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Multiscale Bioecology Framework: A Blurred
Genre Manifesto/Agenda for an Emergent Field*

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Theorizing STS from Asia—Toward an STS Multiscale Bioecology Framework: A Blurred Genre Manifesto/Agenda for an Emergent Field

Michael M. J. Fischer

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Abstract East Asia and Southeast Asia provide at least four relational locales or sites of cultural critique and materials for new twenty-first century theory construction governed by growing biological and ecological knowledge. I document a moment in East Asian and Southeast Asian STS that grounds methodological advocacy for how anthropological STS initiatives revise received models and theories and how they work from multiple and differentiated Asian sites, thereby focusing on the importance of Asian examples in global theory without sliding into meaningless discussions of Asian essentialisms or East versus West orientalisms and occidentalisms. The four relational technoscientific sites and perspectives are those of (a) scientists as social hieroglyphs and peopled networks; (b) hidden curriculums and education reforms; (c) geoportraits of influencing machines, bioecological entanglements, and cultural flows; and (d) disaster and repair cycles, new and old cultural genres for coping, and structures of feelings. By citing the growing new anthropological STS ethnographic work in a variety of Asian locales, I suggest that new narratives and models are already out there as emergent forms of life, that is, as contested, shifting third spaces (forming in the interstices of old distinctions and categories) and ethical plateaus (terrains of decision making where multiple technological changes intersect and impose double-binds or trade-offs among simultaneous imperatives). [208 words]

Keywords peopled networks · hidden curriculums · bioecological entanglements · disaster-and-repair cycles · structures of feeling

Anthropological STS is ever asking how the emergent world in which we live is out of synch with available theoretical models. East Asia and Southeast Asia provide important strategic locales or sites of cultural critique and materials for new theory construction. Perhaps one might even claim that anthropological STS can provide a kind of global theory from the East, analogous to global theory from the South; the

M. M. J. Fischer
Science, Technology, and Society Program, Massachusetts Institute of Technology, USA
e-mail: mfischer@mit.edu

1 technoscientific claims, for example, and the “look and feel” (to adapt a legal term) of
2 modernity seem, at least for the present moment, quite different.

3 Among the threads worth tracking in new ethnographic work is the way in which
4 multiscaled biological and ecological knowledge about the world in which we live is
5 growing, and particularly how changes in ecology, whether industrially, governmentally,
6 or endogenously driven, are changing social relations. Arguably, cultural and
7 scientific consciousness is transforming from mechanical master narratives of the
8 nineteenth century into more bioecological ones of the twenty-first century, with all
9 the intervening scaled interactions between life and mechanical worlds. The method-
10 ological challenge is to identify critical locales or sites where such interactions are
11 revealed and the analytic moments through which ethnographic projects can be criti-
12 cally focused that (a) undo, in part or whole, theories made elsewhere; (b) acknowl-
13 edge the sense making of different groups of people in Asia about disaster repair, about
14 changing horizons of travel (of things and people), and about grounded conceptual or
15 aesthetic forms; and (c) explore the pervasiveness or gaps and puzzling counterintu-
16 itive entanglements of sociotechnical and technoscientific imaginaries in everyday life.
17 I begin with four such locales/sites in ethnographic projects of my own: (a) the study of
18 scientists’ complex autobiographies and networks as social hieroglyphs; (b) university
19 reform as places of attempts to revise ingrained patterns of consciousness having to do
20 with non-key-performance-indicator modes of incentivizing and supporting creativ-
21 ity; (c) technoscientifically literate artists, who not only are situated and enmeshed in
22 East and Southeast Asian issues and aesthetic traditions but also are forging new
23 aesthetic modes of production; and (d) artists and others living with and puzzling
24 through disasters. Importantly, none of these groups—the scientists, students and
25 educators, artists, and disaster survivors—just wants to advance in, or return to, the
26 old order of things. Like anthropologists and social theorists, they want to make sense
27 of things, build new social forms and future prospects.

28 In this vein I reread some of my own recent work, as well as providing an ethno-
29 graphic reading of new ethnographies and histories by others. I thus document a
30 historical moment in East and Southeast Asian STS. The moment is also one that
31 grounds methodological advocacy. I focus first on scientists as social hieroglyphs and
32 peopled networks. Second, I turn briefly to education reform reflected particularly in
33 university-based theater, arts, STS, and the demand for teaching both critical thinking
34 and creativity in environments whose habitus is knowledge performance indicators
35 and rule following. Third, I turn to other technoscientifically informed arts (read: in
36 parallel with ethnographies) as geopolitical portraits, material or biological entangle-
37 ments, and influencing machines that, I argue, illustrate, deconstruct, comment on, and
38 provide cultural critique (not merely criticism), as well as emergent platforms for
39 locally grounded but globally aware horizons of imagination and imaginaries for the
40 future. These arts and entanglements call for ethnographic explorations and accounts
41 that, I suggest, are quite different from art-historical typological characterizations of
42 contemporary art allegedly succeeding modern art, subordinated to legibility by West-
43 ern collectors and curators.¹ And fourth, I turn to future-oriented disaster responses and
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¹ For discussions of these interpretive dilemmas, the way artists themselves are subject to negotiating these
contradictory demands, and the way in which institution affordances for exhibition also are shaped by these
contradictory interpretive imperatives, see [Welland 2018](#) and [Teh 2017](#).

1 repair and aesthetic modes of production that in part overlap with the two previous
2 sections but force attention to both ecological reorganization (what I sometimes call
3 “scratching at the Anthropocene”), and to civil society self-help where trust in gov-
4 ernments, nongovernmental organizations, humanitarian aid, and the like break down.
5 All four are imbricated in and have implications for one another: the old anthropolog-
6 ical rule, “you cannot change only one thing.” In the conclusion, I briefly return to the
7 question of how these anthropological STS initiatives revise received models and
8 theories and how they work from multiple and differentiated Asian sites, thereby
9 focusing on the importance of Asian examples in global theory, without sliding into
10 meaningless discussions of Asian essentialisms or East versus West orientalisms and
11 occidentalisms.

14 **1 Scientists as Social Hieroglyphs and Peopled Networks**

16 “Where did BGI (formerly the Beijing Genome Institute) start?,” I asked cofounder
17 Jian Wang, to which he immediately replied, “Seattle, Washington, in LeRoy Hood’s
18 lab,” where he was a postdoc. He then gave an energetic account of returning to China,
19 the disinterest of the Chinese Academy of Sciences, raising money by establishing a
20 reagent company, getting additional investment via his cofounder from the latter’s
21 hometown mayor, moving away from Beijing, getting his American advisers’ help
22 in being assigned a small piece of the Human Genome Project to sequence, getting the
23 loan of sequencing machines from Illumina, Inc. through his Seattle connections, and
24 setting up in Shenzhen with yet a third, younger-generation cofounder who, as the story
25 goes, initially dropped out of university to train with them and eventually ended up not
26 only as the leader of BGI (now having moved on to his own start up) but also as a
27 professor cross-appointed in Copenhagen (Fischer 2018c). For me, Jian Wang’s story
28 is a wonderful historical cross section entrée into the last three generations of China’s
29 science, cultural, and technological history from the Cultural Revolution to the present,
30 one that looks quite different from the conventional accounts available so far but that
31 will change rapidly now, as I illustrate below.

