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How Far Can East Asian STS Go?

A position paper

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Introduction

Science, Technology and Society Studies (ST&S) emerged in North America and Western Europe in the late 1960s and has witnessed an astonishing growth of scholarship since then. ST&S theories, and later a more focused Science and Technology Studies (S&TS),[1] not only offer new perspectives to understanding scientific and technological changes, but also raise new issues to the mainstream humanities and social sciences. Institutionally, university-based STS programs have been formed at many leading universities, and international scholarly associations, such as the Society for Social Studies of Science (4S) and the European Association for the Study of Science and Technology (EASST), have been established. Several STS journals have been set up as well. In addition to academic concerns, STS scholars have engaged public policies and emphasized the importance of politics as one of the top priorities on the STS agenda. STS keeps growing.

The recent rapid growth of STS in East Asian communities shows that its expansion is not limited to core geographical areas. The East Asian STS Network, formed in 2000, enables STS scholars to exchange ideas and learn from each other. The East Asian STS conferences are regularly held in Japan, South Korea, China,

[1] In this positional paper, I use "STS" to cover both senses of ST&S and S&TS. This is also the position of our EASTS journal; please see our Journal's Information for Contributors: http://sts.nthu.edu.tw/easts/forcontributors.htm.

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and Taiwan; in 2006, the Sixth East Asian STS conference was held in Japan. Some exciting research collaborations, such as those on Japanese colonial science and imperial universities,[2] have been formed. Each society in East Asia has been developing its respective STS activities. Japanese STS scholars have formed national STS societies and research groups, published Japanese STS journals, and held international STS conferences. The announcement that the 4S annual meeting will be held in Japan in 2010–for the first time in Asia–indicates international recognition of Japanese STS. In South Korea, STS flourishes with the growth of research and teaching programs at prestigious universities, as well as the establishment of a national STS society. Korean STS scholars' important contributions to policy-making have been highly recognized by both government and activists. For example, STS scholars play a dominating role on the Korean ELSI programs on Human Genomics and also work closely with NGOs to offer critical perspectives on bioethics.

In Taiwan as well, the STS community has expanded quickly, partly as a result of institutional support from the Ministry of Education, the National Science Council, and the National Industry and Technology Museum. Various colloquium programs in universities, conferences, and workshops; an STS website, an email network, and the *Taiwanese Journal for Studies of Science, Technology, and Medicine*, have all contributed to the rapid development of STS in Taiwan, including preparations for the first STS Institute at Yang-Ming University and Taiwan's STS Society. Meanwhile, Western researchers are becoming increasingly interested in the study of technoscience in East Asia, possibly because of important issues related to the globalization of science and technology, as well as the increasing attention given to the perspective of colonial and postcolonial technoscience.

Having briefly introduced our current East Asian STS communities, let me begin this position paper with some observations and questions before stating our problematics.

Is focusing our scope of STS inquiry on East Asia–a specific geographical and historical area–a reasonable and potentially fruitful strategy for doing research in East Asian communities? In terms of functional and academic market considerations, of course by doing so we have the advantage of focusing the subject matter on a more homogeneous set of cultural and colonial backgrounds, at least for indigenous East Asian STS researchers (STSers), as well as the advantage of studying our own technoscience and its societal context first-hand. But other than that, are there other and perhaps deeper reasons for an East Asian STS journal? Haven't we taught our students STS with good case studies still mostly coming from the West? And haven't we theorized our East Asian STS case studies also mostly from established Western theoretical perspectives: SSK, SCOT, ANT, Social World, cyborg feminism, bio-medicalization

[2]This project team is led by Prof. Togo Tsukahara of Kobe University. An English introduction of this project can be found in the 5th East Asian STS Conference held in Seoul, December 2004. The title is "Science and Imperialism: critical examinations on the techno-scientific legacy of the Japanese Imperial Universities in East Asia and its implications to contemporary East Asian STS."

and all that? In other words, what's the difference between EASTS studies and East Asian "area studies" that apply Western STS perspectives?[3]

As rhetorical and useful questions, some East Asian STSers wonder about what can best constitute an EASTS study. Hideto Nakajima from Tokyo, for example, has worried about the kind of "dominance" (i.e., American STS) we have been experiencing and asks whether it is the best influence we can choose. He observed:[4]

> ...Then how is STSs [in other regions] in East Asia? My observation is the following: They are under stronger influence, or under almost sole dominance of the latter. Is it simple misunderstanding of mine that SSK, SCOT, Feminist and cultural studies of science, that flourish there, are all American origin, except for some odor of French postmodernism? If I am correct, don't our colleagues in East Asia need fresh air from European science studies (Bernal, Needham, Ziman, Beck etc.) and a background of non-pragmatic European philosophy? (Wittgenstein, Popper, Marx, Habermas etc.)

