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Scientific Patriotism: Medical Science and National Self-Fashioning in Southeast Asia

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Physicians and scientists dominated the first generation of nationalists in at least three East Asian colonies in the late nineteenth and early twentieth centuries: the Philippines under the Spanish and United States' regimes, the Dutch East Indies, and the Japanese territory of Taiwan. There is substantial evidence that, in each place, decolonization was yoked to scientific progress—not only in a practical sense, but symbolically too. The first generation to receive training in biological science and to become socialized as professionals used this education to imagine itself as eminently modern, progressive, and cosmopolitan. Their training gave them special authority in deploying organic metaphors of society and state, and made them deft in finding allegories of the human body and the body politic. These scientists and physicians saw themselves as representing universal laws, advancing natural knowledge, and engaging as equals with colleagues in Europe, Japan, and North America. Science gave them a new platform for communication. In the British Empire, for example in India and Malaya, medical science also proved influential, though it seems lawyers cognizant of precedent and tradition more often dominated decolonization movements. This essay will examine how scientific training

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shaped anti-colonialism and nationalism in the Philippines and the East Indies, concluding with a brief comparison of the situation in Taiwan.

The modern roots of anti-imperial nationalism are widely recognized. It seems national sensibility finds its earliest and most explicit expression in those sectors of society that are meritocratic, qualification-based, mobile, and atomized. Intellectuals and professionals trained in the manipulation of abstract, technical data and skilled in the development of wide-ranging networks often constitute the nationalist avant-garde.[1] Ironically, their Enlightenment or universal projects could assume Romantic or contingent form. Thus, as Ernest Gellner observes, "Nationalism is a phenomenon of Gesellschaft using the idea of Gemeinschaft: a mobile, anonymous society simulating a closed community."[2] Benedict Anderson also recognizes the contributions of "emerging nationalist intelligentsias" in the imagining of these political formations. National awakening tends to occur in "the *first* generation in any significant numbers to have acquired a European education," among young men who fill "subordinate echelons of the colony's bureaucracy and larger commercial enterprises."[3] Anderson attributes their group activism to the social bonds created through schooling and their enhanced access to contemporary models of the nation.[4]

Gellner notes the shift in the late-nineteenth century "from history to biology as the main mythopoetic science" of nationalism, which renders the nation natural, making it into a sort of necessary organism.[5] Yet neither

[1] Edward A. Shils, "The Intellectual in the Political Development of New States," *World Politics* 12 (1960): 329–68; Harry J. Benda, "Non-Western Intelligentsias as Political Elites," in J. H. Kautsky, ed., *Political Change in Under-Developed Countries: Nationalism and Communism* (New York: Wiley, 1963), 235–52; and J. D. Legge, *Intellectuals and Nationalism in Indonesia: A Study of the Following Recruited by Sutan Sjahrir in Occupied Jakarta* (Jakarta: Equinox Publishing, 2010 [1988]).

[2] Ernest Gellner, *Nationalism* (London: Phoenix, 1998), 74. See also his *Nations and Nationalism* (Ithaca: Cornell University Press, 1983). In the early twentieth century, Max Weber observed intellectuals "are to a specific degree predestined to propagate the 'national idea,' just as those who wield power in the polity provoke the idea of the state." From "Structures of Power: The Nation," in *From Max Weber: Essays in Sociology*, Hans H. Gerth and C. Wright Mills, eds. and trans. (New York: Oxford University Press, 1958), 171–79, 176.

[3] Benedict Anderson, *Imagined Communities: Reflections on the Origins and Spread of Nationalism* (London: Verso, 1991, rev. ed.), 118, 119 (his emphasis), 126. See also his *Under Three Flags: Anarchism and the Anti-Colonial Imagination* (London: Verso, 2005). Prasenjit Duara notes, "Anti-imperialist nationalism emerged historically from the urban, coastal sector where modern, capitalist forms of knowledge, technology, capital and organization had spread more widely." Prasenjit Duara, "Introduction: The Decolonization of Asia and Africa in the Twentieth Century," in P. Duara, ed., *Decolonization: Perspectives from Now and Then* (London: Routledge, 2004), 4.

[4] For a criticism of the claim that nationalist elites may simply have chosen modular forms of nationalism from Europe, see Partha Chatterjee, *The Nation and Its Fragments: Colonial and Postcolonial Histories* (Princeton: Princeton University Press, 1993).

[5] Gellner, *Nationalism*, 74. On the importance of evolutionary discourses in nationalism, see Prasenjit Duara, *Rescuing History from the Nation: Questioning Narratives of Modern China* (Chicago: University of Chicago Press, 1995). On cognate psychological ideas and nationalism,

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Gellner nor Benedict Anderson critically interrogates the *biological* character and scope of nationalism. They emphasize the importance of education, bureaucratization, and communication in the humanistic imagining of the nation, but the specific role of science in these modern processes receives scant attention. Pheng Cheah provides further elaboration on the philosophical origins of the "organismic metaphors" and "political organicisms" undergirding national aspirations, but he too mines few medical or scientific sources. Cheah uses Indonesian and Kenyan literary texts as illustrations to argue that both nationalism and cosmopolitanism are based on "the same organismic ontology."[6] Not surprisingly, the texts he cites happen to be full of examples of how scientific training cultivates national sensibility and the ways in which medicine can diagnose and treat the colonial or proto-national body politic. As the Indonesian novelist Pramoedya Ananta Toer put it, "A doctor must not only cure the disease of the body, he must also awaken the spirit of his people, anesthesized by their own ignorance."[7]

Some historians of science, focusing on isolated case studies, make claims for the scientific shaping of national consciousness. Most importantly, Gyan Prakash argues, "The emergence and existence of India is inseparable from the authority of science and its functioning as the name for freedom and enlightenment, power and progress." Prakash identifies a Western-educated indigenous elite enchanted by science, even though few local nationalist leaders boasted scientific training. "They saw reason as a syntax for reform, a map for the rearrangement of culture, a vision for producing Indians as a people with scientific traditions of their own."[8] For nationalists and colonizers alike, science possessed cultural authority and progressive legitimacy. In the Indian setting Prakash gives especially close attention to those nationalists who tried to reinscribe Western science, to translate "tradition" into a distinctive Hindu modernity, refiguring it as indigenous science. Prakash therefore

see Glenda Sluga, *The Nation, Psychology and International Politics, 1870–1919* (Basingstoke: Palgrave Macmillan, 2006).

[6] Pheng Cheah, *Spectral Nationality: Passages of Freedom from Kant to Postcolonial Literatures of Liberation* (New York: Columbia University Press, 2003), 6, 2.

[7] Pramoedya Ananta Toer, *Footsteps* [Jejak Langkah], Buru Quartet, vol. 3, Max Lane, trans. (New York: Penguin, 1990 [1985]), 128.

[8] Gyan Prakash, *Another Reason: Science and the Imagination of Modern India* (Princeton: Princeton University Press, 1999), 3, 6. Jawaharlal Nehru's plea to lessen religiosity and turn to science is a salient example—see his *The Discovery of India* (New Delhi: Oxford University Press, 1985 [1946]), ch. 10. See also Subrata Dasgupta, *Jagadis Chandra Bose and the Indian Response to Western Science* (Oxford: Oxford University Press, 2000). The historical literature on the relations of science, medicine, and the colonial state in India and elsewhere is extensive, though a little tangential to our argument; for a review, see Warwick Anderson, "Postcolonial Histories of Medicine," in John Harley Warner and Frank Huisman, eds., *Medical History: The Stories and Their Meanings* (Baltimore: Johns Hopkins University Press, 2004), 285–307.