32 I call such accounts of individual scientists’ complicated trajectories “social hiero-
33 glyphs,” insofar as they are narrated to reveal larger social processes, institutional
34 developments, and strategies that play differentially across global, national, disciplin-
35 ary, local, and individual maneuverings. Put otherwise, they provide historical cross
36 sections to what are often told as only individual, institutional, or science or technical
37 histories. Complex life histories are a predictably good place for anthropological STS
38 to look for, and provoke articulation of, cultural critique. They often provide insightful
39 comparative perspectives as scientists move from place to place.

40 Other recent STS works draw a similar picture of complex networks. Joy Zhang
41 (2012) writes about the brokering work by circulating Chinese scientists, helping
42 devise ethics protocols for stem cell research that are both global and attentive to
43 local demands, thereby synthesizing new global “interoperable standards,” to use
44 computer lingo, in which China, for instance, is seen not as either importer or follower
45 but a market-making producer. Similarly the earlier work of Wen-Hua Kuo (2009) on
46 the harmonization of pharmaceutical clinical trials shows Japan played a key role
47 blocking Euro-American hegemony and how Taiwan provided the biostatistical

1 expertise for designing “bridge trials” that could satisfy both the demand for local trials
2 on local bodies and the demand of the big pharma for global trials with sufficiently
3 large and diverse cohorts. Taiwan had an interest in being a player in these scientific
4 networks both as a potential clinical trial provider and Asian gateway and so as not to
5 be left out of scientific developments. The expertise required was seeded by Taiwanese
6 biostatisticians who had gained years of experience in the United States. Zhang and
7 Kuo both focus on what in STS are often called the production of new Asian-defined
8 “epistemological objects” as well as “communities of expertise.”²

9 Ian Condry’s (2013) ethnography of Japanese anime film production shows a dif-
10 ferent kind of distributed transnational production network, packaged as Japanese
11 cultural soft power.³ My own work on the Pan-Asian SNP Consortium, commented
12 on more dismissively by Aihwa Ong (2017), is another a form of “scientific diplo-
13 macy” or brokering, with scientific trade agreements of access to, in this case, sequenc-
14 ing and computational resources, in exchange for contributing data and analysis to
15 intellectual consortia.⁴ Such consortia arrangements are intended to both acknowledge
16 and, if not overcome, make scientifically synergistic local nationalisms in both South-
17 east and East Asia (Fischer 2013). Sharon Traweek (1992, 1995, 2012), even earlier,
18 did pioneering work on female physicists in Japan who negotiated the harsh patriarchal
19 hierarchies of academic and research worlds by leveraging studies, expertise, and
20 networks of connections forged abroad. As with the Zhang and Kuo examples, my
21 and Traweek’s work addresses the creation of new organizational and epistemic forms
22 to bridge and negotiate cultural and political differences that are matters of cultural
23 capital and distinction yet parts of the general republic of science.

24 Two more recent ethnographic works using mixed historical-ethnographic methods
25 and a third work using social-historical methods, will suffice as illustrations for this
26 first locus of new critical work that I call social hieroglyphics and “peopled STS
27 networks” (as opposed to Latourian flat networks).

28 Lyle Fearnley (2013) and Frédéric Keck (2017) provide complementary anthropo-
29 logical STS work on avian influenza in China that conceptually revises previous
30 models of work in infectious disease and ecology. Fearnley’s work is on the livestock
31 revolution since the Mao period and the effort to catch up with that revolution by new
32 training programs for a national veterinary corps transformed from duck doctors to
33 statisticians. Development of methods involves competitions between virologists’
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35 ² But see also, more generally, on technoscientific networks, Sunder Rajan 2006, 2017; on the targeting of
36 clinical labor for transnational trials, tissue donation, and surrogacy in India, Cooper and Waldby 2014; on
37 unintended consequences of “ethical” laws banning sale of kidney organs in India set within transnational
38 training and return migration of surgeons, and expanding bioavailability with new technologies, Cohen 1999
39 and 2008; on fetal cell “medical tourism” to China, Song 2017; on air quality, environmentalism, and land use
40 conflicts in Hong Kong entangling questions of legitimacy and authority of expertise between transnational
41 nongovernmental organizations and local organizations, Choy 2011; and on IVF and biotech ethics in China
42 and the U.S., Jiang 2014 and Jiang and Stevens 2015.

43 ³ This is an industry that “creative city” programs in China are rushing to try to emulate (Jiang 2011) and feed
44 into new quantitative indices of governance, called now *zonghe guoli* (comprehensive national power), that
45 include measure of cultural productivity (Greenhalgh 2009).

46 ⁴ For an *EASTS* review of Aihwa Ong’s book, see Fischer 2018a. Ong and Chen’s (2010) earlier edited
47 volume on Asian biotech, which appears in the Experimental Futures series I coedit with Joe Dumit at Duke
University Press (which also publishes *EASTS*), is an important first effort to map anthropological STS
initiatives.

1 modes of estimating vaccine coverage and sampling by epidemiologists who are
2 increasingly distanced from barnyard knowledge and wet markets. Both the livestock
3 revolution and training of veterinarians have incorporated international help while
4 dealing with local imperatives. Fearnley's work demands a shift from an exclusive
5 search for origins (the epidemic center) and geographies of blame (Pearl Delta man-
6 agement of ducks and rice, eating wild animals, tropical effusions of viruses) to atten-
7 tion to the reworkings of ecological relations by nation-scale industrialized agricultural
8 production and distribution, and the demand for new kinds of scientific training and
9 regulatory capacities at local as well as national levels.

10 Keck's work is on the shift from using Hong Kong laboratories (in Latourian or
11 Pasteurian fashion) as centers of calculation constructing sentinel knowledge of
12 spreading epidemics from China, first to active field sampling in China and second,
13 more recently, to comparative genomics done in Singapore. Keck argues brilliantly that
14 expertise in avian virus and avian ecology in Hong Kong, Singapore, Taiwan, and
15 Australia involves not merely scientific or biosecurity discourses but political protec-
16 tive discourses and materialities in dealing with an aggressive Chinese hegemon. It is
17 no coincidence, therefore, that this expertise is being developed on the close external
18 borders of China.

