A Voyage to East Asian STS Theories; or, What Might Make an STS Theory East Asian

Ruey-Lin Chen

East Asian Science, Technology and Society: an International Journal, Volume 6, Number 4, 2012, pp. 465-485 (Article)

Published by Duke University Press

East Asian Science, Technology and Society: An International Journal (2012) 6:465–485
DOI 10.1215/18752160-1905045

A Voyage to East Asian STS Theories; or, What Might Make an STS Theory East Asian

Ruey-Lin Chen

Received: 31 August 2011 / Accepted: 25 July 2012

Abstract This article explores some possible forms that a special East Asian approach to STS studies might take. The goal is to build a methodology of East Asian STS theories. The first step is the articulation of a theoretical basis for such an approach. The author considers the potential for an East Asian STS theory by looking at two journals: *Taiwanese Journal for Studies of Science, Technology and Medicine* and *East Asian Science, Technology and Society*. To encourage regional theory building, the author suggests gathering concepts from different theories into a rudimentary theory or constructing a theory version based on current theories, making it explicit, and developing a family of East Asian versions.

Keywords STS · East Asia · theory building · politics of identification

1 Questions and Background

In the first volume of *East Asian Science, Technology and Society* (*EASTS*), Daiwie Fu, then the editor in chief, published a position paper titled "How Far Can East Asian STS Go?" (2007). Fu explored issues raised by proposing East Asian STS as a research field and by suggesting "East Asian" as an analytical category in STS studies. Among the issues he raised, the most important, in my view, remains theory building. Fu asked, "And haven't we theorized our East Asian STS case studies also mostly from established Western theoretical perspectives: SSK [sociology of scientific knowledge], SCOT [social construction of technology], ANT [actor network theory], Social

This article was presented as part of the session "What Are East Asian STS Theories?" at the 2010 4S conference in Tokyo. I thank all who commented—they gave me valuable stimulus. I also thank three anonymous referees for valuable questions, comments, and opinions. I want to single out for special thanks Joel Stoker, whose many comments, revisions, and suggestions have been invaluable, not just for the present article. I also want to thank Sam Gilbert for his excellent copyediting—it makes this article more readable. This article is part of my 2010 Taiwan National Science Council (NSC) project (NSC97–2410-H-194–106-MY3), and I thank the NSC for its financial support.

R.-L. Chen (✉)
Department of Philosophy, National Chung Cheng University, Taiwan
e-mail: pyrlc@ccu.edu.tw

Worlds, cyborg feminism, bio-medicalization and all that? In other words, what's the difference between EASTS studies and East Asian 'area studies' that apply Western STS perspectives?" (2–3). He continued, "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, 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" (4–5).

Fu implied that a Western STS perspective or theory applied to an East Asian case is not an example of a truly East Asian approach. If this is the case, his inquiries raise a few related questions: What, for instance, would an East Asian STS theory look like? Is an East Asian STS theory even possible? If so, what is it? Fu did not offer answers to any of these questions in his article.

In a response, Warwick Anderson expressed reservations about the suggestion that East Asian technoscience was somehow ontologically separate from other technosciences. He said, "Something else in this admirable prospectus made me a little uneasy: that is, the notion of compiling East Asian case studies of science and technology. . . . The advice of my East Asian colleagues may well be simply to get over it—but I wonder if we run the risk of entering into an ontological echo chamber, trying to collect examples of distinctively East Asian technoscience, when we should be examining instead the history and politics of 'the case,' and its colonial functionality" (2007: 250). If I do not misunderstand him, Anderson appears to have cast suspicion on the alleged distinctiveness of East Asian STS by emphasizing a deconstructive style of postcolonial STS research. As he explained,

> In exploring these local contingencies and accomplishments, it will always be important to avoid homogenization of the phenomena and monadization of mentalities. "Area studies" threaten to haunt East Asian STS. Thus there is the constant danger of fetishizing identity and dwelling on the ontological separateness of technoscience in the region, ignoring the messy politics and history of representation and practice. We need to be attentive to hybridization and creolization, and sensitive to nomad technologies, trickster sciences, and fluid identities. Indeed, East Asian STS in reframing STS should also corrode the very idea of East Asia, dissolving the hoary old ontological distinction—STS should become East Asia's postcolonial supplement, in deconstructive terms. (250)

Did Anderson reject the notion of East Asian STS theories? I am not sure whether I exactly grasp what Anderson was saying (and he appears to have later changed his attitude).[1] I think, however, that East Asian STS studies should not become a mere postcolonial supplement in a deconstructive style, if the term *deconstructive* refers to

[1] Reacting to a group of articles that appeared in *EASTS* in a section titled "East Asian STS and Area Studies," Anderson wrote that STS studies might usefully model itself on the finer aspects of area studies: "As we struggle to find useful analytic frameworks to explain the contemporary globalization of science and technology, we might benefit from trying to re-imagine science studies as a form of area studies. Setting aside for a moment the cold-war origin and instrumentalist character of much area studies, we could perhaps learn to admire the emphasis on linguistic competence, the importance of fieldwork, the tendency toward a multidisciplinary approach, the opportunity provided for interaction of scholars within and beyond the region, and the desire, often thwarted, for bounded comparison" (2009: 169).

the well-known philosophical project aimed at splitting the binary oppositions upon which much of the tradition of Western thought rests. I believe that we should pursue STS theories with an East Asian character to account for cases inside and outside East Asia. Where might we start?