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cautions that his story concerns India alone, yet his recognition of the significance of science seems pertinent to a more general line of inquiry.[9]

Our argument here has a tendency to conflate science and medicine. This is unavoidable. In general, medical training provided the first, sometimes only exposure of the colonized elite to science. Of course, one can identify a few exceptions, especially in South Asia, but throughout late-colonial Southeast Asia, advanced science education commonly meant training in medical science. Even if these scientifically minded physicians went on to study other biological and natural sciences, medicine was their first port of entry. Therefore, to extricate immersion in a world of scientific thought and practice from socialization into a modern profession when gauging relative contributions to the national awakening would be reductive and anachronistic. Additionally, we should make clear that not all those who invoked science, even medicine, in the national struggle were physicians or medical students—but those who did so most rigorously and consistently generally were. Above all, physicians and medical students were the most successful popularizers of organic analogies and evolutionary models. Of course, not all physicians became ardent nationalists, yet the ranks of nationalists were disproportionately medical. Why should this be so?

In this essay we examine the entanglement of science (especially medical or biological science) and nationalist self-fashioning in the Philippines under the Spanish and United States' regimes and in the Dutch East Indies.[10] Thus we take the two great colonial archipelagoes of Southeast Asia, each distinct in mode of governance, social history, and religious observance, and try to assay the role of the scientific imaginary in making the nation visible. The

[9] Warwick Anderson explains how science in the Philippines also "functioned as both index and generator of civic responsibility" ("Science in the Philippines," *Philippine Studies* 55 [2007]: 285–316, 309). A recent issue of *Osiris* explores this conjunction, though referring to it ambiguously as a "close relationship" or "affiliation": see Carol E. Harrison and Ann Johnson, "Introduction: Science and National Identity," *Osiris* 24 (2009): 1–14, 2, 4. The diversity of contributions to this issue may account for the editors' explanatory vagueness. The more relevant essays—though both focus on the material contributions of science and technology to nation building—are Pratik Chakrabarty, "'Signs of the Times': Medicine and Nationhood in British India," *Osiris* 24 (2009): 188–211; and Suzanne Moon, "Justice, Geography, and Steel: Technology and National Identity in Indonesian Industrialization," *Osiris* 24 (2009): 253–77. Prasenjit Duara, in *Rescuing History*, has connected "scientism" to the nationalism of the Chinese intelligentsia in the early twentieth century. The scientific shaping of national self-consciousness is not unrelated to medicalized postcolonial critique. For examples of the latter, see Frantz Fanon, *Black Skin, White Masks*, Charles Lam Markmann, trans. (New York: Grove Press, 1967); and Jalal Al-i Ahmad, *Occidentosis: A Plague from the West*, R. Campbell, trans. (Berkeley: Mizan Press, 1984).

[10] This challenges the conventional sociological claim that professions tend to withdraw from the public sphere. See Max Weber, *Economy and Society: An Outline of Interpretive Sociology*, Guenther Roth and Claus Wittich, eds., Ephraim Fischoff et al., trans. (New York: Bedminster Press, 1968); and Jürgen Habermas, *The Structural Transformation of the Public Sphere: An Inquiry into a Category of Bourgeois Society*, Thomas Burger and Frederick Lawrence, trans. (Cambridge, Mass.: MIT Press, 1989 [1962]).

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Philippines endured hundreds of years of Spanish clerical colonialism before the military intervention of the United States in 1898; although mostly Catholic, it remained Moslem in the southern islands. In the East Indies, the Dutch exerted less control until the late-nineteenth century; focused on commerce, they did not try to convert the majority Moslem population. Early in the twentieth century, both colonies intensified the production of minerals and export commodities and developed state bureaucracies. The Americans in the Philippines regarded themselves as particularly progressive and reformist and attempted to reshape the customs and habits of ordinary Filipinos. The local elite soon took up this "civilizing" project and came to dominate interventionist state bureaucracies. In the East Indies, the so-called Ethical Policy, introduced in 1900, required at least a show of concern for the exploited colonized. The Dutch claimed to promote economic development, and health and welfare reform, though by the 1920s increasingly rancorous relations with Indonesian intellectuals and politicians led to the abandonment of even perfunctory improvements. Despite their proximity, these colonial regimes therefore manifested different patterns of governance, education, and inclusiveness. And yet, as comparative study suggests, exposure to science seems in each place to have given form and force to nationalist movements.[11]

Building on Prakash's pioneering study of science as a sign of modernity in late-colonial India, we argue more generally for a scientific dynamic in decolonization movements and imperial transitions, distinct from conventional literary and historicist concomitants.[12] That is, we seek to recover through comparative inquiry an anticipatory nationalism derived from scientific enthusiasm and sensibility, a sense of invention and expectancy different from the more familiar nostalgic or atavistic visions of the new nation. At the same time, we hope to indicate here the multiply contingent and hybrid character of science, nationalism, and modernity—how they could be accomplished only locally and laboriously.

THE PHILIPPINES: SPANISH AND AMERICAN

Although recognized primarily as the writer of two brilliantly sardonic novels, José Rizal, the leading opponent of Spanish colonialism in the Philippines, learned science from the Jesuits at the Ateneo de Manila and trained in medicine locally with the Dominicans at the University of Santo Tomás and then in Madrid, before specializing in ophthalmology at Paris and Heidelberg. In the

[11] Clearly we are more interested here in sociological comparison—in trying to discern common patterns in different settings—than in genealogical inquiries. For the justification of this analytic framework, see Warwick Anderson, "Racial Hygiene and the Making of Citizens in the Philippines and Australia," in Ann L. Stoler, ed., *Haunted by Empire: Geographies of Intimacy in North American History* (Durham: Duke University Press, 2006), 94–115.

[12] On the "late-colonial," see John Darwin, "What Was the Late-Colonial State?" *Itinerario* 23 (1999): 73–82.

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1880s, the young Chinese mestizo observed the "Jesuits, who are backward in Europe, viewed from here, represent Progress; the Philippines owe to them their nascent education, and to them the Natural Sciences, the soul of the nineteenth century."[13] But Santo Tomás—which had offered Filipinos medical training since 1872—disappointed him. The walls, he reported, "were entirely bare: not a sketch, nor an engraving, nor even a diagram of an instrument of physics."[14] A mysterious cabinet contained some modern equipment but the Dominicans made sure that Filipinos admired it from afar. The friars would point to this cabinet, according to Rizal, to exonerate themselves, claiming that it was really "on account of the apathy, laziness, limited capacity of the natives, or some other ethnological or supernatural cause [that] until now no Lavoisier, Secchi, nor Tyndall has appeared, even in miniature, in this Malay-Filipino race!"[15] Rizal therefore left for Europe where he undertook studies of the new bacteriology, antiseptic surgery, and physical anthropology. In Berlin he met the liberal pathologist Rudolf Virchow, founder of social medicine, whom he had long admired. Rizal found Virchow, along with other physical anthropologists like Fedor Jagor and Ferdinand Blumentritt, treated him as an equal, as a cosmopolitan intellectual.[16] Virchow would urge his students to use the improved microscope, a product of German industry, and to think microscopically; heeding this call, Rizal took up the ophthalmoscope, which Hermann von Helmholz had invented a few years earlier. It allowed intense scrutiny of human pathology, scaling up otherwise imperceptible defects.