Perhaps for Nakajima, a balance between US and European STS influences would create a space of freedom and perspectives so that East Asian STSers could construct our own positions and ideas. My colleague, Wu Chyuan-Yuan from Hsinchu, as another example, had worried about the state of Taiwan's postwar historical studies of technology, and technology studies in general. By emphasizing the "great innovation" stories from the West too much, many historians and STSers[5] have become used to ignoring Taiwan's potentially fascinating postwar history of technology, instead dismissing it as if it were mere "imitating or copying"–if not pirating–contemporary Western technology by a bunch of "dirty-hand[6] skill workers" and engineers without Western Ph.D. degrees. Wu further lamented:

> By suppressing this type of history of technology, we got serious knowledge and social consequences worse than the disappearance of past records. Suppose our technological achievements were nothing but copying imported technology, Taiwan's postwar engineers, earning lots of foreign currency for us perhaps, have in the end no subjectivity, no technological practices of their own, and naturally no attractive role model for young people to learn faithfully, to work hard, and to stay loyally on this mother land.

[3]Of course there are growing concerns from Western STS theorists who would like to provincialize their theories, to avoid universalizing them to other areas and histories. But despite subjective cautions, the objective tendency to universalize usually would not die out unless new STS theories come to stand out from other areas and histories.

[4]This quotation is taken from Nakajima's panel presentation at Taiwan's 2nd EASTS International Conference, August 2007. His ideas relating to this issue also can be found in his more detailed presentation at the 7th Kobe East Asian STS Conference, 2006.

[5]A growing number historians and STSers avoid using the great innovation model and try to find different and distinctive stories in Taiwan's modern history. Initial results are promising, and among those who use this approach, David Edgerton's conception of technology-in-use is frequently quoted.

[6]"Dirty-hand" is from a Taiwanese term, 黑手, which roughly means those docile and hard-working, skilled workers learning their trade from a traditional master-apprentice small group without appropriate professional training and degrees. For Wu's paper, see 吳泉源, 「技術與技術研究在台灣」, 當代雜誌, 2002, April, No.176, pp. 64–73.

Both scholars have made points that echo some of our concerns at EASTS journal. For a newly established journal and a young research community in East Asia, it is natural that we should learn as much as possible from Western STS studies, not only from North America, but also from Europe, but Nakajima has a further point to make. He believes that European STS traditions have a stronger, activist-like concern with their technoscientific social problems than their apparently more academic and knowledge-oriented American counterparts.[7] His assumption may be arguable, but his concern about the social practices of East Asian STSers is real. As for Wu's moving laments, they represent more than the common concern that we East Asian STSers should have our own case studies, our own "*Taiwan Golem*"[8] or our *科學技術社會論の技法*,[9] for example. Wu has different concerns. The kind of Taiwanese or East Asian case studies or histories that is proper for our postwar societies should be qualitatively different from the usual "innovation" or even "consumer/user" Western case histories. He believes great East Asian stories of "dirty-hands," histories of "apparent imitation," and "hard copying" are STS gold mines to be dug out, a bit like what David Edgerton is now proposing about "creole technology," the new technologies of the poor world, especially those of its megacities (Edgerton 2007).

The Scope of East Asian STS and Postcolonial De-territorialization

However, we might like to pursue these issues further. Why should we avoid great innovation stories for STS teaching? Isn't innovation better than imitation, even though it is even harder? As many developing or developed societies in East Asia, why should we be so concerned with the "national or regional characteristics" of our science and technology, so much so that we should construct our own cases studies that are very different from the Western mainstream cases? Isn't it the case that technology typically "travels" globally; that we are in an age of globalized science and technology? Moreover, in this era of postcolonial technoscience studies, should EASTS still be so concerned with such problematics as post/new colonial dominance, dependency, and issues of center and peripheries?

When we first considered the possibility of an East Asian STS journal project more than two years ago, we were thinking especially of encompassing past Japanese colonial and postcolonial societies in our STS studies, with the advantage in mind of theoretical and historical unity resulting from shared colonial heritages and similar postcolonial developments in the postwar cold war era. We wondered whether a distinctive historical experience and thus probably a shared East Asian STS theoretical perspective could serve as the basis of this journal project. If this is indeed the case,

[7]To be fair to our American STS colleagues, we do not so much share Nakajima's conception of the American STS community, which to some extent resonates more with Steve Fuller's criticisms of the Kuhnification of the American HPS/STS communities.

[8]A famous S&T studies textbook series by Harry Collins and Trevor Pinch: *The Golem* (1993), *The Golem at large* (1998), and *Dr. Golem* (2005). Chinese translations by Chinese translators are available now.