The question "What might make an STS theory East Asian?" involves three key concepts: East Asia, theory, and STS studies. Many people tend to think that the key is the distinctiveness of East Asia, and they would reformulate the question as "What might lend an STS theory the distinctive features of East Asia?" They might invoke a set of common experiences—history, tradition, culture, society, and so on—as the distinctive features. Fu (2007), Fa-ti Fan (2007), Anderson (2009), and Yung Sik Kim (2010) have adopted this approach, though, as I show later, each had different ideas about the distinctive features of East Asia.

In this article, I take a quite different approach. For me, the question should be reformulated as "What might make distinctive East Asian STS studies theoretical?" As I will argue, the distinctiveness has been partially realized in some Asian STS journals, but no expected theory has emerged. Thus, the key may be not how to find or realize a truly East Asian character but how to make East Asian STS studies theoretical. This will require both a methodology and an identification politics of regional theory building. Such a line of thinking leads me to explore the theoretical features already found in STS studies, after which I suggest methodological and political strategies for building East Asian STS theories. In my concluding section, I reply to some possible criticisms by examining a specific example.

2 What Is the Special Character of East Asia?

In the second issue of *EASTS*, Fan, a Taiwanese historian who teaches at Binghamton University, State University of New York, presented "East Asian STS: Fox or Hedgehog?" (2007), in which he seriously considered the questions Fu had posed in the previous issue. He tried to characterize possible East Asian STS theories, noting some deficiencies in Anglo-American theories, whose fields of vision he deemed relatively narrow: "We cannot expect to find in 'mainstream' STS all the tools we need" (245). Fan offered a suggestion: "Ultimately, what East Asian STS needs are middle-range theories that are sufficiently grounded in particular historical and social contexts and that tackle historical and/or contemporary problems in East Asian societies. Such theories may also engage in fruitful dialogue with STS in the West" (246).

Fan further suggested that East Asian STS scholars should pay more attention to gender issues, macropolitics of science and technology, and its long-term history (2007: 246). He expected that the East Asian practitioners could and would develop conceptual tools to handle these issues. However, gender issues, macropolitics, and long-term history are not peculiar to East Asia. Of course, East Asia may experience these issues quite differently from the West, but this does not mean that Western STS theories cannot handle them. East Asian researchers still can and may apply Western or Anglo-American theoretical tools to these issues. Thus, paying more attention to specific issues does not ensure the development of suitable conceptual tools, nor does

it guarantee that an East Asian character will take shape. We have returned to our starting point: Which conceptual tools are specifically East Asian?

Can a theory be local or regional? From a universalistic point of view, all theories must be general and nonregional, so a way of approaching certain data that is limited to a particular region would not be a genuine theory. Is this fair? One can refute such a view by pointing out a number of counterexamples. For example, the geometric astronomy formulated in ancient Greece was specific to its time and place, as was the astronomy of ancient China. In addition, Aristotle's political theory was applied only to Greek city-states, while Daoist political theory was adopted only in ancient China. In fact, every genuine theory has stemmed from a particular cultural tradition and so is regional. Does this fact imply that East Asian STS theories have to be grounded in traditional East Asian modes of thoughts such as Confucianism, Daoism, Buddhism, and the like? I think not. The reason is that it is not clear whether those traditionally East Asian modes are capable of dealing with current science and technology. Moreover, life in East Asia has changed a great deal since the heyday of Confucianism, to take but one example. Traditional theories were born from very different contexts. The people of twenty-first-century East Asia need contemporary theories.

The regionalism of a theory appears to derive from the context of the investigated objects—on this both Fu and Fan agree. Indeed, the East Asian nations colonized by Japan in the twentieth century shared a postcolonial development of science and technology, as Fu emphasized. Does this mean that STS theories are all local and regional? Yes, but this should not prevent East Asian scholars from applying Western STS theories to quite different contexts. Consequently, we infer that a particular history and context is only a sufficient and not a necessary condition for East Asian character.

Let us imagine a specific situation. If a Western scholar built a theory based on investigating East Asian cases understood in terms of their history and context, how would we label that theory? Western sinologists are good examples. Should we regard their theories as East Asian? If a Western scholar's theory can be looked at as East Asian, so can those STS theories that have been applied to East Asian cases. All adequate applications of theories have to address history and context. If we refuse to regard theories developed by Western sinologists and STS theorists as East Asian, then the regionalism of a theory must be determined by the identity of the theory's builders. Does this mean that East Asian STS theories developed by East Asians can be applied to both East Asian cases and cases in other areas?