"Medicine is a social science, and politics is nothing else but medicine on a large scale," Virchow asserted. "Medicine, as a social science, as the science of human beings, has the obligation to point out problems and to attempt their theoretical solution."[17] Applying his doctrine of social medicine, the liberal

[13] José Rizal, *Noli Me Tangere*, Jovita Ventura Cruz, trans. (Manila: Nalandangan, 1990 [1886]), 318. See also Benedict Anderson, *The Spectre of Comparisons: Nationalism, Southeast Asia and the World* (London: Verso, 1998); Reynaldo C. Ileto, "Outlines of a Non-Linear Emplotment of Philippines History," in Lisa Lowe and David Lloyd, eds., *The Politics of Culture in the Shadow of Capital* (Durham: Duke University Press, 1997), 98–131; Vicente L. Rafael, *White Love and other Events in Filipino History* (Durham: Duke University Press, 2000); and John Nery, *Revolutionary Spirit: José Rizal in Southeast Asia* (Quezon City: Ateneo de Manila University Press, 2011).

[14] José Rizal, *El Filibusterismo*, Jovita Ventura Cruz, trans. (Manila: ASEAN Committee on Culture and Information, 1991 [1891]), 141.

[15] Ibid.

[16] John N. Schumacher, "Rizal and Blumentritt," *Philippine Studies* 2 (1954): 85–101. Rizal regarded Germany as his "scientific homeland" and in the Philippines he was known as a "German doctor": see Caroline Hau, *Necessary Fictions: Philippine Literature and the Nation, 1946–1980* (Manila: Ateneo de Manila University Press, 2000), 58–61.

[17] Rudolf Virchow quoted in Henry E. Sigerist, *Medicine and Human Welfare* (New Haven: Yale University Press, 1941), 93. See also George Rosen, *From Medical Police to Social Medicine: Essays on the History of Healthcare* (New York: Science History Publications, 1974); and Dorothy Porter and Roy Porter, "What Was Social Medicine? An Historiographical Essay," *Journal of Historical Sociology* 1 (1988): 90–106.

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German pathologist and anthropologist had become involved in the European revolutions of 1848—an inspiration for Rizal's campaign against the diseased Spanish clerical-colonial state in the Philippines. Both medicos regarded their societies as sick organisms—implicitly ailing female bodies, according to Raquel Reyes—requiring treatment and recuperation.[18] Organic metaphors and analogies girdled their nation-building programs. As Rizal has Elías assert in *Noli Me Tangere* (1887): "The treatment applied to the evils of the country is so destructive as to affect even a sound organism, whose vitality weakens and conditions it for evil. Would it not be more reasonable to strengthen the sick body and lessen somewhat the violence of the treatment?"[19]

While studying medicine in Europe, Rizal wrote copiously on the infected, corrupt, and repressive character of Spanish colonialism in the Philippines, and he completed his coruscating novels *Noli Me Tangere* and *El Filibusterismo* (1891). Returning to Manila in 1892, the ophthalmologist organized La Liga Filipina, the reformist precursor to the radical Katipunan, led by Andrés Bonifacio and Emilio Aguinaldo. Implicated in an aborted rebellion, Rizal soon was exiled to Dapitan on the southern island of Mindanao, where he built a hospital and improved local hygiene. Permitted to leave in 1896 in order to travel to Cuba to combat an outbreak of yellow fever, Rizal was arrested in Spain and returned to the Philippines to face trail for fomenting the incipient revolution in the archipelago. Declared guilty of sedition, the "First Filipino"—eventually the national hero—was executed by firing squad on 30 December 1896. At the Anthropological Society in Berlin, Virchow delivered the eulogy, lamenting—perhaps too hastily—the loss of the "only man with sufficient knowledge and resolution to open a way for modern thought into that distant island world."[20]

Rizal was not the only medico among the rising generation of nationalists in the Philippines. The Propaganda Movement, the group of striving young anticlerical Filipinos agitating against Spanish control, was saturated with scientists, physicians, and pharmacists. Among these self-confident *ilustrados* (or "enlightened ones") was Graciano López Jaena, the "prince of Filipino orators" and founder of *La Solidaridad* in Barcelona. Failing to get admitted to the medical school at Santo Tomás, he had worked as an apprentice at San Juan de Dios Hospital in Manila and practiced informally in Iloilo before leaving for Spain. He enrolled in medicine at the University of Valencia

[18] On Rizal's "pathological vision," see Raquel A. G. Reyes, *Love, Passion and Patriotism: Sexuality and the Philippine Propaganda Movement, 1882–1892* (Seattle: University of Washington Press, 2008), ch. 5. According to Benedict Anderson, Rizal was "a novelist and a moralist, not a political thinker" (*Under Three Flags*, 108). But might politics have inhered in his social medicine?

[19] José Rizal, *Noli Me Tangere*, Ma. Soledad Lacsin-Locsin, trans. (Honolulu: University of Hawaii Press, 1997), 325.

[20] Rudolf Virchow, "Don José Rizal," *Verhandlungen der Berliner Gesellschaft für Anthropologie, Ethnologie und Urgeschichte* (1897).

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but did not complete his studies, much to Rizal's chagrin, and succumbed to tuberculosis in his late thirties. Another leading *propagandista*, Mariano Ponce, took his medical degree at Santo Tomás, moved to Spain, wrote incendiary articles for *La Solidaridad*, and eagerly tried to supply the Filipino revolutionary forces with weapons. In the early twentieth century, under the U.S. regime, Ponce joined the National Party and established *El Ideal*.[21] The chief of the revolutionary army, General Antonio Luna, studied chemistry at Santo Tomás and qualified in pharmacy in Spain. Before taking up arms against the colonizers, he wrote a treatise on malaria and investigated acclimatization in the tropics. His brother José Luna sometimes was called the "physician of the revolution."[22]

We should consider whether engagement with science, training in medicine, and exposure to professional colleagues across the globe changed how the colonized elite thought of themselves and the world. Their scientific accomplishments must have appeared striking in a colonial regime that discredited Filipino scientific and technological achievements, thus securing and legitimizing fixed colonial hierarchies.[23] The later American regime would be perhaps more subtle, proclaiming its civilizing mission and mobilizing Filipinos on modern intellectual and cultural trajectories, though always deferring full validation of their competence and refusing to recognize them as professional equals and proper citizens.[24] Yet the *propagandistas* and their successors stood out as self-conscious and confident scientific figures, adroitly applying universal knowledge in a variety of settings, including Europe, and developing cosmopolitan ties and networks. They became familiar with the new analytic technologies in medicine, with scalar manipulation and techniques for making hidden pathologies visible, and imagined these as possible mechanisms of government. The new bacteriology drew their attention to microscopic agency, flexibility of scale, global connections, the dangers of contact, and the permeability of boundaries. For them, the laboratory represented an exemplary space of control, purity, and precision, a model disciplinary site, a place of surveillance and transformation—a space of infinite possibility. They believed they could diagnose and treat social and political pathologies just as they

[21] Ponce figures in Benedict Anderson's *Under Three Flags*. He was apparently in contact with other medical nationalists including Sun Yat-Sen and Ramón Betances.

[22] John N. Schumacher, *The Propaganda Movement, 1880–1895* (Manila: Solidaridad, 1973); "Philippine Higher Education and the Origins of Nationalism," *Philippine Studies* 23 (1975): 53–65; and *The Making of a Nation: Essays on Nineteenth-Century Filipino Nationalism* (Manila: Ateneo de Manila University Press, 1991).

[23] Michael Adas, *Machines as the Measure of Men: Science, Technology, and Ideologies of Western Dominance* (Ithaca: Cornell University Press, 1989); and "Contested Hegemony: The Great War and the Afro-Asian Assault on the Civilizing Mission Ideology," in Prasenjit Duara, ed., *Decolonization: Perspectives from Now and Then* (London: Routledge, 2004), 78–100.