[9]The English title for this Japanese book is: *Case Analysis and Theoretical Concepts for Science and Technology Studies*, Yuko FUJIGAKI 藤垣裕子(Ed.), University of Tokyo Press, 2005.

then EASTS studies are indeed different from simply applying Western STS perspectives to East Asian "area studies." And we indeed would expect distinctive East Asian STS theories, not to mention distinctive STS stories, case studies, and histories.

Indeed, a shared and distinctive experience already has provided the basis for the emergence of a growing number of fine East Asian STS case studies, mostly written in their respective East Asian languages, and these will be rewritten and published in EASTS. Some of them are studies of premodern technologies and others examine technologies in various indigenous modernities, and I'll briefly mention a few of them later in this paper. This set of unusual case studies, I believe, will constitute the center of gravity for distinctive East Asian STS studies in the future, partly also because of the recent encouraging development of postcolonial technoscience studies that tend to provincialize the Western centers and to revive non-Western science and technology their own indigenous subjectivity, plus to take non-Western STS studies very seriously. However, before we publish a full corpus of distinctive East Asian STS studies in the future, let me, in this position paper at the commencement of EASTS, discuss some additional conceptual and theoretical issues for considering a distinctive EASTS studies. Engaging in a dialogue with the postcolonial problematics of de-territorialization is one way to do this.

The conceptual road to an EASTS distinctiveness, of course, is not simple. Western STS perspectives, or more recently, postcolonial technoscience studies, might have different ideas concerning this potential East Asian distinction. Bruno Latour, for one, long has expressed doubts about the supposed "Divide," the supposed radically different ways of producing knowledge/beliefs between Enlightened Western modernity and confused pre-modern societies. Applying a principle of symmetry to anthropology, he declared in 1991 that there is no such radical difference and thus, "Nous n'avons jamais été modernes." He urged anthropologists to avoid the "perverse taste for the margins" and "com[e] home from the tropics." And his way of solving the standard STS problem of how to coordinate the universal law with many local practices is by way of a set of "trans-local networks" in the spirit of ANT, such that "even a longer network remains local at all points."[10] For Latour then, the conventional Divide, and with it, the Enlightenment and rationality that distinguish modern from premodern societies, is replaced by two trans-local networks with a difference only in length.

Perhaps East Asian societies, especially Japan, are not quite the same as Latourian premodern societies. But the old doctrine or myth of a traditional East Asian, or even a Chinese-Confucian way of understanding nature, which radically contrasts with modern Western S&T rationality and thus constitutes another great Divide, is almost the same. And isn't it the case that since the nineteenth century, many East Asian countries have been busy selecting, from the perspective of Western modernity, good things and throwing away bad things from their confused traditions? Now suppose this East Asian "Divide" is also opposed by (East Asian) Latourians for good reasons. Thus our question is whether a Latourian anti-Divide thesis constitutes a problem for a distinctive set of East Asian STS studies. That is, can East Asian STS remain distinctive and live peacefully with an anti-Divide thesis? And would Latour

[10]All these Latourian quotations are taken from subtitles in Latour (1993) *We have never been modern*, (Harvard) [abb. WNM hereafter], chapter 4, "Relativism."

also urge Western STSers to avoid having perverse taste for the Far East and go home from East Asia?

As a second example, Warwick Anderson, a noted STSer from Sydney and now also the Associate Editor heading the Western branch of EASTS, has written many passages quite relevant to this journal's position when he was co-editing a Postcolonial Technoscience special issue for *Social Studies of Science* at the end of 2002. Anderson first points out the basic postcolonial perspective that "metropole and postcolony are examined in the same 'analytic frame'," thus typically, metropoles are provincialized and many postcolonies have their own alternative or indigenous modernities. Moreover, citing Roy MacLeod and Marshall Sahlins, Anderson urges us to abandon useless analytic terms, such as "center" and "periphery,"[11] and to abandon generally center-periphery models, to propose instead a study of the traffic of ideas and institutions and a recognition of reciprocity. Or at least, as postcolonialists would often say, postcolonial studies should avoid essentializing the center/periphery, metropole/colony, and other such categories.[12]

Let us come back to the scope question of East Asian STS. How would a general abandonment of "center-periphery models" affect our historical technoscience experience of twentieth century East Asia: Japanese and other Western Empires[13] and colonialism, and the postwar US-Cold War hegemony? Is it possible that we might abandon too much in this postcolonial STS enterprise? And the advantages of generally abandoning "center-periphery models" are not clear except to avoid the diffusionist arguments in terms of a rigid dichotomy of center and periphery. However, in addition to diffusionism and rigid dichotomy, there is much more in the various sophisticated center-periphery, world system, and dependent development models,[14] including various theses of dominance, dependency, and resistance. Wouldn't a postcolonial STS enterprise abandon them as well, in favor of less loaded terms, like traffic, networks, and reciprocity? Moreover, when global and transnational power-knowledge dependency is re-interpreted as, if not reduced to, the length of trans-local technoscience networks, it seems that the primacy of historical and geographical boundaries for a distinctive East Asian STS is lost.