While the identity of a theory builder constitutes a qualification for defining a theory as local, it should not be an exclusive qualification, since that would trap us in the mire of essentialism and nationalism, which most STS scholars want to avoid. Furthermore, if we fix identity as the exclusive qualification, we would exclude possible contributions from scholars who do not hail from East Asia. How to solve the dilemma? I suggest the identification of East Asian theory with the East Asian STS community as a more inclusive way out. Membership in a community need not be based on citizenship or place of birth. We can define it as a subjective commitment to a certain action—identification implies engagement and enactment. Identification with

an STS community is an *academic identification*—a special kind of identification. It need not include social identification (but it does not exclude it either).[2]

Belonging to the East Asian STS community means engaging with it and contributing to its construction and development—including the building of its theories. And identification with a community implies not only one's subjective commitment to it but also intersubjective recognition of that commitment by oneself and the community. That is, members of the community also identify each other. Members participate in the construction of the community or its subcommunity, thereby assuring their inclusion. Indeed, as a large and complex group, comprising many subgroups, the East Asian STS community is being constructed. In a nutshell: *If a scholar, no matter her natural or national identity, identifies with the East Asian STS community, studies the technoscience and society of some East Asian area, engages with the development and growth of the East Asian STS community, and constructs a distinctive theory to analyze and frame her research objects, she is building an East Asian STS theory*.

However, one need not identify exclusively with the East Asian STS community. I certainly believe that such commitments can be multiple and fluid, as Anderson emphasized. Moreover, East Asian STS theories can certainly draw on foreign ideas, an idea I shall explore further.

Having rejected the universalistic view of theory, I still wonder whether an STS theory is global, even if it cannot be universal. This leads to my next question.

3 What Are STS Theories?

STS studies generally take a historiographic, anthropological, or sociological approach to their subjects, the various sciences and technologies. One could therefore say that STS theories are scientific theories. The definition of scientific theories has been debated for more than a hundred years among philosophers of science (Savage 1990; Suppe 1977). I will not review that history here. Applying philosophical views on scientific theories may not be very helpful. Instead, I will consider current practices in STS studies.

Many researchers in STS avoid using *theory* to refer to their interpretative grounds or analytical instruments. They may call their "theories" programs, frameworks, models, views or perspectives, approaches, *x*-ism, *x* studies, or even *x*-logy.[3]

[2] Some STS scholars may think that membership in their community must involve both academic and social commitments. They may feel that the latter commitment is necessary, because identification with a group implies engagement. But I think that social involvement is supererogatory rather than obligatory and certainly not necessary for academic identification.

[3] STS scholars tend to accommodate a variety of theories, as can be seen in several important collections, including *Science as Practice and Culture* (Pickering 1992), *The Social Construction of Technological Systems* (Bijker, Hughes, and Pinch 1989), and the first and third editions of *The Handbook of Science and Technology Studies* (Jasanoff et al. 1995; Hackett et al. 2008). Articles in *Science as Practice and Culture* (Pickering 1992) are presented in two parts: positions and arguments. The position part introduces Ian Hacking's philosophy of experimentation, David Gooding's theory of experimental agency, and Joan Fujimura's theory of social worlds. The argument part presents the disputation between David Bloor's strong program and Michael Lynch's ethnomethodology, and the debate between Harry Collins's empirical program of relativism and Michel Callon and Bruno Latour's actor network theory (ANT). In the first edition of *The Handbook of Science and Technology Studies* (Jasanoff et al. 1995), the editors title the second part

Examples include the strong program, the social constructivism of technology, the feminist perspective, the semiotic approach, the social worlds framework,[4] ethnomethodology, and postcolonial studies, among others. There is the distinguished actor network theory (ANT). However, the theory's advocates sometimes complain that the entire phrase and the term *theory* are misguided (Law 1999; Latour 1999).

Each phrase in my list refers to a theory (more precisely, a theory family made up of theory versions),[5] if we take a wider sense of theory. Each theory conceptualizes the interactive patterns between technoscience and society; provides a scheme to categorize the natural, the technological, and the social; offers its own special methods and methodologies; has its own unique perspective on technoscience and society as a whole; details a particular approach to empirical or field data; and sets up its own paradigmatic cases.

Conceptualization, categorization, methodology, perspective, approach, and paradigmatic cases are necessary constituents of any STS theory—and all are connected. Conceptualization and categorization determine a theory's unique perspective and anticipate the special methods to come; out of these emerges a special methodology and approach. All of these are embodied in paradigmatic cases. In contrast, a theorist can extract a mode of conceptualization, categorization, methodology, perspective, and approach from an established paradigmatic case.

Conceptualization endows theories with a certain *abstractness*, although STS researchers usually present their outcomes in terms of concrete case studies. Categorization (or recategorization) shows the *constructiveness* of theories, for it puts an antecedent categorical scheme on the world. A theory's methods and methodology ensure it is *applicable*, because they instruct researchers on how to collect and interpret data. A theory's paradigmatic case can create a space for an analogous extension to other cases, can make the development of new versions easier, and thus endows *extensibility* to a theory.