[24] Warwick Anderson, *Colonial Pathologies: American Tropical Medicine, Race, and Hygiene in the Philippines* (Durham: Duke University Press, 2006).

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restored frail human constitutions. Above all, they came to view themselves as modern and cosmopolitan intellectuals, not mere colonial subjects.[25]

When Rizal first met Virchow he carried a letter of introduction from Trinidad H. Pardo de Tavera, a wealthy and well-connected creole physician originally from Manila. Out of favor with the Spanish authorities, Pardo de Tavera's father had moved the family to Paris, where Trinidad completed his medical degree. The son became a leading *ilustrado*, writing essays on linguistics and Philippine medicinal plants, as well as regularly issuing civic exhortations. Returning to Manila in the late nineteenth century he joined the faculty at Santo Tomás. But he resisted participating in anti-colonial activities and avoided fighting in the revolution. Instead, he led the next generation of Filipino scientists and physicians down the path of liberal reform and assimilation. Pardo de Tavera and his followers sought to transform Filipinos into modern civic subjects suitable for the future nation. During the Philippine-American war he launched *La Democracia* and founded the Federal Party, advocating autonomy for the islands within the United States. From 1901 until 1909 he was a token Filipino appointment to the Philippines Commission.[26] His policies of assimilation and annexation are often characterized as simple Americanization efforts, but what he really wanted was to modernize the archipelago—had he thought the Spanish or any other power sufficiently modern he would gladly have taken them as a model.

"America came to the Philippines to aid them, to sustain them and to give them the principles of liberty and free government," Pardo de Tavera wrote in 1902.[27] Filipinos were yet to achieve the necessary "triumph over one's self," and instead they remained lamentably "infected with the leprosy of superstition [*contagiodos con la lepra de la superstición*]." According to him, attainment of true self-government required the formation of "hygienic consciousness [*el sentimento de la higiene*]." Despite Filipino clamor for more hygiene, the Spanish had failed to prepare them for corporeal and political independence. Now they could take advantage of America's "regime of liberty, industry, work, and rationality [*mentalidad lógica*]."[28] In 1921, addressing graduates of the University of the Philippines, Pardo de Tavera imagined his people

[25] Ibid., esp. ch. 7.

[26] Ruby R. Paredes, "The Ilustrado Legacy: The Pardo de Taveras of Manila," in Alfred W. McCoy, ed., *An Anarchy of Families: State and Family in the Philippines* (Quezon City: Ateneo de Manila University Press, 1994); Barbara S. Gaerlan, "The Pursuit of Modernity: Trinidad H. Pardo de Tavera and the Educational Legacy of the Philippine Revolution," *Amerasia Journal* 24 (1998): 87–108; and Resil Mojares, *Brains of the Nation: Pedro Paterno, T. H. Pardo de Tavera, Isobelo de los Reyes and the Production of Modern Knowledge* (Quezon City: Ateneo de Manila University Press, 2006).

[27] T. H. Pardo de Tavera, "Filipino Views of American Rule," *North American Review* 174 (Jan. 1902): 73–84, 74

[28] T. H. Pardo de Tavera, *El Legado del ignorantismo* (Manila: Bureau of Printing, 1921), 33, 36, 4, 41. This is the text of an address to a teachers' assembly at Baguio.

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eventually "capable of following the infinite, progressive, and ascendant road of civilization." Anticipating the future nation, the aging physician urged graduates to develop the qualities of "confidence in one's own self, of appreciation, respect and love for work, of hygiene and care of our body, of disregard for suffering." "Let us therefore lay aside sentimental patriotism," he declared, "and let us adopt scientific patriotism."[29]

In the early twentieth century, scientists and physicians accommodated themselves to U.S. control, often adapting or deferring their nationalist ardor, seeking instead to extend some sort of modernity into the Philippines hinterland and prepare the people for eventual self-government. Through science education, public health, and social welfare—Pardo de Tavera's "scientific patriotism" and Michel Foucault's biopolitics—they would transform rural and insular societies, organizing them for the future nation.[30] Thus revolutionary fervor dwindled into bureaucratic functionality in the late-colonial state. Examples of such scientific accommodation abound. Fernando Calderón, a suave obstetrician, became the first Filipino director of the Philippine General Hospital and dean of the medical school of the University of the Philippines, succeeding the erratic William W. Musgrave, who fled to San Francisco after disaffected nurses poisoned him. A progressive, Calderón had trained during the Spanish colonial period at San Juan de Dios Hospital, receiving his licentiate from the University of Santo Tomás. After further study of obstetrics in Paris he was caught up in political agitation in the Philippines and became the president of the revolutionary municipal junta in Ormoc, Leyte, during the Philippine-American war.[31] Although a target of American racial disparagement, Calderón shared his colleagues' modernizing ambitions. Like them, he regarded himself as a pragmatist, criticizing "those traditional reactionaries of the first class who find nothing good except conversation and routine." After the war he became devoted to hygiene and the improvement

[29] T. H. Pardo de Tavera, "The Conservation of the National Type," Eleventh Annual Commencement Address, University of the Philippines, 4 Apr. 1921, 19–20, 13, 21, Pardo de Tavera collection, B2 E16, Rizal Library, Ateneo de Manila.

[30] Benedict Anderson (*Imagined Communities*) and others have claimed narratives of national belonging produced this transformation—we would argue they did not do so alone. See also W. Anderson, *Colonial Pathologies*, 191–92; and Julian Go, "Colonial Reception and Cultural Reproduction: Filipino Elites and United States Tutelary Rule," *Journal of Historical Sociology* 12 (1999): 337–68. On "biopolitics" and "governmentality," see Michel Foucault, "Governmentality," in *The Foucault Effect: Studies in Governmentality*, Graham Burchell et al., eds. (Chicago: University of Chicago Press, 1991), 87–104, *Abnormal: Lectures at the Collège de France, 1974–75*, Graham Burchell, trans. (New York: Picador, 203); and *"Society Must Be Defended": Lectures at the Collège de France, 1975–76*, David Macey, trans. (New York: Picador, 2003). Unfortunately, Foucault showed little interest in nationalism.

[31] Juan Fuentes, "The First Filipino PGH Director," in Enrique T. Ona, ed., *The Hospital: The First 75 Years of the University of the Philippines-Philippine General Hospital Medical Center (1910–1985)* (Manila: n.p., 1986), xxiv–vi; and Warwick Anderson, "Modern Sentinel and Colonial Microcosm: Science, Discipline and Distress at the Philippine General Hospital," *Philippine Studies* 57 (2009): 3–48.

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of the masses, declaring, "What constitutes the nerve of civilization in the present epoch is precisely public hygiene in the towns in general and the health of each citizen in particular."[32] With the support and protection of his close friend, the nationalist leader Manuel Quezon, Calderón dominated clinical medicine in Manila for more than twenty years.

By 1920, the colonial public health bureaucracy was thoroughly Filipinized. This meant that the racial hygiene policies of white health officers like Victor G. Heiser gave way to programs directed at developing the *masses*, allowing, in effect, the normalization of social medicine and welfare provision. Erstwhile nationalist physicians like Vicente de Jesús, the first Filipino director of health, concentrated on educating and mobilizing the poor, thereby reproducing hygienic social citizens.[33] They were administering state medicine in a late-colonial government. The need for education and reform of the masses was a truism of progressive public health in the early twentieth century. Thus Agerico B. M. Sison, a leading physician and later dean of the medical school, urged the emergent Philippines state to teach proper care of the body and fastidious behavior in the public schools. "The masses need to be informed of the rudiments of hygiene and public health," he wrote. More effort should be taken to "inculcate the principles of hygiene and sanitation in the more plastic minds of the schoolchildren."[34] According to Jacobo Fajardo, director of health in the 1930s, "Many of our major public health problems now … can only be satisfactorily solved with aid of personal hygiene, which means alteration in the daily habits of the individual, and such alteration can be accomplished by one means—education." Addressing the nursing school in 1931, Fajardo recommended that each graduate become "exemplary as a good citizen, interested always in the best solution of public questions, social and health problems, and in everything that pertains to the community."[35] These physicians were not only imagining a national community: they were inventing one.