[11]See MacLead (2000). But Prof. MacLead did not specify what he meant by 'center and periphery' except for implying they were used intuitively and historically, notions he deemed useless anymore. I'll come back to this specification question later. Also see Sahlins (1999). Sahlins wrote that contrary to the inherited notions of progressive development, the surviving victims of imperial capitalism neither became all alike nor just like us. Thus he wrote, "The Eskimo are still there, and they are still Eskimo. Around the world the peoples give the lie to received theoretical oppositions between tradition and change, indigenous culture and modernity, townsmen and tribesmen, and other clichés of the received anthropological wisdom."

[12]This is also what Prof. Fan Fa-ti wrote in his commentary on my position paper draft at the 2nd EASTS International Conference, August 2007. More on Fa-ti's comments later.

[13]Of course, Western power-knowledge domination is only part of the modern formation of East Asia. Chinese/Manchurian and Japanese dominations since the nineteenth century in both North and South East Asia are equally important.

[14]I am thinking of various political economy and world system models, ranging from the early Latin American Frankian underdevelopment theses to Peter Evan's later dependent development model, and also to the massive and sophisticated Wallersteinian world system models. None of them, however, has generated careful discussions of the history of science and technology. Has postcolonical technoscience studies had meaningful communications with these trends of scholarship (even though they were more popular in the 1970s and 80s than later)?

In short, East Asian or its de-territorialization? Surely, this scope question is one of the major questions that we at EASTS journal would like to pursue as the journal project unfolds, both in East Asia and internationally. But let me first propose a few counter-questions about this de-territorialization in order to extend the dialogue.

First, although they refuse to accept a rigid great Divide, Latourians still should recognize a set of distinctive East Asian networks built up from their colonial and cold-war histories. Indeed, a specific set of colonial and cold-war histories is enough to make East Asian STS distinctive without the need to posit a unique premodern East Asian way to produce knowledge/beliefs. Moreover, Latour also realizes that longer networks usually dominate shorter networks. Thus for Latour, "Modern knowledge and power are different...in that they add many more hybrids in order to recompose the social links and extend its scale."[15] Perhaps this is how he would draw the boundaries of "modern knowledge and power," even if all models of center-periphery are dropped. However, isn't it the case that, for Latour, powerful collectives usually group together or overlap, proclaiming a "deep fraternity of collectives"[16] as it were, within similar historical times and geographic areas? Thus, wouldn't the clusterization of powerful collectives versus the fragmentation of weak collectives again form patterns of "center-periphery" in historical terms? In short, it seems that Latour would have to allow a certain "network model" for the center-periphery problematic.

Secondly, in addition to the issue of power and dominance between networks, there are also similar issues of power among nodes or "locals" within the same network. From the viewpoint of actor network theory, Latour tries to avoid the issue of essentialism:[17] There are no locals as "essence" or "dependents" in a technology network or collective. However, from time to time, it can be difficult to treat all locals in a single collective as having equal power, for example, in the case of George Eastman for the Kodak photography collective. Or in East Asian cases, for similar reasons, it is difficult not to treat Patrick Manson as the center of his early tropical medicine collective, nor to treat George E. MacKay[18] as the center of northern Taiwan's early Christian modernity collective.

In commenting on my question of whether we need to drop all kinds of "center-periphery" models in postcolonial technoscience studies, Fan Fa-ti[19] from SUNY Binghamton, also a member of EASTS's Western editorial branch, responds in a way

[15]Latour, 1993, WNM, p.109.

[16]Latour, 1993, WNM, p.108.

[17]See Latour (1992), in which Latour discussed the history of Kodak photography and George Eastman.

