

Re-orienting STS: Emergent Studies of Science, Technology, and Medicine in Southeast Asia

Warwick Anderson

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Abstract This introduction to a special issue on Emergent Studies of Science, Technology, and Medicine in Southeast Asia describes the scope of the essays, the character of the region, and the potential relations of science and technology studies, area studies, and postcolonial studies.

Keywords Science and technology studies · Southeast Asia · Area studies · Postcolonialism

The essays in this special double issue of *East Asian Science Technology, and Society: An International Journal* provide a sampling of the critical studies of science, technology, and medicine emerging from Southeast Asia. Rather than concentrate on one theme or topic, we hope as guest editors to convey a sense of the range and style of science and technology studies (STS) taking form in the region. In particular, we want to extend in a very practical manner, through this special issue, the geographical scope and analytic depth of what might count as STS.

In January 2009, some 20 scholars assembled at the Asia Research Institute of the National University of Singapore (NUS) to discuss pre-circulated essays on science, technology, and medicine in Southeast Asia. The host institution and the University

W. Anderson (✉)

Department of History and Centre for Values, Ethics and the Law, University of Sydney, Sydney
NSW 2006, Australia
e-mail: wanderson@usyd.edu.au

W. Anderson

Department of Medical History and Bioethics, University of Wisconsin-Madison, Madison, WI
53706, USA

of Sydney (another sponsor of the meeting) contributed most of the participants, though many others came from elsewhere in the region or from the USA and Canada.¹ Even if most of the critical research was still taking place at universities outside Southeast Asia, increasingly, those scholars originally from the region were the ones doing it, while new programs, like the energetic group at NUS, were developing rapidly within the region. Thus, the Singapore gathering felt particularly timely and strategically located. It was, so we said, the first conference dedicated specifically to STS in Southeast Asia. It was a novel opportunity for these previously dispersed scholars to meet one another and discuss their emerging common interests. Frequently, participants noted that such a gathering would have been inconceivable just 5 years earlier. Now, it seemed we were following in the wake of rapidly institutionalized STS scholarship in East Asia and South Asia—or had we already deviated onto our own course? At any rate, here, incontestably, was an example of the spread of STS—globalization in action.

The Singapore meeting was one of the stepping-stones—or staging posts—on the route to this special double issue of the *EASTS Journal*. It presented us with a chance to reflect on the new field, reassess our findings, revise our essays, and consolidate an intellectual community. Admittedly, some of us were a little uneasy, as well as surprised, when so many essays focused on Indonesia, and we struggled to find others on the Philippines and Thailand. But coverage of an emerging field will always be patchy and partial. We also observed, with some initial perplexity, an interesting drift toward history of medicine and public health, even though we had sought to distinguish this project from other efforts (including a couple of earlier conferences) to promote such historical studies in the region. Of course, this default drive may simply reflect the colonial legacy, since training in medicine was the first exposure of most of the colonized elite to Western science—in this regard, postcolonial science studies will necessarily possess strong and distinctive medical and historical components. In any case, it soon became clear that even essays with a medical bent drew carefully, and often inventively, on an analytic framework derived from science studies.

In seeking evidence of STS in Southeast Asia, we cast our net wide, though some may argue not widely enough. Many of us expressed the hope that science studies would develop a distinctive form and style in the region, a fresh genre that should be encouraged, not suppressed. At the meeting, I repeatedly urged that we not impose any outside shape or template on emerging research; rather, we should cultivate whatever grows best on our own allotment, even if it looks pretty wild. Yet, it soon

¹ Among those in attendance were the editors and authors of this special issue (except for Catherine Waldby); Chang Jiat Hwee, Peter Boomgaard, Mercedes Planta, and Raquel A. G. Reyes (all of whom presented additional papers); and Filomeno Aguilar, Jr., Ryan Bishop, Gregory Clancey, John Dimoia, Prasenjit Duara, Michael M. J. Fischer, Fu Daiwie, V. V. Krishna, Roy Macleod, Anthony Reid, and T. S. Gopi Rethinaraj (who served as discussants and informal commentators). Greg Clancey and his team proved generous hosts in Singapore. We are grateful to the National University of Singapore, the University of Sydney International Development Program, and the Taiwan National Science Council for making this workshop possible. Hans Pols and Cathy Waldby were particularly helpful in securing funding from Sydney. My co-editors, Sulfikar Amir and Suzanne Moon, kindly offered advice on the introduction. Many of the ideas expressed here emerged in discussion with Adele E. Clarke during our 2005 collaborative residency at the Rockefeller Study Center, Bellagio. This special issue could not have happened without the enthusiastic support of Fu Daiwie and his colleagues in Taiwan.

became clear that we all had definite views of what really constituted STS. Indeed, some participants pointed out that we had omitted vernacular STS programs in engineering schools and the like, scattered throughout Southeast Asia. Mostly conducted by professionals attempting to inculcate “humane values” in resistant students, these efforts seem primarily pedagogical, and any research is generally policy oriented, not critical.² All the same, their absence from our Singapore conference was regrettable.