During the 1930s science was conventionally linked to nation building and governmentality, supplanting the redundant and insulting American emphasis on its role in a more general civilizing mission. In 1936 Camilo Osias, president of the National University, observed, "Under the new order, there is a special call to men and women of science. More men and women need to be yoked for science." He went on, "If we as a people are to surmount the difficulties ahead we must apply to our life the ways and methods of science. We need to follow the careful laboratory method of fact finding, the

[32] Fernando Calderón in 1908, quoted in John E. Snodgrass, *Source History and Description of the Philippine General Hospital (1900–1911)* (Manila: Bureau of Printing, 1912), 25.

[33] W. Anderson, *Colonial Pathologies*, ch. 7.

[34] Agerico B. M. Sison, "Educating Our Educators," *Bulletin of the San Juan de Dios Hospital* 1 (1927): 123–24, 123, 124.

[35] Jacobo Fajardo, "Commencement Address," *Bulletin of the San Juan de Dios Hospital* 5 (1931): 173–75, 174, 175.

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scientific way of conducting research and sifting the facts, and the relentless procedure of science without partisanship or prejudice."[36]

Leopoldo B. Uichanco, from the University of the Philippines, welcomed "the greater extension of science-consciousness in Filipino life."[37] Others, such as Eulogio B. Rodriguez, the director of the National Library, endorsed this optimism, claiming, "The future is bright because our people are becoming scientific-research-minded." But Rodriguez echoed older American concerns when he observed, "One of the great handicaps of inventors and scientists in tropical countries is a warm climate, which is not conducive to continuous mental effort."[38] More commonly, national self-assertion substituted for such outdated environmentalist pieties. The director of the Bureau of Science, Angel S. Arguelles, declared, "A nation dedicated to science, that applies it in various complex national activities, can look forward with confidence to its future and is bound to survive through the vicissitudes of time." Applied science, he believed, "would evolve a virile and progressive nation."[39] Indeed, the constitution of the Philippine Commonwealth, written in 1934, provided that "the State shall promote scientific research and invention," an extraordinary national commitment to science, indicating also perhaps the depth of scientific commitment to the nation.[40]

FROM THE DUTCH EAST INDIES TO INDONESIA

As Minke, Pramoedya Ananta Toer's double of pioneering nationalist Tirto Adi Suryo, arrived in Tanjung Priok, the harbor of Batavia (Jakarta), in 1901 to attend the local medical school, he mused:

> Farewell to you, ship. Farewell to you, sea. Farewell to all that is past. And the dark times, neither are you exempt—farewell.
>
> Into the universe of Betawi [Batavia] I go—into the universe of the twentieth century. People say only the modern man gets ahead in these times. In his hands lies the fate of humankind. You reject modernity? You will be the plaything of all forces of the world operating outside and around you. I am a modern person. I have freed my body and my thoughts of all ornamentations.
>
> And modernity brings the loneliness of orphaned humanity, cursed to free itself from unnecessary ties of custom, blood—even from the land, and if need be, from others of its kind.[41]

[36] Camilo Osias, "Utilizing Science for Human Needs," in Zoilo M. Galang, ed., *Encyclopedia of the Philippines: The Library of Philippine Literature, Art and Science* (Manila: P. Vera and Sons, 1936), vol. 7, 624–27, 624–25, 625–26.

[37] Leopoldo B. Uichanco, "The Philippines in the World of Science," in Zoilo M. Galang, ed., *Encyclopedia of the Philippines*, vol. 7, 178–93, 190.

[38] Eulogio B. Rodriguez, "Brief Observations on Science in the Philippines in the Pre-American Era," in Zoilo M. Galang, ed., *Encyclopedia of the Philippines*, vol. 7, 52–101, 91, 92.

[39] Angel S. Arguelles, "Progress of Research in the Philippines," in Zoilo M. Galang, ed., *Encyclopedia of the Philippines*, vol. 7, 17–30, 29, 28.

[40] Article XIII, section 4. This may actually be a unique commitment to science.

[41] Pramoedya, *Footsteps*, 15–16.

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Minke boarded the tram to the center of Weltevreden, Batavia's new suburb in the hills, traveling first class—"white class"—aware that he was a "native who prefers European clothes, who carries on like a *sinyo* [an Indo-European youth]." While admiring the gas-lit lamps, he speculated that an electric tram soon would replace the steam-powered one, and that the streets might be paved with asphalt. For Minke, Batavia was the epitome of modernity, and his studies at the medical school would ensure he became a participant in this modern world.

Already we know that Minke believed, "The science and knowledge that I received from school and the truth of which I witnessed in life made my personality very different from that of my people in general." He was becoming a modern person, a citizen of the world. "Scientific knowledge has already bestowed on me a blessing that is of unlimited beauty." As a young medical student, Minke was especially impressed that both Rizal and the Chinese nationalist Sun Yat-Sen were doctors. Like them, he placed "greater trust in scientific knowledge, reason. At least with them there are certainties that one can hold onto."[42]

Pramoedya notes the pathos of Minke's travel to medical school and into modernity. Most students had come from afar, leaving their villages and extended family, loosening the hold of *adat*, or customary law. As German social theorists would say, they were moving from *Gemeinschaft* to a modern, cosmopolitan *Gesellschaft*. Yet most students resisted nostalgia, attracted to the potential of modernity and eager to become part of the twentieth century, which brought with it the promises of science and progress. Many of them hoped to advance their social position by receiving an education, enabling them to take their place in the new order, as well as to improve social conditions in the colony with the tools modernity pledged to them. It was this sense of promise and potentiality that guided them into nationalist activism.

Edification at the medical schools in the Indies decisively shaped the subjectivities and self-conception of Indonesian students, prompting the formation of new and hybrid identities. For some this created a sense of turmoil, even vertigo. One of the less sanguine students, writing in the student almanac of the NIAS (Nederlandsch-Indische Artsen School; Netherlands-Indies School for Physicians, Surabaya), described vividly the estrangement that exposure to science and modernity was inducing:

I am a tragic figure, who is part of the nation's flower, of the Indonesian people which is still shrouded in the greatest darkness, and which hopes to be redeemed by me, the tragic

[42] Pramoedya Ananta Toer, *This Earth of Mankind* [Bumi Manusia], Buru Quartet, vol. 1, Max Lane, trans. (New York: Penguin, 1996), 16, 16, 19. Pramoedya undertook extensive historical research for his novels and even wrote the biography of the medical student on whom Minke was modeled: *De Pionier: Biografie van Tirto Adhisoerjo* (Amsterdam: Manus Amici-Novib, 1988).

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figure, who dances around, fleeing from himself, with forced joy, an arrested heart, in a state of distress … I am, with my Western knowledge, snatched from my Oriental environment! From primary school on I have become increasingly and systematically alienated from the warmth of my Indonesian culture, while the cold and sober Western civilization could never become completely my own.… I hang suspended between heaven and earth, rudderless and unable to keep my balance, back and forth I am swept by the fierce waves of seething sea of life! I am at a loss with Western ideas, which I never fully understand.… I am not able to blow the warmth of life into the Western ideas that I have received.… At the same time, the warm Oriental civilization is cold … and dead to me.[43]

The sense of living uncomfortably between two worlds was conveyed also in Abdul Muis's 1928 novel, *Salah Asuhan* (Wrong upbringing), which described the travails of Hanafi, an educated Indonesian with the legal status of a European, and his unsuitable Eurasian sweetheart.[44] A medical school dropout and political radical, active in Sarekat Islam (Islamic Union), Muis illuminated the horizon of Western possibility in the Indies, drawing attention to the conflicts of old customs and modern aspirations.[45] Few such reservations were expressed in the Philippines during this period.