[18]On Patrick Manson's work and activities in China, see Dr. Li Shang-Jen's 1999 dissertation "British Imperial Medicine in late nineteenth century China and the early career of Patrick Manson" (University of London). On MacKay's activities, see ch. 2 of my book in Chinese «亞細亞的新身體：性別、醫療與近代台灣» (2005: 群學) [Assembling the New Body: Gender/Sexuality, Medicne, and Modern Taiwan]

[19]Prof. Fan's commentary is a very interesting one. He also questions whether my specific assumptions and interpretation of "East Asia" are necessarily the best ones: they are primarily based on Japanese colonialism and Cold War in post-war era, but not based on Confucian ethics and the like. He rightly points out that "East Asia doesn't exist prior to the interplay of power and knowledge." Due to the structure and space of this position paper, I cannot do full justice to Fan's commentary. His commentary, presented at the 2nd International EASTS Conference August 2007, Taipei, is posted on our EASTS website: http://sts.nthu.edu.tw/easts/2007/fan%20fati.pdf.

similar to Anderson's original programmatic position. He states that postcolonial studies "treat historical actors in a symmetrical way—symmetrical not in the sense that they are equally powerful, but in the sense that they can be analyzed in the same methodological terms. These approaches do not deny the reality of power differentials. There are of course domination, resistance, etc., but all power relations have to play out in local contingencies."

However, if postcolonial studies avoid essentializing and do not deny power differentiating, they cannot stay in a "reaction-mode" for long (i.e., postcolonial studies as a reaction to essentializing, as a reaction to the permanent, rigid center-periphery dichotomy). They must, we hope, provide a new analysis of power differentials, a new way to localize power domination, but at the same time to integrate many local resistance/dominations into a contingent and perhaps flexible center-periphery network. Latour's previously cited ideas on longer versus shorter networks, on "adding many more hybrids in order to recompose the social links and extend its scale" seem to be a good start. Vincanne Adams' fascinating study, a paper also included in Anderson's special *Postcolonial Technoscience* issue on "Randomized Controlled Crime" about how Tibetan medicine was robbed in a bio-piracy crime occurring in the international high sea of power-knowledge would be another very promising case (Adams 2002). And although he notices a reversed center and periphery, Sahlins still acknowledges the reality of dependency and dominance from the metropoles.[20]

Therefore, if our counter questions raised above are reasonable, then it seems to me that the scope of a distinctive East Asian STS studies is still conceptually feasible, and even probable, under postcolonial scrutiny. That is, the scope of a distinctive EASTS seems to hold and be stable, even when facing the critical power of postcolonial non-essentializing and de-territorializing. The dialogue between EASTS and postcolonial technoscience studies will continue.

Having discussed the historical, geographical, and theoretical concerns of an "East Asian" version STS and how it might go beyond the application of seemingly universal analytic tools of STS to East Asian "area studies" (and to all other post-colonial locals), let us look toward another horizon and consider how far EASTS can go in that direction: its social practices.

The Social Practices of EASTS and a New Appropriate Technology?

EASTS journal, no doubt, aims to be an international academic journal. We aim to attract international authors and readers well beyond the East Asian boundary, and

[20]What Sahlins concludes from recent complex case studies, it seems to us, is a different interpretation concerning the relations between dependency and indigenous peoples, and between resistance and metropoles. But dependency and resistance are still there. Thus he wrote: "It is not simply that [Eskimo cultures] have persisted in spite of capitalism or because the people have resisted it. This is not so much the culture of resistance as it is the resistance of culture." p.xvi, Sahlins (1999).

we want this journal to be "academic" in almost all good senses of the word. But an academic EASTS journal is not meant to be only neutral, ideologically free, morally objective and symmetrical, and looking only for international STS connections without emphasizing East Asian local concerns and commitments. On the contrary, EASTS is both an international and East Asian local journal. And even before the conception of EASTS journal, many STSers in East Asian societies already were engaged in techno-social issues, such as the public participation of S&T, Dr. Hwang's scandal, GMOs, and environmental and anti-nuclear movements. However, how does an STS journal relate to the social practices and problems of its own societies, given its enunciative position as academic endeavor, but neither a cultural nor journalistic one, let alone a social movement?

Consider an unusual 2001 4S presidential address in the aftermath of 9/11. When contemplating the need for public intellectuals, Wiebe Bijker (2003) called for a new kind of public STS intellectuals who can contribute to making things, changing the world, and inevitably dirtying their hands. Meanwhile, he also made the following analogy for academic STSers doing SSK types of case studies:

> ...this connects the institutional level to the individual level, doing [in-depth SSK types of] case studies is a way for individual STS researchers to conduct political interventions. I sometimes think of this kind of intervention as "the STS kiss": the STS researcher in the role of prince, kissing the sleeping beauty (i.e., the scientist, engineer, or other actor being studied) awake with a detailed study of the actor's behavior. This metaphor stresses that an STS study highlights qualities of the scientific and technological cultures that the actors themselves may not have been aware of but that they will start to employ consciously once they have been alerted to them.

Despite the feminization of scientists and engineers, this interesting "STS kiss" model has the advantage of softening the highly critical stance of some STSers towards powerful scientists and doctors, and accordingly, romanticizing the relationship. Certainly this is good both for STSers' participation research in science communities and for scientists and engineers' appreciation of STS recommendations. It is also important, as Bijker stresses, for STSers, as new public intellectuals, to learn from concrete and detailed case studies from STSers as SSK researchers, which would "form the necessary basis for addressing the larger issues."