19 A third such revisionary text of theory from what I like to call the "global East" (new
20 models for global processes developed from different Asian locales), using both fine-
21 grained archival and ethnographic methods, is [Liz Chee's 2015 dissertation](#) and [forth-](#)
22 [coming \(2019\) volume on *Mao's Bestiary*](#). Chee argues, based on archival work, as
23 well as ethnographic work in China's leading Traditional Medicine University in
24 Guangzhou, that animal parts became a growth industry only under Mao in large
25 part to earn foreign hard currency and were not a significant part of traditional Chinese
26 medicine, as often assumed. This throws a whole new light not only historically on the
27 Mao period (including a fascinating "chicken blood" therapy, loosely linked to Russian
28 hormonal and phage therapies [[Chee 2018](#)]) but also on the dynamics of the contem-
29 porary global trade in wildlife said to be rooted in Chinese traditional medicine.

30 My final example in this section is Warwick [Anderson's \(2008\)](#) brilliant account,
31 using the diaries of Carleton Gajdusek, exploring the history of the neurodegenerative
32 disease kuru, the International Biological Program of the 1960s, and the imperial
33 competitions between F. MacFarlane Burnet's Australian research empire and Gajdu-
34 sek's US National Institutes of Health. Kuru was a celebrity disease in the 1960s,
35 sometimes speculated to be a culture-specific syndrome, until anthropological sleuth-
36 ing (by Shirley Lindholm and Robert Glassie) through genealogies showed a correla-
37 tion with funerary practices. This then limited the search to biologically establishing
38 what would come to be called first by Gadjusek "slow viruses" and later by Stanley
39 Prusner abnormally folded prions as a cause of neurodegenerative spongiform
40 encephalopathy. (These prions also cause mad cow disease or bovine spongiform
41 encephalopathy, as well as Creutzfeldt-Jakob disease in humans.) Through Gajdusek's
42 diaries and other archival work, as well as visiting the Fore (who once had the disease),
43 Anderson is able to paint a vividly rich picture of Gajdusek as a social hieroglyph, as
44 well as the peopled scientific networks in Australia, New Guinea, and the United
45 States. F. MacFarlane Burnet thought of New Guinea (administered by Australia) as
46 an Australian scientific reserve for ecological study of viruses and, indeed, trained the
47 key cadre of avian flu virologists who are part of Keck's later avian influenza story,

1 while Gajdusek used his considerable talents and willingness to live in New Guinea
2 with his subjects of investigation and attract Australian colleagues such as Michael
3 Alpers, who also spent large parts of his career not only working on the kuru problem
4 but also establishing a hospital and research institute in the New Guinea highlands
5 nearby. The International Biological Program was one of the important platforms for
6 global science making (along with the International Geophysical Year) that plays a key
7 role in the anthropological literature in the Amazon as well, one of those important
8 endeavors ripe for reexamination “from the ground up,” as Anderson has done (Fischer
9 2001, 2011). The imaginaries of the Fore as well as those of the scientists (eleven Nobel
10 laureates are among the characters in Anderson’s richly plotted narrative) provide quite
11 extraordinary case studies in public understanding of science and public health inter-
12 vention between the Fore and the scientific republic (despite its internal competitions).
13 No simple master narrative here can do full justice to an Asian-Pacific specificity that
14 became a global knowledge imperative.

15 The ethnographic work of all these texts is richly historicized. They invest much
16 labor to undo the stereotypes of much ingrained orientalist and East versus West
17 historiography, or attributions of all developments to colonial and postcolonial rela-
18 tions.

2 Hidden Curriculums and Education Reform

23 In January 2012 while I was at Tembusu College of the National University of Singa-
24 pore (NUS), I attended a performance at the NUS Cultural Center of the scripted
25 and student-performed comedic musical drama called *White Collar* by Lingying Ng
26 (a third-year theater arts student).⁵ It was a tightly choreographed hilarious satire about
27 the stresses of working in a school, staff subject to constant audits, stresses of double-
28 career professional family life (for which the actor-students are being trained), and hot-
29 house staff flirtations (which the actor-students both see and no doubt themselves
30 navigate everyday), as well as about what unclear “out-of-bounds” moral rules
31 apply to student projects. A student project supported by a creative teacher is under
32 threat of cancellation by the principal fearing a visit by his superiors. The production,
33 stunningly beautifully performed, acted out the various tensions that Singaporeans
34 constantly feel and talk about in their high-pressure professional lives.

35 The theater, I began to learn, is among the liveliest venues for thinking about how
36 our technoscientific lifestyles are changing our psychologies, our imaginations about
37 the future, our sense of what the sciences and technologies are actually for, and how
38 they draw upon, erase, or reconfigure legacy pasts that are potentially still of use. The
39 arts more generally, not just in college and university curricula but in society at large,
40 are platforms for thinking about the future and how new knowledge society and global
41 networks integrate with local histories, needs, civil society, and the public sphere.

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⁵ Yinling Ng was the scriptwriter. Not to take anything away from her and her student team, part of the professionalism was aided by guidance from veteran playwright Huzir Sulaiman and director (now also well-known playwright) Joel Tan. The University Presidential Scholars program has been and continues to be an important venue for producing student plays. The play is available online (see Ng, Tan, and Heng 2012).

1 Indeed, in one count 132 dramatic works were staged in Singapore during 2017 alone
2 by local theater companies, art schools, and semiprofessional companies.

3 On the lookout for science-related productions, one of the first I saw was a produc-
4 tion by the Necessary Stage called *Frozen Angels* about stem cell research. Preparation
5 had included discussion of ethical issues, such as the controversy over harvesting stem
6 cells from human embryos, with Alastair Campbell, the Centennial Professor of Ethics
7 at NUS and a member of the Singapore Bioethics Advisory Commission. All eight
8 roles were played by NUS students, one of whom, a diabetic, felt he had a stake in stem
9 cell research as a potential cure and had done enough background research for the play
10 that he felt ownership. The Necessary Stage is a thirty-year-old professional company
11 with both a wide range of topics its plays have explored and a history of enrolling
12 students and seniors in acting programs, taking plays to venues beyond the usual
13 theater ones, and experimenting with multimedia elements. The idea of cloning, for
14 instance, was played with by having the actors on stage film each other with hand-held
15 cameras and feeding this live onto two screens. Some of the human and psychological
16 implications were explored through three interlocking plots about immortality (discon-
17 tents of college sweethearts who are still together two hundred years later), a woman who
18 steals leftover human eggs from fertility clinics to sell, and an invalid man whose nurse is
19 succeeded by her cloned daughter. A lively discussion followed, as with most of the
20 plays of both this and other theater companies doing plays on socially contested topics
21 (e.g., Theater Practice, TheatreWorks, Black Box, Toy Factory, Wild Rice, Nine Years).
22 The Necessary Stage (whose main resident playwright, Haresh Sharma, has himself
23 written over one hundred plays, staged in collaboration with artistic director Alvin
24 Tan) has done plays on HIV-AIDS, mental illness, old age and rising rents, contested
25 national histories and political repression, coming out as gay, road rage, ethnic and
26 linguistic tensions, dementia, suicide, citizenship, pressures in school (not unlike *White*
27 *Collar* but focused on teenagers in school, not the teachers), and disaster (a verbatim
28 theater production from transcripts of survivors of the 2004 tsunami).