Perspective is a necessary constituent for STS theories. It projects out of a certain range of vision or a horizon. Everything within the range of vision can be seen clearly, but things outside the range become invisible. Perspective prevents an STS theory

"Theory and Methods" (This implies that it is difficult to distinguish between STS theories and methods.) Callon (1995) defines four "models" of dynamics of science: science as rational knowledge, science as competition in the market of knowledge, science as sociocultural practices (social constructivism), and science as an extended translation (ANT). Sal Restivo (1995) introduces Robert Merton's and Thomas Kuhn's functionalist theories, the conflict theory grounded in the sociological theories of Karl Marx, Max Weber, and Émile Durkheim, and the interest theory of social constructivism. In the third edition of *The Handbook of Science and Technology Studies* (Hackett et al. 2008), the editors title the first part "Ideas and Perspectives," which has eight readings. One can observe the proliferation and hybridization of STS theories from 1995 to 2008. Warwick Anderson and Vincanne Adams (2008) introduce postcolonial studies of technoscience. One can see that politics, institutions, and economy of science and technology begin getting attention. However, there is still a lack of attention to cultural aspects of technoscience.

[4] Advocates of the social worlds framework characterize it as a theory/methods package (Clarke and Star 2008).

[5] A theory version is an individualistic "theory." One may call it a theory variant by using a biological metaphor. What we call a theory is really a family of theory versions, because most advocates of the theory would tend to develop their own version (see Chen 2000, 2011), which are both similar and different and share a family resemblance. For example, ANT is really a family of theory versions, including Callon's, Latour's, Law's and others'.

from being general and global,[6] because some cases simply cannot be interpreted within its view. This implies that all STS theories, actual or potential, are local in a variety of ways. But this does not commit us to a *radical contextualism*, since I deny that every STS story depends on a unique context, and no stories can be extended across contexts. In fact, a good STS theory should be *cross-contextual* at the same time that it is local. Rejecting cross-contextuality would mean rejecting abstractness, applicability, and extensibility. Even if every STS theory is constructed from a concrete and particular context, those features allow the theory to cross its original context into another context.[7]

Having considered the structural elements of STS theories and their attendant features, I conclude that the prospect of East Asian STS theories is not only thinkable but also hopeful. My reflections have even suggested how such theories might be crafted.

To get some idea of what makes our notional East Asian STS theory distinctive, we might begin by asking in what sense we could say that a theory is Western. What is unsatisfying, for East Asian researchers, about applying Western STS theories to East Asian materials? Do we really need East Asian STS theories? To move the discussion close to the actual situation, in the following section I offer an overview of theoretical practices in two East Asian STS journals.

4 Reconstructing East Asian Character: An Overview of Theoretical Practices in East Asia

One can get a partial view of the achievement of STS studies in East Asia from two journals grounded in Taiwan. One is the international journal *EASTS*, sponsored by Taiwan's National Science Council and overseen by an international editorial board. The other is the *Taiwanese Journal for Studies of Science, Technology and Medicine* (hereafter *TSTM*), sponsored by Taiwan's National Science and Technology Museum.

TSTM was initiated in 2001 by Fu and other historians, philosophers, and sociologists of science, technology, and medicine. In the early years, its publication did not go smoothly. By the end of 2006, only three issues had appeared. At that point, I took over the post of editor in chief. Since then, *TSTM* has published two issues per year and established itself as a steady forum. By July 2011, twelve issues had appeared, although not all articles are in the domain of STS, narrowly construed. Some articles, for example, are straight histories of science or medicine, while others would most

[6] Here I am casting high doubt on the so-called globalization phenomena and the very idea of globalization. One can at most detect cross-regional or cross-contextual phenomena. There is too hurried a generalization from the cross-regional to the general in the whole globe.

[7] A theory is cross-contextual when it can be applied from its original context A to another context B. A theory can cross from context A to context B only in the case that B is structurally similar to A; otherwise, the theory does not cross. Thus, cross-contextuality does not ensure that a theory can cross to another context, because not all contexts are similar. Therefore, cross-contextuality does not imply generality and universality. This is why a cross-contextual theory is still local. Here readers can see that I am distinguishing among four different scopes: local or contextual, cross-contextual, global (general in the globe), and universal (general in the universe).

accurately be labeled history and philosophy of science. Still, in Taiwan most people familiar with the STS label would apply it to those articles.

Surveying the articles in the dozen issues, one can construct three basic classes that correspond to their degrees of commitment to theory. Class 1 includes articles by those evidently committed to a major theory—risk theory, for example, or ANT. These authors usually focus on a version of the theory they are applying that has been laid out by a celebrated scholar; for instance, three authors apply Bruno Latour's version of ANT to cases in Taiwan. In other articles, the authors do not explicitly invoke a single theory. I place such articles in class 2, because their authors offer explanations by picking concepts piecemeal from a variety of Western STS theories at will and applying them to phenomena. For instance, one author mentioned John Law's "making a mess with method," Michael Polanyi's "tacit knowledge," Ulrich Beck's "organized irresponsibility," and Bruno Latour's "translation and replacement" in his article (see Appendix 1, entry for Yang 2010). Class 3 comprises articles in which the authors appeal to no STS theory. Such articles should not, as I have already indicated, be attributed to STS studies, strictly construed. Table 1 presents a rough taxonomy of articles in the twelve *TSTM* issues. Each class has several subclasses. In Appendix 1 the information is broken down in detail, including lists of the articles in each issue.

