This occurs for two main reasons: (1) the WHO constitution has a built-in mechanism for coordinating with NGOs at different scales; (2) the international connections between experts in multi-lateral organizations and international NGOs are flexible and influential. The circulation of these experts in international organizations is analogous to the revolving door between US government and industry and deserves further consideration.¹⁷² Thus, the expert network of community ophthalmologists developed in both the wealthy industrialized nations of the global north and the less economically developed nations of the global south around appropriate technology discourse, and they converged around the discourse of treating the "burden of avoidable blindness."¹⁷³

¹⁷⁰ Chorev, *Between North and South* (ref. 30).

¹⁷¹ Anne-Emanuelle Birn, "Philanthrocapitalism, Past and Present: The Rockefeller Foundation, the Gates Foundation, and the Setting(s) of the International/Global Health Agenda," *Hypothesis* 12, no. 1 (2014): e8; Packard, *A History of Global Health* (ref. 23).

¹⁷² Charles E. Lindblom and Edward J. Woodhouse, *The Policy-Making Process* (Englewood Cliffs, NJ: Prentice Hall, 1993).

¹⁷³ Leaver, "Obituaries" (ref. 164); IAPB, "5th General Assembly" (ref. 2); Venkataswamy, "Community Ophthalmology," in IAPB, 3rd General Assembly, GVERI. (ref. 8)