Our initiative in Singapore entered a field already densely populated with local and national historical studies of science, technology, and medicine. In recent years, the history of colonial medicine has flourished in Southeast Asia, providing us with multiple monographs on this variegated imperial terrain (e.g., Manderson 2002; Monnais-Rousselot 1999; W. Anderson 2006; see also Owen 1987). Additionally, fresh studies of colonial technology and science are now appearing (e.g., Mrazek 2002, Anderson 2007, Moon 2007, Cook 2007). During the 1960s and 1970s, many scholars and nationalist bureaucrats in the region had written useful, and later unjustly neglected, articles on the local development of science and technology, even if these days, they can seem rather too tinged with modernization theory. Moreover, many of us felt that we might also profitably bring some of the critical anthropology of development and modernity into conversation with emerging science studies in the region. Gathering in Singapore, we believed it timely to connect and draw together as many as possible of these dispersed and heterogeneous studies.

Our use of the term “emergent” therefore is neither accident nor faddish gesture. We want to suggest that a complex and novel, yet coherent, configuration might develop out of the interaction of many different elements (see Fischer 2004). As the psychologist Lewes (1875, 412) observed with the emergent, “instead of adding measurable motion to measurable motion, or things of one kind to other individuals of their kind, there is a co-operation of things of unlike kinds. The emergent is unlike its components insofar as these are incommensurable, and it cannot be reduced to their sum or their difference”. Thus, we might say the whole of STS in Southeast Asia will prove more complex and unprecedented than merely the sum of the parts assembled at Singapore.

1 The Meaning of “Southeast Asia”

The previously marginal place of Southeast Asia in STS in East Asia (or South Asia, for that matter) is a tribute to the strength of the boundaries around post-World War II area studies. Borders to the north and west have proven remarkably durable in the scholarly imagination despite the considerable traffic in people and culture across them. For centuries, waves of influence from Sanskritized states moved eastwards through Indochina and the Malay archipelago. Buddhist pilgrims from northeast Asia passed along the southern coasts, through a region known as Nanyang or Nampo, on their way to shrines in South Asia. Local potentates in what became

² Many of us wanted to prevent STS from dwindling into what Rudolf Mrazek called, in a later email to me (June 26, 2009), “a consultant archive for producers, marketers, corporations”—hence, the emphasis on *critical* studies.

Southeast Asia sent missions northwards into China. Traders from southern China migrated toward equatorial lands, sometimes marrying into indigenous families. During the nineteenth century, Chinese laborers also moved south—though more recently, of course, a reverse flow of workers northwards has been occurring. While Singapore became, in effect, another Chinese state, the descendants of Hokkienese, Cantonese, and Teochiu in Indonesia and Malaysia often have encountered resentment and hostility. Commercial and investment flows, along with the development of tourism and educational linkages, have further connected and integrated East Asia during the past few decades. Yet, north and south have generally remained separate in conventional scholarship.

The durability of this geographic imaginary is especially surprising since the category of “Southeast Asia” is a relatively recent invention, and its constituents are still ambiguous, or contestable. Indonesia, Brunei, Singapore, Malaysia, the Philippines, Vietnam, Laos, Cambodia, Thailand, Burma, and now, Timor Leste, make up the hard core of Southeast Asia—but then there are the anomalies and lacunae, like the arbitrary division of the island of New Guinea or the failure to recognize historic links to Taiwan, Hainan, southern China, Sri Lanka, and northern Australia. Some historians of the Philippines would argue that for centuries, this archipelago was facing east across the Pacific, toward Latin America, trying to ignore its Asian entanglements. What Benedict Anderson (1998, 4) calls the “strange history of mottled imperialism” has meant that the local elite in the region often looked hopefully toward a number of different metropolitan centers and discounted more proximate anxieties and influences. Colonial claims were many and varied, and sometimes hallowed by centuries of usage: the imperial mosaic included Spain, the Netherlands, Britain, Portugal, France, and the USA—along with the confusing semi-colonial or quasi-colonial status of Siam (Thailand). For a brief moment in the 1940s, the region reluctantly became part of Japan’s greater East Asian “co-prosperity sphere”. Thus, all sorts of colonial models of governance, forms of nationalism, and patterns of decolonization have rubbed up against one another in Southeast Asia during the past 500 years—providing contemporary postcolonial scholars with perfect grounds for comparison.