EASTS was founded in 2007. After producing two issues in its first calendar year, *EASTS* has routinely published four issues per year. It had produced a total of sixteen issues as of July 2011 (when the present article was written). Unlike *TSTM*, *EASTS* is an international journal; its authors come from many East Asian countries—Japan, Korea, China, Taiwan, and even southern East Asian ones—and it is not uncommon for articles by Western authors to appear.

Table 1 A Theory-Based Taxonomy of Articles from *TSTM* (further details are given in Appendix 1)

Class	No. of articles
Class 1: One major theory	**14**
1.1 Risk theory	3
1.2 Foucault's genealogy	3
1.3 Actor network theory	4
1.4 Social construction of technology	1
1.5 Marxist theory	2
1.6 Social worlds framework	1
Class 2: More than one theory	**13**
2.1 Historiography of science, technology, and medicine in Taiwan	7
2.2 Technoscience, politics, and law	3
2.3 Review articles (STS, science museums, and gender)	3
Class 3: No STS theory	**18**
3.1 Historiography of Chinese science and medicine	4
3.2 History and philosophy of science	7
3.3 Historiography and ethics of science, technology, and engineering	7

Table 2 A Theory-Based Taxonomy of Articles from *EASTS* (further details are given in Appendix 2)

Class	No. of articles
Class 1: Several STS theories	**39**
1.1 Public understanding and participation	7
1.2 Cultural studies based on methods of historiography, ethnography (anthropological), and investigation	13
1.3 Postcolonial studies	12
1.4 The politics of technoscience (about races, nations, states, governance, etc.)	7
Class 2: Between STS and other related research traditions	**10**
2.1 STS and history of East Asian traditional science and technology	7
2.2 STS and philosophy of science	3
Class 3: Between East Asian and other areas	**13**
3.1 Chinese medicine around the globe	5
3.2 Public engagement in Australia and New Zealand	5
3.3 Science and technology in the West	3

Table 2 shows the theoretical content of the articles in *EASTS* up to July 2011, broken into a different set of classes. Appendix 2 provides detail about every class and subclass. I should note two points. First, there is no strong alignment with a specific theory in any article. What does this mean? I will return to this question later. Second, it is difficult to assign every article to just one class or subclass; they are not mutually exclusive.

Why do one-third of the authors published to date in *TSTM* commit to a major STS theory while no authors in *EASTS* do? A large proportion of articles in *EASTS* concern cultural influence, cultural difference and borders, the role of states and governments, conditions of technoscience, and society in colonized countries. Many compare the practices of STS specialists in East Asia to other research traditions or areas. Perhaps no single theory can offer conceptual tools robust enough to treat such complex and interfacial topics. By contrast, the authors who published in the local journal *TSTM* are working with a relatively small, relatively homogeneous sample, so a single theory could work well. If this explanation is correct, it would confirm that current STS theories are both regional and cross-contextual. They were generated out of a highly circumscribed context, say, Britain, France, or the United States, and can be extended and applied to cases in other contexts, say, Taiwan. But they may not be competent tools for intercultural cases.

As a local journal, *TSTM* still prides itself on a certain Taiwanese style or "Taiwaneseness." A vast majority of authors write their articles in Chinese, and twenty-nine of the forty-seven articles investigate local cases. One can see that some authors begin to think about how to assemble concepts from different theories to account for more complex phenomena. The journal has also published a significant number of articles from such fields as history of science, philosophy of science, history of technology and medicine, and so on. Some might say that *TSTM* defines Taiwanese STS studies.

As for *EASTS*, one can see that a majority of its authors have relied on a multiplicity of theories to address complex and varied subject matters. Authors pick suitable concepts from different theories and reassemble them to account for the cases they discuss. This sounds like the "hybridization and creolization" mentioned by Anderson. Many authors endeavored to highlight East Asian character in their cases. These show that the distinctiveness of East Asian STS studies seems no longer to be the problem. Above all, one author, Xiujie Wu, consciously responded to Fu's question in her article "Men Purchase, Women Use: Coping with Domestic Electrical Appliances in Rural China" (2008). She wrote, "Especially during the period dominated by the socialist plan economy, the appropriation of small-scale domestic technologies such as electric light or TV was enabled and directly shaped by state policy and the national economic situation. In response to the discussion about the positioning of East Asian STS by D. Fu (2007), maybe we could see in the results I have presented one unique characteristic of STS in some East Asian countries" (232).