29 Other arts, of course, incubated in universities, art schools, and arts centers are
30 equally important for public arts platforms facilitating cultural reflection, refraction,
31 and cultural critique, including two delightful student murals at Tembusu College, one
32 making fun in an elaborate series of rebus cartoons of contemporary addiction to the
33 Internet and e-devices and their psychosocial effects (see Fig. 1). These were done
34 under the guidance of Margaret Aihua Tan, herself an accomplished feminist perform-
35 ance and installation artist with a PhD in communication and new media, one of
36 whose artworks is an electronic apron, a commentary on the invasion of pervasive
37 computing technology into demands on and domestic spaces of women, but also more
38 generally on Singapore's successive development plan slogans of "Intelligent Nation"
39 and now "Smart Nation."

40 That her work is now located within Tembusu College and she codirects NUS's Art/
41 Science Residency Program is part of an STS initiative within NUS's educational
42 reform experiments. Tembusu is one of four residential colleges that NUS began on
43 a dedicated campus area (now with Yale-NUS as a fifth), each with a slightly different
44 educational focus. Tembusu has styled itself as an STS-inflected curriculum with
45 classes designed around such contemporary technosocial problems as biomedicine
46 in Singapore society (in which I taught for a term), climate change, and model cities
47 (which Margaret Tan leads) and is one of three or more synergistic networks of



Fig. 1. Student mural in the hallway of Tembusu College's classroom building, a commentary on the emptying of heads by pervasive e-devices and computing. Photo: M. M. J. Fischer

emerging STS focus at NUS, in turn working with similar initiatives at the Nanyang Technological University and providing a node in the network supporting the *EASTS* journal. There are other efforts in electronic arts that supplement these STS foci, including at iCube (I³), the building that houses the Keiko and NUS Center for Connective Ubiquitous Technology for Embodiment, or CUTE; and the Department of New Media and Communication, both of which are at NUS.

There are larger issues surrounding not only university reform but also technical and scientific workforce creation and creation of new communities of expertise: how to change ingrained habits of deferring to key performance indicators that have disciplined Singapore's successful and in many ways admirable meritocracy, but that the government itself has put on the agenda as needing change in order to compete in the global knowledge society premised, it is said, on creativity, thinking outside the box, taking risks, design thinking, and being entrepreneurial. There are further buzz words, specific to education: *project-based*, *hands-on*, *active learning* (as opposed to memorization, lecture-based learning, learning to pass standardized tests, and outcome measures). There are, of course, ingrained resistances: repeated demands for measuring everything and fears that this will suck any creativity out of any truly innovative program after an initial trial period of openness. Nonetheless the experiments are both exciting and have their own spin-offs, and unintended consequences.

These are issues that also intersect with the role of the cultural industries, including questions of finance, patronage, and audience. Singapore has been trying with some success to become a global art city, with a biennale, an Art Stage, an Affordable Art Show, a National Design Center, an annual Design Week, the NTU National Center for the Contemporary Arts, the Gillman Barracks (refurbished colonial barracks used now

1 as art galleries and studios), local theater companies, dance companies, and community
2 venues such as the Aliwal and Goodman Arts Centers, along with the both ticketed and
3 free performance spaces at the Esplanade, the ArtScience Museum, and the new Funan
4 Theater and Arts Center under construction by the Wild Rice Theater Company.
5 Always there are pressures and contradictions between creativity and seeking humane
6 ways of living, on the one hand, and searching for revenue streams, efficiencies, and
7 profits on the other; between cultural critique often in small-scale intimate productions,
8 on the one hand, and commercially produced theater and art shows for pure entertain-
9 ment, on the other. Nonetheless, the support and money available in Singapore are an
10 envy of the surrounding Southeast Asian countries, which have had to build their art
11 and cultural critique platforms somewhat differently.

14 3 Geoportraits, Entanglements, Influencing Machines

16 On the eve of Entang Wiharso and Sally Smart's exhibition at the Jakarta National
17 Gallery, on 14 January 2016 three suicide bombers blew themselves up at a police post
18 outside the Sarinah Mall on Thamrin Street, at the Starbucks in the Skyline Building
19 nearby, and near the UN headquarters; two more attackers killed a hostage and injured
20 another, all around the corner from the gallery and from the hotel where my wife and
21 I were staying. It was a dramatic demonstration of Entang Wiharso's theme that forces
22 of vibration affect neurological systems. These provide a medium for the structures of
23 feeling, ones that in many contemporary Indonesian artists' works seem no longer
24 constrained by nationalist identity politics or periodization of art styles. Postindepend-
25 ence, post-decolonialization, post-Reformasi, they are part of the breakout of Southeast
26 Asian, East Asian, and Pacific art onto the global stage. They embroider in older
27 references, cultural forms, geographic locations but move confidently beyond them.
28 With both humor and a steady demand for a humane world beyond gender inequality or
29 peripheralization, their art points to the faults (both geological and social) of the world
30 and ways to move on.

31 At the show's walk-through, Wiharso repeated his notion that "noise, like [that of
32 the] cell phone comes [to be] debated in our bodies" (personal interview 16 January
33 2016, National Gallery, Jakarta) It operates like Viktor Tausk's influencing machines.
34 In Wiharso's version,

35 like a dream, but not a dream, it is a tool, the sound from the television travelled
36 into my brain . . . basically not sound at all, but sound information, and my body
37 became a mediator of the electro-magnetic wave. . . . People who live in Java
38 are different than people who live in Rhode Island or Boston or Nordic countries,
39 because if you live in Java there is a lot of movement. . . . Every second, there is
40 movement in the ground, [which] travel[s] to our nerves and [the] respon[se] in
41 every individual [is] different . . . and that is why when I live in Yoga[karta],
42 I feel like hurry, life is too short, but when I stay in Rhode Island, life is very
43 long. . . . The environment gives affect to us because of our conscious and
44 unconscious. (ibid.)

