

Asian Biopoleis: Practice, Place, and Life

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Our title, “Asian Biopoleis: Practice, Place, and Life,” is also the name of a research initiative under way at the National University of Singapore (NUS) since 2010, and is the theme of this issue.¹ The NUS project is likely the first comprehensive social science and humanities research collaboration, housed at a major university and funded by a national granting agency, dedicated to bioscience and biomedicine in Asia. Given Singapore’s close identification with this realm of knowledge creation, capital accumulation, clinical and laboratory practice, visual imaging, and storytelling—particularly embodied in the creation of its science cities—the STS clusters of NUS’s Faculty of Arts and Social Sciences and the Asia Research Institute thought it timely to begin generating insightful scholarship about bioscience/biomedicine from this corner of the world. While some fine articles and book chapters by North American, Australian, and European scholars have been written *about* biotechnology in Southeast Asia, less has been written *from* Southeast Asia, or in cooperation with Singapore-

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¹ The full and official name of the NUS project is “Asian Biopoleis: Biotechnology and Biomedicine as Emergent Forms of Life and Practice.” It is headquartered in the STS Research Cluster of the Asia Research Institute at NUS.

based scholars. The present *EASTS* issue and a 2012 special issue of the journal *Science, Technology, and Society* (vol. 17, no. 1)² are early steps toward bringing the growing scholarship on biomedicine in Southeast Asia (and East Asia through the lens of Southeast Asian institutions and projects) to a regional and global audience.

Biopoleis is the plural of Biopolis, the name of Singapore's foremost biomedical research center, created at the turn of the millennium. At the time, Singapore itself was referred to in many press accounts as the "biopolis of Asia," replacing the nickname of the previous decade, the "intelligent island," whose reference point had been the introduction of information technology (Clancey 2012). The term *biopolis* embraces more than simply infrastructure and investment, capturing both "the way of life of human collectives" and "the city-state, the ancient space of governance, and citizenship" (Waldby 2009: 367). In hindsight, that attempt at branding greatly underestimated the scale and intensity of interest in biomedical research all over Asia, a frenzy of science-city building (and, in some instances, conversion) that has yet to crest. It is now more appropriate to speak of Asian biopoleis, archipelagos of geographically dispersed but increasingly imbricated places where biomedicine is practiced, defined, and made civic, from Turkey and Iran to Korea and Japan. Asia itself is in some sense being redefined and reimagined through the increased ubiquity of this research, and whole populations are being brought within its rubric. That this is largely an urban phenomenon, and one increasingly mixed up with issues of governance and even political identity, makes the "-polis" label appropriate even beyond the growing theoretical association of this sector with "biopolitics."

The Asian Biopoleis project (see www.asianbiopoleis.com) conducted its first workshop in January 2011, with eleven speakers from outside Singapore and a similar number from NUS.³ The six paper sessions reflected interdisciplinary and regional convergences, with contributions from Singapore, China, India, Japan, Korea, Thailand, and Vietnam, and from the perspectives of anthropology, critical theory, design, history, philosophy, and sociology. Panels included "Biomedicine and Singapore"; "Securities, Standards and Policy"; "Laboratories, Networks, and Practices"; "Bio-sampling and Biobanking"; and "Philosophy, Religion and Meaning." On the third day of the workshop, a panel session titled "Consumer Genomics, Citizen Science, and DIYBio Movements" was held at the Genome Institute of Singapore (GIS) in the heart of the Singapore Biopolis, reflecting ongoing engagement with Asian biotech/science/medical labs and institutes. Edison Liu, GIS director and president of the Human Genome Organization (HUGO), was a collaborator in this project as well as an inspiration. The eight articles on this subject (two of which, by Michael M. J. Fischer and Philip Cho, will appear in a subsequent *EASTS* issue) represent a cross section of the papers presented at the conference. A second workshop has since taken place in Singapore, in July 2012, and a third is scheduled for July 2013, in conjunction with the biannual conference of the Asia Pacific STS Network.

Biomedicine and bioscience are unusual, among science projects, in the intensity of the social science and humanities attention given their practice from the beginning.

² See especially the editorial introduction and articles by Clancey; Coopmans, Graham, and Hamzdah; Phillips; and Buergi in *Science, Technology, and Society* (vol. 17, no. 1).

³ This and subsequent conferences were sponsored by grants from Singapore's Ministry of Education and the Humanities and Social Science Research Fund of NUS.

This is partly the result, of course, of scientists themselves directing the attention, as Margaret Sleeboom-Faulkner points out in her article in this issue. As early as the 1980s, James Watson insisted that 3–5 percent of the money spent at the US National Institutes of Health (NIH) be set aside to study and answer questions regarding the ethical, legal, and social implications (ELSI) of the Human Genome Project. Since then, the interdisciplinary field of “biotechnology and society” (particularly genomics) has mushroomed to include researchers in virtually every academic discipline and nearly every country with research universities. “Between 1990 and 2007, ELSI-funded activities included more than 400 research and education projects which have produced hundreds of peer-reviewed journal articles, books, newsletters, Web sites, and broadcast media programs as well as dozens of workshops, conferences, and related activities” (National Institutes of Health 2008: 162). Other US funding bodies and universities greatly augmented this support. MIT, for example, hosted a series of major international conferences over the three-year period 2006–8 on relations between genetics and the concepts of race and ethnicity.⁴ As early as 1994, Stanford had created the Luce Professorship in Biotechnology and Society, initiating a series of chaired professorships and centers across the American university landscape with similar themes and missions.