In fact, a careful examination shows that most of the articles published in *EASTS* and *TSTM* identify phenomena related to science and technology that are peculiar to East Asia. And a number of articles have realized Fan's expectation that East Asian STS studies would address macropolitics and long-term history of science and technology. In addition, a large proportion of articles (twenty-five of sixty-two) fall into the categories of cultural studies and postcolonial studies. This echoes Anderson's expectation of a postcolonial supplement to mainstream Western STS studies. Would it be optimistic to declare that an East Asian style of STS studies has appeared in *EASTS*? Realistic is more like it. However, one still wonders: Have such practices satisfied Fu's expectation of "distinctive East Asian STS theories"? Can one find any distinctive East Asian STS theories in the pages of *EASTS* or *TSTM*? My analysis does not offer much hope on this score.

5 How to Make East Asian STS Theoretical: The Methodological Aspect

As I have described above, an STS theory is structurally organized by conceptualization, categorization, methodology, perspective, approach, and case studies. This structure confers every STS theory (version) the attendant features of locality, abstractness, constructiveness, applicability, extensibility, and cross-contextuality. To build an STS theory means making the structure and features explicit. It is apparent that the scholars who work in STS in East Asia have abundant case studies, distinctive area perspectives, and intercultural approaches. However, no one has done the synthetic work of rendering all of this abstract, applicable, extendable, and cross-contextual. Is there any *EASTS* or *TSTM* contributor who has conceptualized or reconceptualized the dynamic development of technoscience in East Asia (including colonizing countries and colonized countries); categorized or recategorized nature, technology, culture, tradition, or society; and proposed new methodologies? If no such author exists, neither does East Asian STS theory. This shows that the theoretical aspect, rather than East Asian character, is—from the perspective of theory making—the key problem with East Asian STS practices.

Let's recall Fu's question: Is East Asian STS different from simply applying Western STS perspectives to East Asian "area studies"? Simply applying Western STS

theories to East Asia does not produce East Asian STS theories. How about assembling or reassembling concepts out of a number of Western theories? Even if the strategy has frequently been used, it had not yielded new theories yet. Why not?

Let me introduce a biological analogy: a theory is an integrated "organic" whole. All constituents such as conceptualization, categorization, and so on, are interconnected "organs" in a "theory organism." All of the "organs" must be integrated to produce life. Mere conceptual assemblage usually fails to realize an "organic" integration.[8] Moreover, one has to assemble different concepts from different theories in order to fit with different cases. This yields many conceptual assemblages but not a versatile theory suitable for a variety of cases.

To build an East Asian STS theory, therefore, one has to promote a conceptual assemblage to an "organic" whole. We cannot start from zero; we have to stand on the shoulders of giants. We may develop East Asian versions of current Western STS theories. A theory version is both similar to and different from the original theory. It cannot be a mere application of the original theory. The theory version should reconceptualize and recategorize the original theory to produce enough differences to distinguish itself from a mere application. To resort to the biological metaphor again, a theory version is a theory individual, and a theory is really a theory family or population. So an East Asian version of a Western STS theory is a hybrid theory individual, just as parents from different ethnicities would give birth to a mixed-blood child.

Based on the above discussion and the biological metaphor, I want to suggest three ways or strategies for developing East Asian STS theory versions.

(1) *Criticizing or challenging current "mainstream" STS theories*. I have previously argued (Chen 2011) that criticizing other theories or theory versions is a necessary process of theory branching in STS. If one wants to reconceptualize and recategorize an STS theory, one must criticize or challenge it, subjecting its philosophical presuppositions to careful scrutiny. Detecting methodological, epistemological, and ontological deficiencies facilitates the process of revision and development.

(2) *Shaping different or conflicting concepts found in current STS theories into an organic whole*. This usually means reconceptualizing the theories. To give several examples, what would happen if one tried to introduce the naturalistic concept of causality to ANT?[9] What would happen if one introduced the concept of social reality

[8] Here I am using *wholeness* or *integration* rather than *organic* to distinguish between assemblages of concepts and theories. We can go further, drawing an enlarged analogy between discursive phenomena and organic phenomena. Thus, genes, cells, tissues, organs, and organisms (living individuals)—the basic units in biology—are compared to concepts, conceptual schemes, perspectives, approaches, methods, methodologies, and theories. Like an organism, a theory is a whole made up of other units—specifically, concepts, perspectives, methodologies, and so on. One may manipulate genes, cells, tissues, and organs separately and artificially reassemble them in a variety of ways, and one may do the same with concepts, approaches, and so forth. An assemblage of genes or organs is not an organism (a living individual); similarly, an assemblage of concepts is not a theory (an integrated "gestalt"). An assemblage of concepts can be developed into a theory if it can be integrated into an "organic" (interconnected) whole.

[9] In *Reassembling the Social* (2005), Latour identifies three key characteristics of ANT: the assignment of precise roles to nonhumans, the assumption of explanatory symmetry in the natural, and the commitment to reassembling the social. He wrote, "So if an account employs either a symbolic or a naturalistic type of causality, there is no reason to include it in the ANT corpus even though it might claim to be" (10). It is apparent that naturalistic causality is thought to conflict with ANT. Thus, introducing naturalistic causality to ANT would construct a new version of ANT.

to social constructivism? What would happen if one integrated social constructivism and ANT?