46 At the entrance, there is a mesmerizing large resin-cast hyperreal forest of Rhode
47 Island bamboo. Four sculptural figures, a family, in dark gowns with the adults' hair tied



Fig. 2. Entang Wiharso, “The intestine is the drama, your inner state; the bamboo is the border” (titled by the artist *Reclaim Paradise—Paradise Lost no. 2*), 2016. Aluminum, car paint, resin, thread, graphite, steel, silicon, electric cable, 290 × 500 × 800 cm. Photo by M. M. J. Fischer, Jakarta, 2016. Reproduced with permission of the artist

in tall traditional topknots, kneel in front of the forest, backs to the viewer (see Fig. 2). With one hand behind their backs, they hold a rope or intestine or umbilical cord: the family connection, as they face their doubled lives in Rhode Island and Yogyakarta, moving each year back and forth. The structure of feeling, the air or mood of the piece, is ambiguous, at once serene and threatening. Wiharso explains it is about conflict with neighbors or within families, “When you have a conflict everybody is injured. Even though somebody wins, there is no win, everybody is injured. So this is the idea.” He explains the metaphor: “In Javanese philosophy, you know, it is like [your] intestines, in your mind you have put a thing, but you have [a] long intestine. The intestine is the drama, your inner state, and the bamboo is the border, like earlier [versions] using birch trees, but this time using bamboo.” (ibid.)

As one turns into the main exhibition space, bright metal cutouts, glossy painted surfaces, catch the eye. It is pop art and comic book style, buses, cars, and pickup trucks, and stylized people, but as one looks more closely, the fine detailing, often in gray-green shadow, draws you in, engages you in Javanese “movementality,” “density,” and “people everywhere,” fighting, loving, and always interconnected through nervous systems, pipes, wires, and rifles bent into further pipe-like connections or, where there is forest, by tropical lianas and vines (see Fig. 3).

Wiharso’s work reminds us that there are emergent cultural forms that breathe in their influences both locally and globally and breathe out their entanglements without regard to received dichotomies and categories. I think of Wiharso’s work as posing a challenge to verbal articulation and theoretical formulations, overflowing the pedagogies in which we have been trained to see, think, and act. Among these, Wiharso points out is the very notion of diaspora, which he says Indonesians (as opposed to



Fig. 3. Entang Wiharso, *Promising Land #2*, 2016. Aluminum, car paint, resin, color pigment, steel, acrylic, and thread, variable dimensions. Photo by Art Jog Documentation. Courtesy of the artist

ethnic groups among them) are unused to think in terms of, a category only coming (perhaps) into being for them, but which he lives on a daily basis. His work, and that of many other Indonesian artists (Heri Dono and Eko Nugroho are two other well-known ones, but also other Asian artists, such as China's Fei Cao and Bing Xu), cannot easily be placed into standard curatorial and art history categories such as the popular contemporary art that is supposed to come after modern art. Indeed, one of the most vigorous debates among Southeast Asian curators is what categories might be more appropriate.⁶ These arts are intensely locally grounded, often politically scathing, frequently casting question on many forms of mechanical and toxic “influencing machines,” heavily coded in personal symbolic vocabularies worked out over an artistic career and yet, with a small bit of tutoring or repeated viewing, legible to wide audiences, including now international museums. The hunger for cultural engagements across various kinds of social divides (not only national or class or religious), perspectives, and grounds of judgment is open—if also contested by publics who reject shows that rub them the wrong way, and by politicians who fear those less tolerant factions in the polity. The field *is* political, not just representative of the political.

Wiharso, Heri Dono, and Bing Xu work in a variety of materials, contributing also a materialist commentary in their artworks. Bing Xu's experimental film made entirely of surveillance videos intervenes in ethical questions suffusing privacy and control in

⁶ Filipino art critic Patrick D. Flores is one of the most insightful of these theorists. David Teh has recently added his voice in a somewhat more national frame for Thailand with however a similar focus on what comes after the repetitive traditional symbols and romanticisms of most twentieth century Thai art (Teh 2017).

contemporary societies. Wiharso has commented that he enjoys working in aluminum because it is a common household metal out which cooking utensils are made, and because it is soft like paper on which he can inscribe his ideas and cut them out into enduring forms. Likewise, the vibrant colors of his more recent work are done explicitly in automobile paint, and not just for his American cars (usually with Rhode Island license plates). And yet his personal vocabulary of entanglements and metaphors of Javanese emotional philosophy are as much a contribution to a global vocabulary as Salman Rushdie's chutnified English was in *Midnight's Children*. We all are changed by these contributions. I've learned to think in terms of Wiharso's metaphors and Bing Xu's aggregated and repurposed surveillance videos as much as with Rushdie's linguistic expansion of global literary English (and Amitav Ghosh's similar more historical exploration in *Sea of Poppies*). All play musically for me like rarified jazz.

4 Disaster Repair, Structures of Feeling, Aesthetic Modes of Production

Walking into Takashi Murakami's hundred-meter-long, three-meter-high mural *The Five Hundred Arhats* is a stunning and overwhelming experience, much like I would imagine the feeling of the enormous 2011 tsunami wave cresting over and engulfing your body. People are miniaturized standing against the walls. The colors and shapes on one side are flaming nuclear red, and on the other side ocean froth-like white (see Fig. 4).

The images of the arhats (bodhisattvas, those who have achieved enlightenment but stayed in the world to teach and act as models for people) are exuberantly cartoonish



Fig. 4. Takashi Murakami, *The Five Hundred Arhats*, 2016. Nuclear fire from the West, with Baku (bear body, elephant trunk, rhinoceros eyes, tiger legs, and cow tail), who devours nightmares, and the White Tiger of the West



Fig. 5. Takashi Murakami, *The Five Hundred Arhats*, 2016. Superflat bug-eyed arhat grasping the wave, with small arhats comically performing the mudras of not to worry, protection, and salvation

and gruesome in a happy manga sort of way. Japan has often suffered devastating earthquakes and tsunamis, if not nuclear meltdowns (though there have been plenty of minor accidents) and among the source images for the mural is the older masterpiece of the *Five Hundred Arhats* by Kazunobu Kano in the Edo period. Nothing of the compound disasters of the 3 March 2011 (“3/11”) Great East Japan (or Tohoku) Earthquake (9.0 on the Richter scale) and the level-seven nuclear meltdowns at three reactors at Fukushima Daiichi and their ramifications, is directly depicted, but one feels the rumbling, enormous waves, nuclear fire, torn trust in government, and puny-seeming but hopefully powerful and transformative efforts of civic groups to pick up the pieces and live on. In my first impressions, I could not help but see in the enormous diving whale a cresting wave, backed up by many swirls of pop-art waves in its wake. A bug-eyed arhat grasps a wave with both hands. This round bug-eyed circle is a fusion of a “superflat” pop figure of Japan’s (and Murakami’s) recent “cute” aesthetic, together with Umibozu, the “sea monk” monster (see Fig. 5). The effect is partly to fuse old devotional art forms into new pop media, and partly to transform into new idioms the old aesthetic that, as art critic Soyuku (2015: 65) puts it, “karmic assistance is better than direct support; suggestion is better than instruction; and . . . true salvation only comes once we, like the arhats, gain full awareness of the make-believe nature of our narratives, yet are able to handle real difficulties at play. The 500 Arhats gaze at us, temporarily sharing our stories in passing, seeing it all as just play.”