The Batavia medical school grew out of a small course for vaccinators and native medical assistants, which began in 1851. After repeated reorganization, it was renamed STOVIA (School ter Opleiding van Inlandsche Artsen; School for the Education of Native Physicians) in 1903, boasting a medical course lasting six years.[46] In 1927, it was transformed into a proper medical college (Geneeskundige Hoogeschool), conferring degrees equivalent to those in the Netherlands. The Surabaya medical school NIAS opened in 1913.[47] STOVIA and to a lesser extent NIAS became hotbeds of Indonesian nationalism. For example, Tirto Adi Suryo—Pramoedya's model for Minke—dropped out of medical school, published newspapers and magazines in the early twentieth century, and in 1909 became involved in the founding of the Sarekat

[43] "Sizaru Veralina," "Mijn Nood," in Dj. Siregar, Soeharsa, and C. Schreuder, eds., *NIAS Almanak: Lustrumnummer 1933–1934* (Surabaya: NIAS, 1934), 209.

[44] Abdoel Moeis, *Never the Twain* (Jakarta: Lontar, 2010 [1928]).

[45] Keith Foulcher called Muis a Minke-like character, in "Biography, History and the Indonesian Novel: Reading *Salah Asuhan*," *Bijdragen tot de Taal-, Land- en Volkenkunde (BKI)* 161 (2005): 247–68.

[46] A. de Waart, ed., *Ontwikkeling van het Geneeskundig Onderwijs te Weltevreden, 1851–1926 (Uitgave ter Herdenking van het 75-Jarig Bestaan van de School tot Opleiding van Indische Artsen [Stovia])* (Weltevreden: Kolff, 1926); M. A. Hanafia SM, Bahder Djohan, and Surono, *125 Tahun Pendidikan Dokter di Indonesia 1851–1976* (Jakarta: FKUI, 1976); Ahmad Sujudi, H. Ali Sulaiman, and H. Sofyan Ismael, eds., *150 Tahun Pendidikan Dokter di Indonesia: Menuju Persaingan Global* (Jakarta: ILUNI FKUI, 2002). For the early development of the Batavia medical school, see Liesbeth Hesselink, *Genezers op de Koloniale Markt: Inheemse Dokters en Vroedvrouwen in Nederlandsch Oost-Indië, 1850–1915* (Amsterdam: Amsterdam University Press, 2009).

[47] Widohariadi and Bambang Permono, *Peringatan 70 Tahun Pendidikan Dokter di Surabaya, 15 Sept. 1983* (Surabaya: Gideon, 1983); and, *Peringatan 90 Tahun Pendidikan Dokter di Surabaya* (Surabaya: Fakultas Kedoktoran Universitas Airlingga, 2003).

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Dagang Islam, an influential syncretic political movement.[48] Another medical student, Sutomo, was co-founder in 1908 of Budi Utomo (Glorious Endeavor), a moderate organization that aimed to develop Javanese culture and is commonly regarded as the first national movement.[49] After further study in the Netherlands and Germany, Sutomo became a dermatologist at NIAS. He founded the first Indonesian study club in 1924 and headed the Partai Indonesia Raya (Parindra), which established educational bodies and even a bank providing small credits to farmers. After finishing his local medical training in 1894, Abdul Rivai attempted to enroll in a medical school in the Netherlands, which refused him entry because it considered his credentials insufficient. He too was involved in journalism, working as the founding editor of *Bintang Hindia*, a Malay-language newspaper arguing for educational uplift of the people.[50] In 1918, Rivai was appointed to the Volksraad (Popular Council), where he often criticized policies of the colonial government and argued passionately for the establishment of a university in the Indies.

Medical graduate Cipto Mangunkusumo also assisted in the founding of Budi Utomo and in 1912 started the Indische Partij (Indies Party), together with Ernest F. E. Douwes Dekker—a relative of Multatuli—and Suwardi Suryaningrat, yet another nationalist who spent some time at STOVIA before turning to journalism, teaching, and popularizing the name "Indonesia." Like his colleagues, Cipto could imagine the colonial state as an organic pathology: "The powers of the national body are destroyed by a cancerous tumor. Medical science currently does not know any better means to fight cancer than the knife. I used to be naïve and assumed that the Volksraad would act like a surgeon to stop further growth of this cancer. I was very naïve! Experience has taught me that the Volksraad is really a quack that cannot be trusted with a knife. It is not responsible toward the patient because it never completed a full medical education."[51] Cipto's Indische Partij was the first to advocate complete independence for the Indies, while presenting itself as fostering unity between Indo-Europeans and Indonesians. The colonial government disbanded it after a rather short period of activity and exiled its leaders to the Netherlands.

Medical politics and professional rivalry further radicalized many of these incipient nationalists. In 1912, the executive of the Association of [European] Physicians in the Dutch East Indies sharply criticized the proposal of the colonial government to open a medical school in Surabaya, later to be known as

[48] Pramoedya, *De Pionier.* Tirto spent four years at medical school in the 1890s, dropping out before the last year.

[49] The literature on the Indonesian nationalist movement is copious. An overview can be found in R. E. Elson, *The Idea of Indonesia: A History* (Cambridge: Cambridge University Press, 2008).

[50] Harry Poeze, "Early Indonesian Emancipation; Abdul Rivai, Van Heutsz and the Bintang Hindia," *Bijdragen tot de Taal-, Land- en Volkenkunde (BKI)* 145 (1989): 87–106.

[51] Cipto Mangunkusomo, "Rede, Algemene Beschouwingen," in *Handelingen van Den Volksraad, Tweede Gewone Zitting* (Batavia: Volksraad van Nederlandsch-Indië, 1918), 159–70, 168.

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NIAS. Dutch physicians felt that individuals of desirable social standing should always be able to finance their medical education in the Netherlands. Opening a second medical school in the Indies would only allow Indonesians, Indo-Europeans, and those of Chinese descent—described as "of low moral standards, lacking the good character required in medicine … lacking general development, sense of duty, and morality"—to become physicians, thus degrading both the profession and medical care.[52] The statement generated outrage in the Indigenous press and embarrassment in the European press. It became a rallying cry in the propaganda of the Indische Partij. As a consequence, indigenous physicians redoubled their support for the nationalist cause.[53]

Both Cipto and Sutomo spent time in the Netherlands, often under duress. They joined a small, highly select, somewhat elite, and very bright group of cosmopolitan students. In the Netherlands, the discrimination these would-be scientists and physicians suffered paled in comparison to the challenges of everyday life in the Indies. In Europe they established contact with a variety of politicians, especially those from the labor party and communist movement, representatives of Marxist science. Several Indonesian students in the Netherlands became members of the Indische Vereeniging (Indies Association), wherein, in the 1920s, far-reaching ideas about nationalism and Indonesian independence were formulated. The participation of Suwardi Suryaningat, Douwes Dekker, Cipto, and later Sutomo further radicalized the organization. It changed its name to Indonesische Vereeniging in 1923 and Perhimpunan Indonesia late in 1924—the translation into the new national language is significant. One prominent member was the economics student Mohammad Hatta, later the nation's first vice-president and its foreign minister.[54] The ideas developed by these students—most of them with some medical training, others engineers, lawyers, and journalists—would be exceptionally compelling in the nationalist movement in the Indies.