(3) *Reversing the orientation of hybridization*. Constructing an East Asian theory version, to return to my biological analogy, means developing a hybridized theory based on cases in East Asia. Only once the hybridization is explicit can one have distinctive East Asian STS theories. Reversing the orientation of hybridization is the best strategy to make them explicit. That is, one may extend an East Asian version to cases in areas outside East Asia and reproduce Western or non–East Asian theory descent. In such a situation, the East Asian version acts as an original theory or a theory parent.

The ultimate goal of building East Asian STS theories is to develop a family of theory versions which would be applied both in East Asia and elsewhere. This will go hand in hand with the growth of the East Asian STS community. I call this development the co-construction of East Asian STS theories and community. My idea thus can be tied to the East Asian social network project described by Dung-Sheng Chen (2008).[10]

6 An Identification Politics of East Asian STS Theories: Questions and Replies

Some readers may argue that what I am discussing is an artificial problem. They may doubt whether such a theory could be developed from the "abstract strategies" suggested in this article. They may think that the best way to develop such theories is to find "in what sense and in which aspect the Western STS theory is not proper to be used in the studies of East Asian case," and that "to meet the need in real STS study for East Asian cases, the modification of Western STS theory or even to build a new East Asian STS theory would be a natural process" (an anonymous referee's comment). This is a typical view from readers that devote their attention to the distinctiveness of East Asia STS when examining this issue.[11] As I have argued, however, East Asian STS theory building is not only a matter of fitting theory with cases; there is also the need for *a politics of identification—more precisely, a politics of communal commitment and recognition*. After all, as I have argued, almost all Western STS theories can, owing to their *cross-contextuality*, be applied to local cases in East Asian countries. Thus, why do we still discuss this problem at such length? The reason is that merely applying Western STS theory to East Asian cases is not identified as East Asian STS theory. An application of a Western STS theory is a confirming instance of Western

[10] It is worth quoting Dung-Sheng Chen's statement: "The emphasis on social networks in both the sociology of organizations and STS study may lead to a new interpretation of 'area study.' Obviously, social networks are established in a given location, but they keep expanding outside the boundary and including external actors. An open social network in an area can function as a strong engine for maintaining local distinctiveness by means of clustering effects. . . . It is very important to notice that an area-based network must remain open as well as relatively autonomous in order to develop a contextualized area study" (2008: 441). I want to supply a cross-contextualized area study to his good idea.

[11] This view also echoes the falsificationist methodology. However, the recognition of a new (STS) theory may be similar to that of a new scientific discovery. It is both methodological and social. Readers may refer to Brannigan (1981) on the sociology of scientific discoveries.

STS theory. A modification of a Western STS theory may be only a new version without the East Asian STS community's recognition.

It is interesting to consider Chung-Hsi Lin's "The Silenced Technology—Reassembled Cars on the Southern Plain of Taiwan," which appeared in the first issue of *TSTM* in 2001. Recommended as a "selected translation," it appeared under a slightly different title, "The Silenced Technology—the Beauty and Sorrow of Reassembled Cars," in *EASTS* in 2009. In this article, widely read in Taiwan, Lin explained how illegal reassembled cars could survive against the government's clampdown. He described the rise of reassembled cars, their negative image, the government's ban policy, and their plural roles in rural areas. He asked why the social role of the reassembled cars was not replaced by mass-manufactured vehicles. Lin argued that reassembled cars possessed many internal advantages, such as safety, low prices, and suitability to rural circumstances. Production could be adjusted rapidly, and the cars could be adapted to a range of uses. These features create a contextual and technological competitive niche for reassembled cars, dodging efforts to eliminate them and overturning their negative image.

What theory did Lin use? I have assigned this article to the social construction of technology (SCOT) category in my taxonomy (see Appendix 1) because the author investigates the link between relevant social groups (the government, the police, farmers, makers, etc.) and an artifact (reassembled cars), considers problems and solutions around the artifact, and proposes an explanation that resembles SCOT's own interpretative flexibility. However, Lin made no allusion to SCOT; he did not ask the same questions as the SCOT theorists usually do (e.g., he showed no concern about the closure of debates and the stabilization of the artifact). He even invented the concept of competitive niche to answer his own question. Did Lin develop an East Asian STS theory? It is reasonable to say that Lin's case study could be developed into an East Asian version or variant of SCOT, but he has not built an East Asian STS theory. He has not abstracted his case study into a conceptual framework, projected it to other cross-contextual cases, or made all that explicit. Up to now, not a single published article by a Taiwanese scholar has applied the framework of this study as an exemplar to other cases—although some have praised and cited it. Simply speaking, his study has not been identified with an East Asian STS theory by the Taiwanese STS community, although it has been highlighted as a distinctive East Asian STS study. Without a doubt, members of the community can theorize it, develop it, and make it explicit, but they have not done so. This fact illustrates that the recognition of a theory is a process of identification and commitment. The process, as I have argued, involves both methodological and political labors.