Other source images range from medieval nihonga painting to anime and comic magna, including Fujio Akatsuka’s *The Genius Bakabon* (1967), whose father says *ee ja nai ka* (it’s all right, who cares). This saying was repeated in the Fukushima Project, a rock music festival held in Fukushima City in response to the compound, sixfold

1 disaster of 3/11: a 9.0 earthquake, fourteen-meter-high tsunami, level 7 nuclear melt-
2 down and radiation dispersion, rumor crisis, breakdown of trust in government, and
3 increased sense of crisis in economic precarity at many levels in society. The saying *ee*
4 *ja nai ka* originates from the annual Hungry Ghost Festival of Oban, and also from the
5 time of troubles in the Meiji period. Arhats normally stay in the mountains practicing
6 austerities, appearing only after fire, tsunami, earthquake, or other disasters as a kind of
7 rescue team, although, says art critic Tsuji (Murakami 2015), they never seem to be
8 trying all that hard, and they are funny in their efforts. Murakami says he wanted to
9 capture the fact that despair and hope exist side by side in the world we live in.

10 What is of interest to my anthropological way of thinking is this structure of feeling
11 modifying the historical modalities for reflection, reinventing them for our technos-
12 cientific age in which we have a heightened awareness of emergent ecological crises of
13 our own making. Feelings of entanglement, of unexpected tests and opportunities,
14 require bravery, strength, and steadfastness, not passivity.

15 Among the many different responses to the 3/11 crisis captured in documentary
16 film, ethnographies, and other formats, two strike the anthropological eye: the use of
17 old rituals to sustain, recreate, and strengthen community feeling in the struggles to live
18 on and to rebuild within damaged spaces and psychologies; and the efflorescence of
19 civic community efforts to test radioactive levels in the air and, more profoundly
20 (because requiring much large and more expensive germanium detectors), food, to
21 provide public information independent from the government, and again to build
22 resilient community.

23 “Safety is more than laboratory tests; safety is also a social relationship. It can only
24 exist insofar as people trust one another that the products they are eating are indeed
25 safe,” stresses anthropologist Sternsdorff-Cisterna (2014). The breakdown of trust was
26 one of the six compound disasters of 3/11. Music and the arts were among ways to try
27 to reknit some of these social ties and the civic science and monitoring that they
28 enabled.

29 In a longer essay, “Third Spaces and Ethnography in the Anthropocene,” I reflect on
30 a series of structures of feeling embedded in various Asian science-informed novels
31 and artworks (Fischer 2018: epilogue). There is no space in a short research and
32 methodological framing note to give details, but two films, Ming Zhang’s 1996
33 *Wushan yunyu* (*Wu Mountain Clouds and Rain*) and Zhangke Jia’s 2006 *Sanxia*
34 *Haoren* (*Still Life*), paired together with Everett Yuehong Zhang’s (2015) medical
35 ethnography of *The Impotence Epidemic: Men’s Medicine and Sexual Desire in Con-*
36 *temporary China*, make striking psychosocial connections among rapid moderniza-
37 tion, massive population displacements, and questions of how the sexual economy is
38 inhibited, a kind of deep disruption that links biology and technology. They provide a
39 parallel to what Indonesian artist Entang Wiharso calls his “Geoportraits.” I append a
40 chart of a number of novels and art works with which I have been working (Table 1).

41 I have become particularly interested in writing from Asian points of view by
42 technoscientifically literate authors who, while expanding the purview of ethnographic
43 registers with Asian literatures, also explore current disasters from pandemics to inten-
44 sifying earthquakes, tsunamis, volcanoes, and industrial disasters such as Minamata,
45 Bhopal, the Fukushima Daiichi meltdown, and rising sea levels (Fischer 2016)—I
46 remain dedicated to seeking out the hard work of empirical ethnography, geography,
47 and social history (mine and others). I try to juxtapose this empirical work with that of

Table 1 Reading ethnographies, literature, films, and painting together

Actor relations	Anticipations, recurrences, affects	Literature, film, arts	Ethnographies, realities
Adjustable plans	Returning to the sea, changing taboos and sensibilities	Abe 1955	Olsen 2017; Günel 2017; Halperin and Günel 2016; Lui 2016
Structures of feeling (<i>ee ja nai ka</i>)	Disasters, near-death experiences, despair and hope coexist, laughter (<i>asobi, oko-e</i>)	Murakami 2015; Azhari; Sinha 2007	Smith 2012; Good and Good 2008; Grayman 2013; Fortun 2001, Petryna 2001
Aesthetic, ethical, and moral stances	Biogenic interludes ephemeral time: <i>wabi-sabi</i> vs. protocols	Ishiguro 2015	Sanal 2011; M. Good 2007; B. Good 1994
Intergenerational transmission, precarity (<i>muen shakai</i>)	Fear of radiation, “use it as a torch”	Paper theater (<i>kamishibai</i>); Trimpop film <i>Furusatu</i> , 2016; Fukushima Music Project, 2011–	Manabe 2015; Sternsdorf-Cestina 2014; Sayre 2013; Petryna 2001; Allison 2013; George 2001; Clancey 2006
Hormonal disruption and sexual impotence	Floods and displacement	Yun-Fei Ji’s mural <i>Three Gorges Dam Migration</i> ; films <i>Wushan Rain Clouds</i> by Ming Zhang, 1996, and <i>Still Life</i> by Zhangke Jia, 2006	Zhang 2015; Wylie 2017
Viruses, pandemics	Living across species boundaries; Internet, social media	Fayun Hu 2004; Tsai films <i>Neon Gods</i> , 1992, and <i>Dark Circles</i> , 2006	Fearnley 2013; Mason 2016
Influencing machines and biologies	Electromagnetic environmental disturbances; entanglements, connectivities, <i>warang</i> sociability	Wiharso 2016	Fischer 2018; Good and Good 2008
High-tech politics	Preparing for space flights; field notes, games, chronologies	Cixin Lui 2007–10	Messeri 2016; Collins 2004, 2014, 2017

Adapted from Fischer 2018b.

hard science fiction writers or, if that is a suspect genre, novelists who are well informed by science and technology, working the same terrain (and often themselves scientists and physicians with strong empirical bents). Note that the list in Table 1 has a sequence of bioecological foci: (a) sky or atmospheric-ocean cycles (aquatic biologies of our ancient biological origins and future potential return); (b) water—tsunamis, earthquakes, floods, and near-death experiences; (c) earth—biogenesis and short life-times; (d) plants—photosynthesis, fear of radiation, nuclear meltdown, the dying sun; (e) anima-human reproduction endangered by displacements of populations by megadams (e.g., Three Gorges Dam), leading to sexual impotence, and by toxicities from industrial pollution, leading to respiratory illnesses, hormonal imbalances, and

1 cancers; (f) mankind's respiration threatened by pandemics of SARS and avian influ-
2 enza that with unintended human facilitation cross species barriers and ecological
3 niches (industrial husbandry, farming wild fowl, modern transportation); (g) fire of
4 the earth (volcanoes, earthquakes) and people's indigestion from commodity flows
5 (geoportraits of diseases of "movementality"); and (h) wandering earth and death's end
6 (indeterminacies and risks of space and time technologies).