The radicalism evident in the first generation with scientific and medical training is, again, not so pronounced later in the twentieth century. As in the Philippines, scientists and physicians in the East Indies eventually developed some accommodation with the late-colonial state, choosing to educate and enlighten the masses, thus preparing them for citizenship in the coming nation. At the same time, nationalists debated how best to achieve modernization and independence, whether these goals would be reached faster

[52] [O. Deggeler and J. J. van Lonkhuyzen], "Het Indisch Ontwerp 1913," *Bond van Geneesheeren in N.-I.* 52–53 (1912): 1–29, 26, 27.

[53] E.F.E. Douwes Dekker, "De Indische Partij: Rapport der Propaganda-Deputatie," *Het Tijdschrift* 2, 4 (1912): 97–146, esp. 100, 114–21, 133–36.

[54] Harry A. Poeze, *In het Land van de Overheerser I. Indonesiërs in Nederland, 1600–1950* (Dordrecht: FORIS, 1986).

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through collaboration with the Dutch colonial government or in active opposition to it.[55] In the 1920s, Sukarno and many followers embarked on a policy of non-cooperation, refusing to participate in the activities of the Volksraad. Many of them were exiled (within Indonesia this time) or jailed. Indonesian physicians, on the other hand, increasingly concentrated on hygiene education and social medicine. Usually they worked for the colonial public health service or as medical officers on plantations, focusing on industrial hygiene. Although apparently careerist, by the 1930s most of these physicians became critical of the colonial state and sympathized with the nationalist movement, demonstrating strong convictions about the social role medicine could play in improving conditions among Indonesians. They, too, were concerned to render the masses more science-minded.

Under the leadership of Abdul Rasyid, a member of the Volksraad, the Vereeniging Indonesische Geneeskundigen (VIG; Association of Indonesian Physicians) became active after languishing through the 1930s. As its president, Rasyid organized congresses in 1938 and 1940, ensured regular publication of its journal—renamed *Medisch Tribune* (Medical Tribune)—and wrote copiously on medical and political subjects. According to Rasyid, Indonesian physicians were the principal mediators between the cultures of East and West, a task that conferred on them unusual responsibility in the uplift of the Indonesian population. As he stated: "The vision can already be imagined that Indies physicians will have to be one of the levers for the development of the Indonesian population."[56] It seemed to him and his colleagues that physicians could better realize their goals through medical work, or social medicine, and participation in the advocacy activities of the VIG, rather than through explicit political campaigning. Numerous articles appeared in *Medisch Tribune* on the need for public health programs and hygiene education. In particular, the transformational potential of the medical activities of the Rockefeller Foundation in the Indies received positive commentary.[57] Rasyid and his cohort of physicians were committed to improving and mobilizing Indonesian society through scientific initiatives—just as an earlier generation had used science to refashion themselves—even if that meant serving, or at least functioning within, a political system they were seeking to abolish.

[55] Susan Abeyasekere, *One Hand Clapping: Indonesian Nationalists and the Dutch, 1939–1942* (Melbourne: Centre of Southeast Asian Studies, Monash University, 1976).

[56] Abdul Rasjid, "Beschouwingen over de Positie van den Ind.-Arts," in *Het Eerste Congres van de Vereeniging van Indonesische Geneeskundigen Gehouden Op 24, 25, en 26 December 1938 te Semarang* (Batavia: Kenanga, 1938); Abdul Rasyid quoted in *Medisch Tribune* 27 (Mar. 1939): 10.

[57] See, for example, R. Mochtar, "Intensief Hygienewerk en Medisch-Hygienische Propaganda," *Medisch Tribune* 27 (1939): 16–21. Mochtar was employed by the Rockefeller Foundation during the 1930s. After independence, he became an official in the Department of Health. For activities of the Rockefeller Foundation in the Indies, see J. L. Hydrick, *Intensive Rural Hygiene Work and Public Health Education of the Public Health Service of Netherlands India* (Batavia: n.p., 1937).

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Professional organization and even nomenclature are inextricable from rising nationalism in the early twentieth century. The VIG began in 1910 as the Vereeniging van Inlandsche Geneeskundigen (Association of Native Physicians) and in 1926 changed its name to Vereeniging van Indische Geneeskundigen (Association of Indies Physicians). At this time, a proposal from Indonesian physicians studying in the Netherlands to call the Association "Indonesian" was rejected because the word had distinct nationalist implications.[58] The students in the Netherlands could not comprehend this response, since to them it was self-evident that the association was already politically involved, if only because everything in colonial society had political ramifications. If the name "Indonesian" was rejected, they said they would prefer the designation "native" rather than "Indies," because at least it correctly indicated the membership of the association, which ought to promote the interests of indigenous physicians (and not those of Europeans).[59] Radical students in the Netherlands—who had just engaged in an extensive debate about the reactionary views of two Dutch psychiatrists on the nature of the native mind[60]—thought the association should be a vehicle for the advancement of *Indonesians*, and not merely medicine, in the Indies.

When the name of the association was finally changed in 1938 to Vereeniging van Indonesische Geneeskundigen, few objected. At the first congress it was resolved to send a friendly letter to the Association of European Physicians expressing the hope that both associations would collaborate in the future, or even that the European colonial vestige might be incorporated in the national body.[61] A motion adopted at the same meeting opposed "the existing dualism in the medical corps."[62] Through its many activities in improving the working conditions of Indonesian physicians and protesting against discriminatory practices, the VIG would attempt to realize the ideals of social medicine for all the Indonesian population. Of necessity, it had to stay within the boundaries of what was legally allowed in the Indies at the time. Many members of the VIG remained employed as physicians during the Japanese occupation.[63] A few became actively involved in the armed struggle against

[58] Anon., "Mededeelingen van het hoofdbestuur," *Orgaan der Vereenging van Indische Geneeskundigen* 16 (Jan. 1927): 17.

[59] S. Proehoeman and A. Mochtar, "Letter from the Association of Indonesian Physicians, Netherlands Section, to the Executive," *Orgaan der Vereenging van Indische Geneeskundigen* 16 (Feb. 1928): 47.

[60] Hans Pols, "The Nature of the Native Mind: Contested Views of Dutch Colonial Psychiatrists in the Former Dutch East Indies," in Sloan Mahone and Megan Vaughan, eds., *Psychiatry and Empire* (London: Palgrave Macmillan, 2007), 172–96.

[61] Anon., "De Bond van Geneesheeren in Ned. Ind.," *Medisch Tribune* 27 (Mar. 1939): 4.

[62] Anon., "Verslag over het 1e Congres van de Vereeniging van Indonesische Geneeskundigen, 1938," *Medisch Tribune* 27 (Mar. 1939): 16.

[63] See the listing of physicians in Gunseikanbu, *Orang Yang Terkemuka di Jawa* (Yogyakarta: Gadjah Mada University Press, 1986 [1944]), 299–382.

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the Dutch in 1946 after the outbreak of the Indonesian revolution. The *asrama* (dormitory) of the medical students at Prapatan 10 became one of the three centers of armed revolt in Jakarta.[64] After national independence in 1949, Indonesian physicians followed varied career paths. Some built up a system of medical education to train physicians for the newly independent nation and developed health policy in the Ministry of Health. A smaller number became leading businessmen and generals. All of them were involved in nation building, if through different channels.