“Remote, heterogeneous, and...imperialially segmented”, Benedict Anderson (1998, 5) writes, “it is not very surprising that the region was late in its unitary naming”. Southeast Asia emerged as an intellectual construct only in the 1940s, its legitimacy asserted largely by North American scholars (e.g., Lasker 1944, 1950; Hall 1955), and its appeal enhanced by the ensuing cold war and quest for anti-communist hegemony (Anderson 1992). Yale opened its Southeast Asian studies program in 1947, and Cornell followed in 1950; before long, and especially after the Soviet launch of Sputnik in 1957, research universities across the USA (and elsewhere) boasted some expertise in the new “region”. Wars in Indochina focused even more American attention on Southeast Asia in the 1960s and helped shift the disciplinary emphasis in area studies toward political science, anthropology, and modern history—permitting the production of more functionalist and serviceable knowledge. No wonder then “Southeast Asia was more real, in the 1950s and 1960s, to people in American universities than to anyone else” (Anderson, 1998, 10). Some would argue that Southeast Asia is still more “real” intellectually than it is politically or culturally.

But it would be foolish to deny that since the 1960s, something of “Southeast Asia” has crystallized locally in a regionalism amalgamating neo-colonial, anti-imperial, and market formations. Admittedly, the emergent region remained for some years a patchwork of authoritarian governments, democratic movements, and separatist rebellions, further fragmented by religious observance and cultural style. Yet, as early as 1954, local states established, at the prompting of the USA, the Southeast Asian Treaty Organization, based first in Manila, then Bangkok; and by the late 1960s, the Association of Southeast Asian Nations grew to substitute for it. At the same time, transnational commercial, educational, and political bonds were becoming ever more intense and significant. Large parts of the region endured similar patterns of development, environmental degradation, democratization, and urbanization. Previously separate paths to “modernity” had begun to converge, especially after the Asian financial crisis of 1997–1998, which greatly reshaped local technoscientific trajectories (Amir 2009; Waldby 2009). The region gave us new concepts and models, such as the “Third World”, “guided democracy”, “Buddhist socialism”, “people power”, and “Asian values”. More pertinently, it also offers a profusion of sites for distinctive configurations of science, technology, and society.

2 Southeast Asia as a Science Studies Zone

A touchstone of many of these essays is the continuing impact of the mottled imperial past of Southeast Asia on contemporary technoscientific assemblages. Some authors chose to engage directly with the various colonial configurations of medicine and science in the region. Thus, Hans Pols’ (2009) study of hybrid therapeutic formations in the Dutch East Indies sensitively anticipates the eclecticism of the postcolonial Indonesian medical marketplace. In this essay, Pols reveals the contested translations of therapeutic practice, the gendered and racialized assessments of medical credibility or expertise, and the changing patterns of circulation of knowledge during the colonial period—all of which have parallels, of course, in our own times. Liew (2009) similarly is concerned with the mediators of colonial medical knowledge, in this case, the English language newspapers of Malaya. His study of the construction of what is fundamentally a biopolitical platform adds considerably to our understanding of the creation of a scientized subjectivity or governmentality during the colonial period. Aso (2009) shifts the focus from colonial biomedicine and its interpreters to agricultural and environmental sciences in French Indochina. Importantly, he traces the colonial state’s outsourcing of development to business interests and the consequent shift in intellectual property regimes and access to scientific knowledge, suggesting significant precedents for contemporary commercial globalization.

The transition from colonial to temporally postcolonial configurations of technoscience is often elided in historical accounts. But Monnais (2009) provides a compelling account of the “indigenization” of biomedical practice in late-colonial Indochina, a richly suggestive story of the beginnings of what has been called global “pharmaceuticalization” (Petryna et al. 2006; Clarke et al. 2009). In an apt sequel to

Pols's essay on therapeutic hybridity, Monnais examines the versatile biography of pharmaceuticals in Vietnam, showing us how colonial legacies shape contemporary treatment choices. The same late-colonial and proto-national technological "stickiness" and friction seem to fascinate Mrazek and Kim (2009). In his characteristically provocative essay, Mrazek describes the engineering of modernity in Boven Digoel concentration camp, an exemplary micro-colony in West Papua, at the eastern edge of Indonesia. Rather than a state of exception or a province of bare life (Agamben 1998), Boven Digoel, like Terezin concentration camp, could generate a strange, even uncanny, postcolonial technological urbanity.

One of the striking features of many of these essays is the salience of the experimental modern site, the disciplinary micro-colony, in the developmental imaginary. In *Colonial Pathologies* (2006), I looked at exemplary colonial sites such as the Manila laboratory, the sanitary market, the American latrine, the Baguio sanatorium, and the Culion leper colony. These experimental modern sites in the Philippines functioned to generate, intensify, and then assimilate human difference within colony and post-colony. They were centers for calculation, acculturation, and estimation of civic virtue. The essays collected here suggest other technoscientific micro-colonies in Southeast Asia, a veritable carceral archipelago (Foucault 1977; Stoler 1995). Now perhaps we should add to the leper colony and cognate heterotopic antecedents, the camp and penal colony (Mrazek and Kim 2009), the plantation (Aso 2009), the agricultural development project (Shepherd 2009), and Singapore's Biopolis (Waldby 2009).