However, it is problematic to consider science and technology as a unified whole, as a "sleeping beauty." Isn't it the case that since the early history of science and technology, we've known that scientists and engineers are as politically and ideologically divided as any other group of people? A Marxist biologist or an anti-nuclear physicist is no sleeping beauty. Instead of being asleep, many of them are often agitated, highly critical, and looking for social allies. Moreover, especially for East Asian societies after WWII–except perhaps for Japan as a more developed and stable society–many governments have been engaging in, if not fighting for, their own modernization projects, with modern enlightenment types of scientists, engineers, and doctors as spearheads or symbols. Debates or controversies about technology here often are coupled with political and ideological debates: for example,

nuclear-power debates in Taiwan, Peace-Dam debates in Korea (Hong 2004),[21] and various industrial pollution debates in Japan and other East Asian societies.

As technology controversies in contemporary East Asian societies seem endless and new controversies are constantly popping up, they often spark heated debates in conjunction with social actions, if not street demonstrations, among scientists and lay people alike. Under these circumstances, STSers often must take positions, devise strategies, and make choices in order to cooperate with scientists, not only to "follow them," as Latour would have suggested years ago. Making distant observations and commentaries often generate no power,[22] given the sheer weight and scale of technoscientific debates, as well as the lack of East Asian STS institutions and researchers and the length of time required to complete relevant STS studies. Although in quite different contexts, Bijker also suggests that we need STSers who are public intellectuals, those who can contribute to changing the world, but cooperate with the SSK type of STSers.[23] What then are some strategies that our EASTS journal can offer in terms of research and theoretical outlooks?

Take, for example,[24] the notion of "appropriate technology" and its related social movements developed in the 1960s. Similar ideas, such as "intermediate technology," also were discussed by E.F. Schumacher in his 1973 *Small Is Beautiful*. Although the book was intended to address technological problems of the developed US and poor Third World countries, its ideas, such as "technology with a human face" and "production by the masses, rather than mass production," still seem useful and instructive for East Asian STSers. Theories from economists and developmentalists that classify "technology" into different kinds (indigenous, capital-intensive/super, and intermediate) with different social and historical significance also can be very informative to STSers. Similarly, the notion of "appropriate technology" as a guiding symbol for establishing alliances among various technologies (e.g., wind-power mills) that are alternatives to or different from the mainstream, capital-intensive, super technologies seems important and attractive to East Asian STSers, who already are swamped by waves of modern technology controversies.[25] In the US, however, all these appropriate technology ideas were picked up and practised to

[21]In his commentary (see later) on this position paper draft, Prof. Hong also emphasizes the long tradition of Korean STSers being involved in Korean technology controversies: "The inclination of STS to social practices has been strong in Korea. Several scholars of the first generation of STS in Korea came from the science movement, environmental movement, and scientific workers' union movement. Even today, Korean STS is strongly linked to the Citizen's Science Democracy Center and Alternative Energy Center."

[22]I do not deny that sometimes in-depth SSK types of case studies might become a successful political intervention in that groups of scientists on both sides of a technological controversy could be "awakened" by the STS kiss. But Bijker is right to stress that conducting SSK case studies are an important learning process for STS public intellectuals, even if the results of "STS kisses" on scientists are not predictable.

[23]Bijker (2003), p. 445. In this respect, may be Steve Epstein's important study of "AIDS Treatment Activism" can serve as a model for this kind of cooperation between two kinds of STSers. See Epstein (1996).

[24]This is literally an example, not a fixed program for our EASTS. There are other potentially useful and fruitful examples for our EASTS contexts, for example, Jasonoff's conception of "civic epistemology," or Lei Hsiang-lin's idea of how STSers, by resorting to "techno-science citizenship," would face the challenges of the mutually supported new transformations of technoscience, democracy, and society. See Lei's Chinese article in 2002, *Taiwan: a Radical Quarterly in Social Studies*, 45: 123–171.

[25]See Fu Daiwie's 「台灣的新適當科技運動?」, STS之構思、教學與實踐研習營, 第二梯次(2006).

a certain extent by the counterculture and yuppie culture of 1960s and 70s, and even by the World Health Organization (WHO) later, but they declined in the 1980s under the Reagan Administration.