In Europe, the United Kingdom took the lead in government-funded and university-supported scholarship on issues related to biotechnology, biomedicine, and society. There are now more than a dozen university-level social science research centers working primarily on this field in the United Kingdom alone, including units at most of the country’s leading universities.⁵ Moreover, the Economics and Social Research Council, the largest social science funding body in the United Kingdom, has invested more than €20 million since 2000 in a Genomics Network consisting of four research centers (Innogen, Cesagen, Egenis, and the Genomics Forum) sited across five universities (Edinburgh, Exeter, the Open University, Lancaster, and Cardiff).

Despite the high quality and quantity of social science and humanities literature on this phenomenon in the West, very little of it discusses Asian countries, sites, or societies. The largest Asian site for English-language research in this field is likely India, but even there, the bulk of work is published and consumed internally and has had less effect on global discussion than it might or should. Regarding Southeast and even East Asia, the quantity (though not quality) of high-level work published in English has been restricted and thus underrepresents the importance and complexity of biotech initiatives in this region.⁶ At the recent MIT conferences, for example, “race

⁴ These conferences were sponsored by the Center for the Study of Diversity at MIT (see web.mit.edu/csd/CSD/Homepage.html). Many other American centers, such as the Berman Institute of Bioethics at Johns Hopkins University and the Yale Interdisciplinary Center for Bioethics, sponsor similar conferences.

⁵ These university-level social science research centers include the Centre for Medical Genetics and Policy at the University of Cambridge; the Centre for Social and Economic Research on Innovation in Genomics (Innogen), Edinburgh University and the Open University; the Centre for the Study of Bioscience, Biomedicine, Biotechnology, and Society, London School of Economics; the Centre for Biomedicine and Society, King’s College London; the Institute for the Study of Genetics, Biorisks, and Society, University of Nottingham; and the Centre for Genomics in Society, University of Exeter.

⁶ Besides journal literature, which is discussed below, the field has produced a few notable edited book collections that consider biomedical issues pan-regionally, including Ong and Chen 2010 and Sleeboom-Faulkner 2004, 2009, and 2010.

and ethnicity” issues were discussed largely in terms of Europe, the Americas, and Africa; the potentially very significant and interesting relationships between biotechnology and society in this half of the world have been comparatively underresearched.

One reason for this disparity is that the huge investment of academic funds and resources on the scientific research side of biotech in Asia has not been met by corresponding funding for social scientists and humanities scholars working in the same area, except in the very particular field of bioethics (especially as it relates to biomedicine, and more particularly to medical ethics). The result is that preliminary work on the social and cultural influence of biotechnology in Asia was largely produced by scholars based in universities outside of Asia, who made Asia a field-study site rather than a research base. Those of us in the region welcome their presence here, as a spur to our own initiatives and as productive of research partnerships. Those partnerships will be sustained, however, only if social science and humanities funding levels in Asia begin to match those available in the West. As we write, there are indications that the situation is becoming more balanced, partly because the modest but steady rise in grant support for social science research in Asia is coinciding with a constriction of such funding for such projects in many of our Western partner institutions.

EASTS, more than any Asian social science journal, has produced consistent and high-quality articles on biomedicine/bioscience in Asia, of which this issue is only the most recent. Since 2008, four subject issues (and parts of others) have been devoted to this theme: “The Hwang Scandal and Human Embryonic Stem-Cell Research,” “Gender and Reproductive Technologies in East Asia,” “Biotechnology in East Asian Societies: Controversies and Governance,” and most recently, “Biopolitics in China.” That biomedicine has been revisited in *EASTS* more than any other scientific realm speaks not only to the large number of scholars working in this area but also to biotech’s charisma in Asia at the present moment and, perhaps less apparent, to the unique historical importance of medicine in East and Southeast Asia. Whereas in North America, for instance, scholarship on the histories of medicine, science, and technology is vigorous enough to warrant three separate scholarly societies, the historical and social study of medicine is the more ubiquitous in large parts of Asia, nowhere more so than in Southeast Asia, where “science” until relatively recently (and arguably still) has been subsumed by medicine or has acted as its extension. It is hardly surprising, therefore, that *EASTS*’s pioneering subject issue on Southeast Asia, “Reorienting STS: Emergent Studies of Science, Technology, and Medicine in Southeast Asia,” contained mainly articles on medicine. The present issue, on first perusal, appears to continue that trend, reinforcing the association of science with applied as opposed to “blue sky” research. This is the typical way science has been flavored in developmental states. Yet the proliferation of science cities themselves, as sites where a full range of projects and attitudes toward research are displayed and contested, particularly given the constant inflow and outflow of “internationalized” personnel and projects, suggests that medicine’s traditional patronage of science is itself transforming and opening new spaces and possibilities.