7 Take the opening of *Kobe Abe's Inter Ice Age 4* (1970 [1955]), which sounds like a
8 possible description of the 3/11 earthquake that caused a massive tsunami and the
9 catastrophic level 7 meltdowns of the Fukushima Daiichi nuclear power plant reactors
10 (the same International Atomic Energy Agency rating as Chernobyl's meltdown),
11 leaving behind not just deaths and injuries but contaminated landscapes, breakdown
12 in trust of government, and many self-help community responses in trying to measure
13 food safety, air quality, and ground contamination. It is, for the moment, our current
14 most powerful icon of environmental and planetary ruin. But *Inter Ice Age 4* was
15 written in 1955.

16 Among the fascinations of this beautifully constructed novel is that it reads today
17 quite differently from when it was produced. At the time of its production, when I first
18 read it as a teenager, it was an allegory about the dangers of communism, technocracy
19 (rule by experts), and losing our humanity through technology, one of a set along with
20 Huxley's *Brave New World* and Orwell's *1984*.

21 But today it reads more like a chart of one of several possible routes of escape from
22 global warming, sea rise, and pollution of the land, and from the Anthropocene, into an
23 emergent new "Aquacene." Scenarios and blueprints for such solutions are being
24 pursued today by Singapore as well as NASA. Singapore is testing and prototyping
25 building both underground and from the seabed upward to expand its living spaces.

26 Abe, trained as a physician, imagines genetically engineering babies to have gills, to
27 become aquatic, or "aquans." He plots an AI (artificial intelligence) psychiatric expert
28 system that mirror's the narrator's thought processes, not unlike the ELIZA psycho-
29 therapy program that drove its MIT creator, Joseph Weizenbaum, to leave the field of
30 artificial intelligence, only a few years (1964–66) after Abe's story. For Weizenbaum,
31 the uncanny ability to so easily manipulate human beings was intolerable. The fasci-
32 nation with robots in Japan is well known, the land where the Masahiro Mori's notion
33 of the uncanny valley was tested out in a series of theatrical experiments by roboticist
34 Hiroshi Ishiguro and theater director Oriza Hirata.

35 Abe also plots a variant of the International Geophysical Year (which was imple-
36 mented in 1957–58, a globally conceived scientific program like the International
37 Biology Program mentioned above) to find out in the novel why sea levels were rising
38 faster than models predicted. He has many countries packing up their cities and fac-
39 tories and taking them to higher plateaus, an eventuality contemplated today by the
40 genomics search by BGI in Shenzhen, China, into the genetic mutations that allow
41 Tibetans to live at high altitudes and for ways in the future to give lowlanders equal
42 physiological facility. Abe has the narrator blame the Japanese government for dis-
43 regarding the danger, paralleling the complaints against the Tokyo Electric Power
44 Company and the government for the Fukushima disaster. He even has a fascinating
45 twist into the secret or classified world. The rapidity of changes in sea level panics
46 member countries into disbanding the International Geophysical Year. The fear is that
47 if the speculations about the subterranean volcanoes' connection to rapid sea rise are

1 made public, social order and discipline will break down. Secretly, instead, with the
2 help of financiers, a Society for the Development of Submarine Cultures is established.
3 The secret plan is to genetically engineer aquatic humans to live under the sea and to
4 build cities under the sea.

5 Science fiction texts can serve as forms of intertexts—connecting the dots of impli-
6 cations, and creating paranoid plausible futures by overconnecting the dots—for real-
7 world technological developments and for ethical debates both amid anticipations of
8 climate change and amid the secrecy of government research (DARPA [Defense
9 Advanced Research Projects Agency] and its Russian, Chinese, and other national
10 and corporate equivalents), the attacks against homeland security, and the gambles of
11 financial speculation. All of these are complex worlds, beyond the control of purely
12 individual choices, for which contemporary complexity theory is at best an abstract
13 mode of anticipation.

14 Another author I have been thinking with is cancer biologist Tatsuaki Ishiguro, who
15 did part of his training at the M. D. Anderson Cancer Hospital in Houston, Texas, and
16 whose beautiful set of four stories called *Biogenesis* (Ishiguro 2015) evokes and mim-
17 ics scientific protocols and simultaneously *yūgen* aesthetics induced by confronting the
18 brevity of life. *Yūgen* involves both *wabi* (transient and stark beauty) and *sabi* (the
19 beauty of natural aging). It is a mindful approach to life evoked by the transience of
20 buds and decay more than by the fullness or perfection of full blooms. Each of the
21 stories in *Biogenesis* is about a biological organism in danger of extinction. Their
22 aesthetics, rational-scientific protocols, and the scientific literacies they incorporate
23 provide for me the ethnographic resonances for our contemporary world for our
24 expanding knowledge of interconnections both in ecologies and in biomedical exper-
25 tise without it “solving” questions of mortality, which thus require aesthetic, ethical,
26 moral stances toward, as well as cultural understandings of, the fragility of life, the very
27 substance of ethnographic anthropology. The point is to enliven ethnography with
28 anticipation yet, like Gökçe Günel’s *Spaceship in the Desert* (2018), an account of
29 the MIT-assisted Masdar Institute and Masdar City in Abu Dhabi, and other ethnog-
30 raphers’ work, to temper anticipations with ethnography and, by tempering (as in
31 steel), to strengthen them both (see also Halperin and Günel 2017).