Although the notion and movement of appropriate technology have had their problems and blindspots, as they were analyzed and criticized later by STSers like Longdon Winner[26] and Thomas Hughes for being ignorant of the STS heritage and the history of technology, we believe that, after upgrading, they still can be useful symbolic tools for us. Thus, an STS-informed and upgraded "new appropriate technology" seems to be the right candidate. As previously reported on the state of technology controversies in East Asian societies, it seems necessary for STSers to engage, and to make contacts and even alliances with various technologies that are perhaps different from the mainstream, but more appropriate for lay people or their communities,[27] in order to make a difference for the better in heated technology controversies and social actions. For example, some of our feminist STSers working in fields like Taiwan's history of obstetrics, midwifery, and birthing women are participating in Taiwan's midwife-reviving movements and various other women's health movements. Thus, feminist STSers' critical perspectives are very helpful in criticizing excessive medicalization in hospitals [e.g., excessive Cesarean sections (CSs), high rate of hormonal replacement therapy (HRT) users] and in seeing a number of alternative technologies as often more appropriate to women, such as midwife-assisted birth, home birth, vagina birth after CS (VBAC), vegetarian supplements for menopausal women, and even premodern midwives' techniques[28] in cutting and cleaning the umbilical cord, which had long been stigmatized by modern obstetricians. In short, forming an alliance among various isolated appropriate technologies here would likely make a difference.

Most technology controversies regarding appropriate technology are situated within their own social and historical contexts. Thus, many potential appropriate technologies, vastly different from each other, fight for their own legitimacy alone. Indeed, in the past, East Asian sociology-oriented STSers have made some major efforts to resolve these controversies by using various techniques of public participatory reasoning, notably the "consensus conference" technique, and this is

[26]See Winner (1986). One problem is that Winner blamed the California appropriate technology movement for its serious ignorance of STS heritage and the political economy of contemporary technology; hence people in the movement had the tendencies toward escapist consumerism and spiritual self-indulgence. See op. cit., pp. 79–80.

[27]In Taiwan's case, I am thinking of examples like: environmental and ecological movements, the controversy of excessive electo-magnetic waves, the anti-nuclear power movement, movements for renewable energies, women's health movements, the midwife-reviving movement, the advocate group for nursing rights, the movement for medicine-hospital reformation, concern groups for industrial injuries, human rights groups for people with AIDS, advocate groups for surrogate mothers, the birth-reform alliance, the bio-bank concern group, advocate scientists for renewable energies like wind power or solar power, advocate architects for alternative house-building for the people, popular science translation reform, and especially interesting is the advocate group for Taiwan's "vehicles assembled from used parts" 拼裝車 and other "creole technologies." See Lin (2001). Consider also the highly developed indigenous agricultural technology in cultivating a sub-species of wax apple as "black pearl" 黑珍珠 with high economic value: the story of "invisible technique." See Yang (2002).

[28]See Wu Chia-Ling's study: "Having Someone Cut the Umbilical Cord: Women's Birthing Network, Knowledge and Skills in Colonial Taiwan," paper presented at the annual conference of Taiwanese Sociological Association, National Taipei University, November 2005.

the very subject of our first EASTS special issue. However, public participatory reasoning, having originated in Danish S&T policy debates, seems in Taiwan to have developed into a general and deliberating method designed for modern public controversy generally; thus, perhaps it is a bit too broad for us. At the same time, it is a bit too narrow, at least in Taiwan's context, because it is applied to each controversy separately, focusing on the proper procedure of reasoning in solving specific technological controversies without quite trying to see how they are all connected in terms of STS. But this would miss the contemporary problematic for an "appropriate or intermediate" technology envisaged by Schumacher and others. And an STS-upgraded conception of appropriate technology naturally aims for a system of appropriate technologies.

Under such circumstances, an STS-upgraded "new appropriate technology" and public participatory reasoning could complement each other. And a banner of the STS-upgraded "new appropriate technology" could help form such a necessary alliance among various technology controversies that involve potential appropriate technologies. Of course, how exactly to build up such meaningful and theoretical articulations for different appropriate technological contexts of East Asia would be a very challenging work for EASTS to ponder and research. From this perspective, even a study of the histories of potentially appropriate or intermediate technologies in East Asian societies would be very worthwhile. Thus, in contrast to super-rich, modern technologies, in East Asia[29] we might like to pay more attention to the appropriate, the small, and the creole. As already mentioned for Taiwan's cases, we are thinking of C.H. Lin's "silent/silenced technology," H.R. Yang's "invisible technology,"[30] C.Y. Wu's "dirty-hand technology," C.L. Wu's "techniques of premodern midwives" and others, plus of course Taiwanese popular motorcycles and rice cookers, Chinese "lazy Susan" on dinner tables,[31] Korean metal chopsticks, Japanese video games and animations, and the all-time famous East Asian karaoke.