The Asian Biopoles project is not restricted to Southeast Asia in its interest or reach, however, even though the inclusion of more articles about and from this region (six out of eight) is one accomplishment of this subject issue. Singapore and Southeast Asia are far more connected to East and South Asia, scientifically and otherwise, than is commonly realized outside the region (see Fischer, forthcoming in a future

EASTS issue). Singapore arguably uses the word *Asia* more often in official and unofficial speech and writing than any city in Asia or the world, seeing itself as a unique interregional crossroads and remembering itself as a city of immigrants. Regional connectivity is our locality and pan-regional hybridity our daily negotiation. It has thus been natural for us to invite regional and global scholarship into our own project, and the articles in the present issue discussing Japan (by Masato Fukushima) and China (by Margaret Sleeboom-Faulkner) point to a wider circle of inclusion in “local” discussions within Singapore’s scholarly and nonscholarly communities. We thus normally populate our conferences and workshops with a cross section of scholars from the regions around us, and particularly to the north and west. “We” likewise include scholars *from* East, South, and Southeast Asia, as well as Australasia, Europe, and North America, in addition to native-born Singaporeans. The “space of flows” that characterizes biomedicine in Singapore is thus mirrored in the social scientists and humanities scholars who study biomedicine here and in the larger region.

The project that the articles in this issue are part of has three distinct but interrelated foci. One is “Global Bioscience in Asia”: Asian biopoleis as conduits for international research bodies (academic, corporate, and hybrid) accessing Asia, and for Asian access to the global biotechnology research realm. Alfred Montoya addresses this quite directly in this article on American models for addressing HIV/AIDS in Vietnam. A second is “*Asian* Biotechnology,” which seeks out the historical trajectories and distinguishing elements of national and regional practices that cannot be explained with reference to global models or Western examples. Alex Gelfert’s article on Singapore biomedicine before its Biopolis is an example of this genre, as is Soraj Hongladarom’s close study of Thai agricultural biotechnology and its ethics. In the case of China, according to Sleeboom-Faulkner, biomedical initiatives may force us to rethink Western theories regarding medical subjectivity. A third focus is the relationship between bioscience labs and their urban hosts. Singapore’s Biopolis, for example, is a site for data collection, theorization, experimentation, and material support, but also for policy initiatives, institution building, social and educational reform, and tissue banking. Knowledge and practices emerging from this nexus potentially reorder not just biomedical practices but everything from the mechanics and meaning of “scientific research” to contemporary understandings of race, ethnicity, and citizenship. Aihwa Ong’s article tackles some of the more subtle political and cultural issues bound up with Singapore’s modern biomedical regime, particularly regarding ethnicity.

The papers presented at our first conference, printed here in their final format, studied Asian biopoleis both in context (understanding their often transformative places in Asian nation-states) and in practice (understanding what goes on inside them and what insights they might give into scientific knowledge production in the twenty-first century). Fukushima’s article on Japanese chemical biology straddles both realms and is a model for future work on emergent new professionalizing projects within bioscience. Cho’s article on the HUGO Pan-Asian SNP Consortium (forthcoming in a future issue) deals with the virtually unexplored question of inter-Asian laboratory collaboration and, in this case, the effective re-creation of “Asia” as genomic network. Fischer’s article (likewise forthcoming) cuts across all three foci. He situates Singapore’s Biopolis in a global scheme of bioscience, biomedicine, and biotechnology while attending closely to the trajectories of individual policies,

initiatives, and scientists in Singapore from 2000 to 2010. His ethnographic study of this “ecology of creativity and innovation” positions the Biopolis not only as a “place of science,” a local landmark, and a conflation of scientific networks but also as a partially fulfilled if continuing promise and ideal.

Besides the unprecedented geographic range of the Asian Biopoleis project, which ultimately seeks to cover bioscience initiatives in South, Southeast, and East Asia, it is seriously committed to interdisciplinarity. The following articles were produced by anthropologists, philosophers, and historians, and the conference itself also included critical theorists, sociologists, media scholars, and some with truly hybrid disciplinary identities. This in turn reflects the highly diverse nature of Singapore-based STS, which is not centered in any one department or discipline and has been as welcoming to humanities scholars as to social scientists. While this precludes topics coalescing around discrete and delimiting questions, it is appropriate for a new field whose questions are still emergent. It also spreads the work of understanding Asian bioscience across a greater range of perspectives than one commonly finds in North American or European research institutes.

While the Asian Biopoleis project has managed to bring together scholars working in a diverse range of countries and fields, there is still a deficit in border-crossing research. Scientific research and application cross borders far more easily, it appears, than do the social science and humanities scholars who claim to follow them. One lesson from the recent conference was how similar institutions, objects, and protocols were multiplying across Asia, and how little we knew about these pathways and networks, which are indeed difficult to follow. Subsequent conferences will attempt to deal more critically with that issue, among others.

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