CONCLUSION

In her study of the relations of the Taiwanese medical profession and the Japanese colonial state, Ming-Cheng M. Lo describes a shift from resistance to assimilation and quiescence. During the 1920s, the first generation of Taiwanese doctors "channeled their resources and power into anti-colonial struggles, positioning themselves as major movement leaders in the nascent Taiwanese civil society"; but in the *kominka* period of imperial expansion (1937–1945), medicos became the "professionals who carried forth Japanese colonial modernity." She argues that for the earlier "national physicians" ethnic ties influenced their professional identities, while the more accommodating "medical modernists" managed to displace ethnic allegiance in favor of professional identity.[65] The pattern is similar to those we discerned in the Philippines and the East Indies, though we find the later cohort advancing national goals through mass mobilization, rather than withdrawing completely from the struggle. However, we can confirm Lo's observation that indigenous physicians under the late-colonial state tended to embrace "modernity's promise of progress toward universal truth and good…. The modern, for them, stood for an ideal situation in which human lives could be continually improved by rational thinking and action"—by science, in effect.[66]

Like Prakash and Lo, we believe it is time for historians of imperial transitions and national emergence to take more seriously contemporary scientific vision and medical training. From the late nineteenth century, and maybe earlier, science and medicine offered new ways of seeing humans, their

[64] Benedict R. Anderson, *Java in a Time of Revolution: Occupation and Resistance, 1944–1946* (Ithaca: Cornell University Press, 1972); O. E. Engelen, Aboe Bakar Loebis, Abdullah Ciptoprawiro, Soejono Joedodibroto Oetarjo, and Idris Siregar, *Lahirnya Satu Bangsa dan Negara* (Jakarta: Penerbit Universitas Indonesia, 1997).

[65] Ming-Cheng M. Lo, *Doctors within Borders: Profession, Ethnicity, and Modernity in Colonial Taiwan* (Berkeley: University of California Press, 2002), 5, 6, 7.

[66] Ming-Cheng M. Lo, "Between Ethnicity and Modernity: Taiwanese Medical Students and Doctors under Japan's Kominka Campaign, 1937–1945," *Positions* 10 (2002): 285–332. Other obvious examples include Sun Yat-Sen, MD, in China; Ramón Betances, MD, in the Caribbean, and even Ernesto "Che" Guevara, MD, in Latin America.

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societies, and their place in nature.[67] Evolutionary biology proved an inexhaustible source of organic metaphor and model, a guide for intellectuals chafing against fixed social hierarchies and ossified colonial structures. As we have seen, social medicine and bacteriology could also shape political perceptions and suggest radical solutions to social problems and mass organization. They might alter views of agency, control, and scale. They implied a diagnostic relation to the state and prescribed new strategies for intervention. For the first generation of "native" physicians, the first cohort exposed to science, their training gave them an entry point into what felt like the laboratory of modernity. Science not only changed their view of the world, it also refashioned their sense of themselves, sometimes with painful and distressing consequences. They became scientists and physicians rather than mere colonized subjects, transformed into mobile cosmopolitan agents, modern intellectuals, and nationalists. Science could give them a sense of anticipation, of limitless potential, of national futures. Yet historians until recently have focused mostly on history, law, and other more retrospective and nostalgic narratives of national emergence.

In 1918, as national leaders prepared to partition rationally post-war Europe, the social theorist Max Weber lectured on science as a vocation. It was also the year Fernando Calderón took over the Philippines General Hospital and Abdul Rivai joined the Volksraad in the East Indies. For Weber, science was the vanguard of an intellectualist rationalization that had been advancing for more than a thousand years, rendering the world and its inhabitants more calculable and disenchanted. But he questioned whether science possesses any intrinsic value. Rather, it seemed to him that science contributes a method of thinking, a means of gaining clarity, and a purpose for responsible conduct. It makes its practitioners self-conscious and self-reflective in a modern way. Surely then, Weber would not have been surprised to find that science was turning colonial subjects into national intellectuals, even if he recognized the necessary conflict between rationalists and prophets.[68] To us it now seems science was doing much more than making available a mode of modern self-consciousness. It also offered the anti-colonial intelligentsia a means of social reproduction, a professional identity, and agenda. Importantly, this emergent professionalism did not lead to a withdrawal from politics, as Weber would have predicted. Rather, it organized and consolidated a means of constituting other national subjects—it operationalized the

[67] It may prove worthwhile to compare the role of different forms of science and medicine in the French revolution and in revolutions in the Americas in the late eighteenth and early nineteenth centuries.

[68] Max Weber, "Science as a Vocation [1918]," in *From Max Weber*, 129–56. Of course, Weber was also arguing for the separation of science from politics, believing responsible scientists are not equipped to sell a *Weltanschauung*.

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biopolitical project of developing the population into hygienic citizens, of disciplining the emergent nation-state. These professionals could mobilize the masses for the nation.[69]

We do not mean to suggest that science alone explains everything and poetry is impotent. In the Philippines, a vigorous anticlerical reaction, masculine *amor propio*, and enthusiasm for freemasonry also contributed to the assertiveness of the intellectual elite's positivism and liberalism. In the East Indies, nationalism was more syncretic, a tense and unstable combination of Islam, ethnic filiation, and science—an amalgam that transformed its constituents in unpredictable ways. The patterns were different again in Taiwan, as Lo demonstrates, and in India, where Prakash argues science exerted its pull a little later and was more thoroughly indigenized. Our goal here is simply to show the scientific dimensions and scope of nationalism in the early twentieth century, not to imply a single cause for national awakening, or a uniform configuration.[70]

Additionally, we wanted to trace, lightly and perhaps too enigmatically, a genealogy for the "globalization" of Western science and medicine, connecting their spread with colonial structures and national aspirations. One might argue that this was not a story about nationalism and independence but rather an account of neocolonialism and dependence.[71] In a sense, we have described the shift from formal political and economic imperialism to the neocolonial intellectual hegemony of science and technical reason. For most recent analysts of the globalization of science, the phenomenon excites a feeling of euphoria and perception of novelty, whereas we offer here an anhedonic and critical reading of this and other neocolonial developments.[72] Ostensibly we are writing about nationalism and the end of empire, but of course we are also charting another imperial transition, albeit an exceptionally complex and ambiguous one.

[69] Prasenjit Duara points out that nationalism "meant the imposition of a modern Westernized figure of a rational, hygienic, and scientific subject in place of much that was meaningful to the people." But he does not connect explicitly the biopolitical formations of the East Asian modern to biomedicine. Prasenjit Duara, *Sovereignty and Authenticity: Manchukuo and the East Asian Modern* (Oxford: Rowman and Littlefield, 2003), 19. It should be obvious now that our essay tries to negotiate a compromise between Weber and Foucault in relation to science and the nation-state.

[70] For a comparison of Southeast Asian nation-states, see Anthony Reid, *Imperial Alchemy: Nationalism and Political Identity in Southeast Asia* (Cambridge: Cambridge University Press, 2010).

[71] Vincanne Adams concludes *Doctors for Democracy: Health Professionals in the Nepal Revolution* (Cambridge: Cambridge University Press, 1998) with a discussion of the neocolonial aspects of nationalist "science fetishism."

[72] More generally, see Warwick Anderson and Vincanne Adams, "Pramoedya's Chickens: Postcolonial Studies of Technoscience," in Edward J. Hackett, Olga Amsterdamska, Michael Lynch, and Judy Wajcman, eds., *The Handbook of Science and Technology Studies*, 3d ed. (Cambridge, Mass.: MIT Press, 2007), 181–204; and Warwick Anderson, "From Subjugated Knowledge to Conjugated Subjects: Science and Globalisation, or Postcolonial Studies of Science?" *Postcolonial Studies* 12 (2009): 389–400.

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