In commenting on my discussion about East Asian technology controversies and the idea of "appropriate technology," Hong Sungook of Seoul National University, also the Associate Editor coordinating our Korean branch of EASTS editors, made the following macro-level response:[32]

> [the author] noticed very acutely that controversies over technology characterize East Asian STS. If this is correct, I think it's because this huge system of

[29]About the STS-informed appropriate technologies in East Asia, certainly there are many more cases than the more "Taiwanese" examples presented in this position paper. In the discussion session for this position paper presentation at the 2nd EASTS Conference in Taipei, various other examples were given: For example, Tadashi Kobayashi stresses the Japanese social technologies involved in solving problems of interactions between sciences and society; Angela Leung mentions the East Asian history of business in encompassing East Asian science, technology, and medicine; Azumi Tsuge considers the rising Pacific-rim reproductive technologies; Fan fa-ti proposes "middle range theorizing" in EASTS as a strategy to compete with Western STS mainstream ideas, just like Latin American dependency theories and South Asian subaltern theories developed decades before.

[30]The first two kinds of Taiwanese technologies were mentioned in footnote 27 above.

[31]On the hybrid origin of the interesting Chinese "lazy Susan", see Lei (2004), esp. p. 40.

[32]The following long quotation, and a couple of shorter quotations thereafter, all come from Hong Sungook's commentary of my EASTS conference presentation. For the full text of his commentary, please see: http://sts.nthu.edu.tw/easts/2007/Hong%20Sungook.pdf.

> scientific and engineering R&D is designed and executed in a centralized and bureaucratic way, without fully addressing their practical consequences upon the society beforehand. Most ordinary people and many STSers become aware of the existence of certain kinds of scientific R&D, when they begin to create some kind of social troubles or noises. It is partly because of the inherent impossibility of predicting the consequence of uncertain scientific research; partly because of the hastiness with which the projects are designed in globally competitive environments; partly because there are too many researches going on. But whatever the reason is, STSers should think about very deeply how we should, and can, touch, intervene, or interfere with this whole process. You can call this intervention as you like: ..."citizen's participation in science and technology"... "alternative technology" and so on. More important than this naming is that we should make our historical and sociological research touch on and anchored into urgent and important issues of our society today.

Indeed, Hong nicely supplements my previous discussions about East Asian technology controversies, which are more on the level of activists and public intellectuals, with an approach that focuses on the macro and governmental level. He emphasizes the "inherent impossibility of predicting the consequence of ...research" and believes "no single scientist nor bureaucrat nor even the minister of science and technology [can] control nor even comprehend the whole system." But given this impossibility, the question is: What does he mean by in the quotation above "STSers should think about very deeply how we should, and can, touch, intervene, or interfere with this whole process"? This is more than an apparent contradiction, and it poses as a challenge to the ideal of social practices in EASTS. However, even if the whole system is beyond our control or comprehension, it does not mean we cannot intervene or interfere with it, to push it away from its current course, to de-stabilize a technological destiny or momentum, through building up a series of equally macro- and system-level practices (i.e., a whole series of appropriate or intermediate technologies). Let East Asian STSers work together and cooperate with conscientious scientists and engineers to touch, intervene, or interfere with these apparently uncontrollable technological systems!

To Conclude with Some Formal Statements

Finally, I conclude this position paper with some more formal statements. We strongly believe that East Asian STS will offer fresh STS perspectives because of its special local experiences, shared cultural and colonial histories, similar geological and meteorological makeup, and similar global positions[33] with respect to the West. For example, the democratization of science and technology policies, and the distinctive colonial and postcolonial experiences of science and medicine, which long have been developing in Japan and other newly industrialized East Asian countries, have attracted scholars and policy-makers throughout the world. No doubt, East Asia has a lot to offer STS communities worldwide.

[33]These positions are similar, but with important differences internal to East Asia, differences in terms of cultural, economic, political, and military powers.

With the exciting prospects of an East Asian STS, an international East Asian STS journal could play a crucial new role in promoting STS studies, not only in East Asia, but also throughout the rest of the world. Although there are currently several well-established STS journals in the English-speaking world, most are published in American and European countries, aiming at academic members of western societies as their main readers. Taiwan, located at the intersection of North East Asia and South East Asia, can serve as a coordinator to facilitate the growing efforts and networks from North East Asian STS communities, and to promote the potential enrollment of South East Asian STS into an internationally open and inclusive East Asian STS community. The idea of starting a new journal has gained strong support and encouragement from the East Asian STS communities, as well as from some Western STS scholars. After discussions with STS scholars in South Korea, Japan, Taiwan, China, and the West, we decided to name this journal *East Asian Science, Technology and Society: an International Journal*.

(One more word for readers of this position paper. In the second issue of EASTS, there will be several commentaries in response to this paper, as unending dialogues for the problematics and visions of EASTS.)

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