Most of these essays examine in one way or another the contemporary gradations of citizenship and expertise, the relations of technoscience and national projects, and co-construction of credibility and civic status. Thus, Shepherd (2009) explores the agricultural modernization strategies of state and non-government organizations in Timor Leste, explaining how technoscientific projects are translated, rethought, and reinvented through negotiation with the truculent or opportunistic subjects of development. Deploying a critical anthropology of development, Shepherd studies modernist subjectivity and technoscientific consciousness in an out-of-the-way place, describing a sort of tournament of civic value. Shepherd's essay resonates with Sulfikar Amir's (2009) discussion of recent contestation over plans for a nuclear power plant in Indonesia, involving diverse agents including environmental activists, nationalist politicians, religious leaders, and scientists. Amir shows how various social movements sought to frustrate and re-channel the state's nuclear ambitions, making claims to credibility and expertise based on their newly enhanced civic status.

In her essay on Biopolis, Waldby (2009) weaves into a complex fabric these threads of postcolonial medicalization, experimental micro-colony, and modern imbrications of technoscientific credibility with civic status. Waldby carefully connects the biotechnology hub, with its goal of adding value to local biological resources (or creating Asian bio-values), to Singaporean political and economic hopes and fears. Following Ong (2006), she argues that civic recognition is increasingly dependent on the individual's ability to contribute value—here, bio-value—to the economy. In this sense, Biopolis—where probationary citizens make available their biomass for incorporation into the technoscientific future—represents a fascinating recalibration of the Southeast Asian body politic.

3 Science Studies Within and Beyond Area Studies

As we struggle to find useful analytic frameworks to explain the contemporary globalization of science and technology, we might benefit from trying to re-imagine science studies as a form of area studies.³ Setting aside for a moment the cold-war origin and instrumentalist character of much area studies, we could perhaps learn to admire the emphasis on linguistic competence, the importance of fieldwork, the tendency toward a multidisciplinary approach, the opportunity provided for interaction of scholars within and beyond the region, and the desire, often thwarted, for bounded comparison. We might even join other area studies specialists in asking who “we” are, or should be (Rafael 1994). Bringing science studies properly into area studies would have advantages for our understanding of the region too, as STS would surely add materially to scholarship that has been largely political in a dreary, functionalist way, or too often textual and narrowly culturalist in focus.

Thinking about science studies as area studies might help to loosen up our comparative faculties. As Roy Macleod observed at the Singapore workshop, we have ideal types of Atlantic science and Pacific science (Macleod and Rehbock 1994)—perhaps we should ask now whether there is a distinctive Southeast Asia style of science too? Macleod went on to suggest that our conversations in Singapore had already sketched out a genre of regional technoscientific activity imprinted with diverse colonial legacies and marked by cosmopolitan commitments, *entrepôt* experimental sites, complex trading zones, and flexible pattern of circulation. Lots of curves and few straight lines, he remarked. Should we be surprised if science and technology reflect, albeit with distortion, the local features? It would be unwise to assume that technoscientific mobiles are immutable—or that they take serial, not emergent, form.⁴

Of course, we must also be careful not to essentialize or over-simplify geographical and cultural difference. Sadly, the comparisons that thrive in area studies are often static and typological, lacking the dynamism and specificity that would better illuminate how science and technology travel. We need to know more about the particulars and contingencies of the dwellings and journeys of technoscience in Southeast Asia and elsewhere (Clifford 1992). We have to recognize how these hybrid shapes and assemblages inhabit interstitial spaces, and how, like humans, they cross borders and mold to migration, exile, and diaspora. That is, we still require some means, such as postcolonial studies, to reveal the heterogeneous, haunted, uneven terrain of contemporary power relations within and beyond our region—what Michael Dutton (2002, 527), in his critique of area studies, calls a “tale of otherness, difference, and dissent that lets us call into question the epistemic violence of scientific incorporation”. Maybe not all the time, but at least occasionally, we need this.

Let us have area studies of technoscience, then, but only when viewed through a postcolonial lens (Anderson 2002; Anderson and Adams 2007).

³ My thoughts on this were stimulated by a recent discussion in the *EASTS Journal* (Fu 2008; Thompson 2008; Chen 2008; Lie 2008).

⁴ The debate about how science travels—whether as immutable or mutable mobiles—has an interesting parallel in contentions about the development of nationalism, expressed in terms of original and derivative forms, or seriality and exceptionalism (see B. Anderson 2006 and Chatterjee 1993).

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