32 33 34 **5 Conclusions**

35
36 If, as I suggested in the introduction to this article, anthropological STS is ever asking
37 how the emergent world in which we live is out of sync with available theoretical
38 models, or how the world continues to outrun the pedagogies in which we have been
39 trained to think, can East and Southeast Asia provide important strategic locales or sites
40 of cultural critique and materials for new theory construction? This is of particular
41 urgency given the changes in bioecology that are becoming increasingly evident,
42 problematic, and open to scientific as well as anthropological investigation, including
43 not just in the present and future but also in retrospective reinterpretations of the past.
44 We need new narratives that expand the field of inquiry for Asian STS, including new
45 cultural media and circuitries, and including our expanding knowledge of bioecolog-
46 ical entanglements, in order to attend to how our planetary social relations are morph-
47 ing at both local and transnational exchange levels and all scales in between. I have

1 been drawing attention to bioecological threads in recent ethnographic work in East
2 and Southeast Asia but also to the material circuitries, imaginative cultural genres of
3 interpretation, and structures of feeling, as well as to network analyses composed not of
4 algorithmic immobile mobiles but of quite mobile, flexible, and peopled technological
5 capacities and affordances, requiring intentional (sociocultural) organizing and recur-
6 sive social maintenance and repair, strategic scaling, and genre (and epistemological)
7 variation, a call not merely to join social activism but to anthropologically understand
8 when and how activism does and does not change matters.

9 By citing the growing new anthropological STS ethnographic work in a variety of
10 Asian locales, I have tried to suggest that new narratives and models are already “out
11 there” as emergent forms of life, that is, as contested, shifting third spaces (forming in
12 the interstices of old distinctions and categories) and ethical plateaus (terrains of deci-
13 sion making where multiple technological changes intersect and impose double-binds
14 or trade-offs among simultaneous imperatives). The point of this research note is to
15 inject alternative narratives into STS, alternative to the unproductive debates about
16 what is East or Southeast Asian, as if we still were after essentialisms (never able to
17 achieve them, since such inquiries are malformed questions), and provincializing all
18 theorizing as always itself historically and ethnographically situated (Fischer 2014).
19 We need also to temper the quick theoretical judgments that all too often are dismissive
20 of local scientific adventures, creativity, and cosmopolitical engagements, for instance,
21 in some of the accounts of Biopolis, that too often subordinate local efforts into ready-
22 made judgments and theories, or too willing to call successes and failure, rather being
23 genuinely curious about scientific lives and nonobvious developments.

24 The call here is for more than pointing out how theory developed in Europe or
25 America fall short in Asia, and Asian models may have something to teach general
26 theory, though that is important to do. Nicolas Langlitz’s curated reviews by Dwai-
27 payan Banerjee, Ayo Wahlberg, and Margaret Sleeboom-Faulkner of nine recent books
28 on Asian medical and biosciences and technologies under the title “Is There an Asian
29 Biopolitics?” (2011) and Susan Greenhalgh’s (2009) article “The Chinese Biopolitical:
30 Facing the Twenty-First Century” (and her classic 2008 book) begin some of the
31 former work regarding Foucauldian theory overwriting Asian examples.⁷ But it is
32 Asian examples of emergent forms of life that promise to provide not just an anthro-
33 pological STS in Asia but in effect theory from the Global East that has fast come to
34 challenge, supplement, and rearrange theory from the Global North, theory from the
35 Global South, late modernization and developmental states theory, and postcolonial
36 and subaltern studies theory. All of these earlier frameworks still apply in part and in
37 places, but something new also is emergent.

39 ⁷ Banerjee (2011) reviews Copeman’s ethnography of blood donation and Aditya Bharadwaj and Peter
40 Glasner’s (2009) work on maverick stem cell research in India, suggesting they are more like Lawrence
41 Cohen’s (2008) “bioavailability” developed with Indian ethnographic examples than like Rabinow’s “bio-
42 sociality” developed with French examples in mind (Rabinow 1999, Rabinow and Rose 2006). Walberg
43 (2011) reviews the 2010 volumes edited by Aihwa Ong and Nancy Chen and by Margaret Sleeboom-
44 Faulkner, suggesting that both are heavily marked by Foucauldian theory, with its presumptions of change
45 toward neoliberalism, but (along with Greenhalgh 2009) suspecting that “old school public health” gover-
46 nance has more effects than new biotech projects, despite the cultural prestige goals of the latter. Sleeboom-
47 Faulkner (2011) reviews volumes on the one-child policy, ultra-low fertility, health and hygiene, abortion,
and moral experience and governance of life.

1 The ethnographic works I cited in section 1 of this article are all richly historicized.
2 They invest much labor to undo the stereotypes of much ingrained orientalist and East
3 versus West historiography, or attributions of all developments to colonial and post-
4 colonial relations. Instead of merely invoking theories developed from Euro-American
5 experiences, they develop new epistemological objects and mappings of scientific
6 circuitries beyond nationalist comparisons (nationalism being but one of the cultural
7 capital mobilizations or resources being put into political organizational play). I have
8 suggested a renewed role of individual biographies and peopled networks as sites or
9 crucibles where contradictory social, cultural, economic, and political pressures
10 intersect and choices are made, allowing them to function as heuristic social hiero-
11 glyphs or cross sections through historical layerings. These are mapping heuristics
12 for emergent forms of life, and they also help provincialize or locate the limits of
13 theories and models developed on the basis of Euro-American experiences or of
14 previous historical horizons.

15 The second section on pedagogies broadens questions of scientific training in an age
16 of pervasive computing, big data collection and mining, design thinking, and
17 experiential-experimental teaching that attempt to reconcile creativity and increasing
18 Taylorian metrics and knowledge performance indicators. These are high-stakes issues
19 for Asian societies with economic, political, and cultural ramifications. They are also
20 high-stakes issues for generating new geographies of science and technology devel-
21 opment, and recovery of past inter-Asian circulations and past Silk Road global inter-
22 actions, a resource for thinking social distinctions and typologies otherwise.

23 The third and fourth sections on the bioecological entanglements and diasporic or
24 migration contexts of knowledge production shift attention to bioecological changes
25 and disaster-and-repair cycles and at the same time to explorations of new ways of
26 apprehending and intervening conceptually in these changes. At issue are future imagi-
27 naries, worked out in the interfaces of art worlds or the aesthetic mode of production
28 (as well as planning documents) and shifting power balances, in the strange tempo-
29 ralities of working to make things happen (or prevent things from happening) because
30 of the ways in which we misrecognize, while anticipating, the future. Art worlds, like
31 social hieroglyphs, provide on-the-ground opportunities to look for negotiations, eth-
32 ical dilemmas and double-binds (Fortun 2001), frictions (Tsing 2005), and ethical
33 plateaus (Fischer 2003). These are sites not only of imaginaries or discourses or effects
34 of statistics and recoils of technological infrastructures (Latour 2004) but also of local
35 materialities, switching points, and leverages in planetary networks such as air quality
36 and land-use planning (Choy 2011), industrial and scalar reorganization of ecologies
37 (Fearnley 2013), virology and comparative genomics (Keck 2017), and the very materi-
38 als of cultural commentary (Wiharso 2014).

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- 42
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Michael M. J. Fischer teaches at MIT. His latest book is *Anthropology in the Meantime: Experimental Ethnography, Theory and Method for the Twenty-First Century* (2018).