One may associate the advantageous image of reassembled cars with the assemblage of concepts from different STS theories and argue that an assemblage strategy is the perfect fit for East Asian STS. But this is only a metaphor. It requires a justification for why the East Asian STS community should satisfy many conceptual assemblages rather than pursue a theoretical "gestalt." If East Asian STS scholars want to develop a complete theory, they cannot stop at the assemblage of concepts. Moreover, a special assemblage of concepts may be developed into a theory. Why do we not advance it? Stopping at the assemblage strategy is not my preference. Dissenters may ask: Why should we pursue theories? Why not satisfy useful and plural assemblages of concepts? Since the explanatory strategy of assembling concepts is a distinctive feature of

East Asian STS, dissenters think that the best way is to endorse the assemblage strategy and give up the pursuit of theories. Can assemblages of concepts replace theories in East Asian STS studies? I am open to this question. But it is an obligation of advocates of the assemblage strategy to persuade the East Asian STS community.

7 Conclusion

I have not yet explored the reasons for pursuing (or not pursuing) East Asian STS theories—this is a further problem. What I have argued is how to go about building such theories, and its possibility and availability are prior problems. I have shown that it is quite possible to achieve this goal. I suggest that those who identify with the East Asian STS community, study East Asian cases, and engage in the development of an East Asian network are potential theory builders. After examining the partial STS practices in East Asia, I have found that the key problem is not coming up with something distinctively East Asian but, rather, developing the theoretical characteristics. Finally, I have suggested three strategies for overcoming that problem. The next step is to develop such a theory family.

References

Anderson, Warwick (2007). How Far Can East Asian STS Go? A Commentary. *East Asian Science, Technology and Society* 1: 249–50.

Anderson, Warwick (2009). Re-orienting STS: Emergent Studies of Science, Technology, and Medicine in Southeast Asia. *East Asian Science, Technology and Society* 3: 163–71.

Anderson, Warwick, and Vincanne Adams (2008). Pramoedya's Chickens: Postcolonial Studies of Technoscience. In *The Handbook of Science and Technology Studies*, 3rd ed., edited by Edward Hackett, Olga Amsterdamska, Michael Lynch, and Judy Wajcman, 181–204. Cambridge, MA: MIT Press.

Bijker, Wiebe E., Thomas P. Hughes, and Trevor Pinch (1989). *The Social Construction of Technological Systems: New Directions in the Sociology and History of Technology*. Cambridge, MA: MIT Press.

Brannigan, Augustine (1981). *The Social Basis of Scientific Discoveries*. Cambridge: Cambridge University Press.

Callon, Michel (1995). Four Models for the Dynamics of Science. In *Handbook of Science and Technology Studies*, edited by Sheila Jasanoff, Gerald E. Markle, James C. Peterson, and Trevor Pinch, 29–63. Thousand Oaks, CA: Sage.

Chen, Dung-Sheng (2008). STS and Area Studies: A Social Network Perspective. *East Asian Science, Technology and Society* 2: 439–44.

Chen, Ruey-Lin (2000). Theory Versions Instead of Articulations of a Paradigm. *Studies in History and Philosophy of Science* 31A, no. 3: 449–71.

Chen, Ruey-Lin (2011). The STS Challenge to Philosophy of Science in Taiwan. *East Asian Science, Technology and Society* 5: 27–48.

Clarke, Adele, and Susan Leigh Star (2008). The Social Worlds Framework: A Theory/Methods Package. In *The Handbook of Science and Technology Studies*, 3rd ed., edited by Edward Hackett, Olga Amsterdamska, Michael Lynch, and Judy Wajcman, 113–38. Cambridge, MA: MIT Press.

Fan, Fa-ti (2007). East Asian STS: Fox or Hedgehog? *East Asian Science, Technology and Society* 1: 243–47.

Fu, Daiwie (2007). How Far Can East Asian STS Go? *East Asian Science, Technology and Society* 1: 1–14.

Hackett, Edward, Olga Amsterdamska, Michael Lynch, and Judy Wajcman, eds. (2008). *The Handbook of Science and Technology Studies*, 3rd ed. Cambridge, MA: MIT Press.

Jasanoff, Sheila, Gerald E. Markle, James C. Peterson, and Trevor Pinch, eds. (1995). *Handbook of Science and Technology Studies*. Thousand Oaks, CA: Sage.

Kim, Yung Sik (2010). Specialized Knowledge in Traditional East Asian Context: STS and the History of East Asian Science. *East Asian Science, Technology and Society* 4: 179–83.

Latour, Bruno (1999). On Recalling ANT. In *Actor Network Theory and After*, edited by John Law, 15–25. Oxford: Blackwell.

Latour, Bruno (2005). *Reassembling the Social: An Introduction to Actor-Network-Theory*. Oxford: Oxford University Press.

Law, John (1999). After ANT: Complexity, Naming and Topology. In *Actor Network Theory and After*, edited by John Law, 1–14. Oxford: Blackwell.

Lin, Chung-Hsi 林崇熙 (2001). Chenmo de jishu—Jiananpinyuan shang de pinzhuangche 沈默的技術—嘉南平原上的拼裝車 (The Silenced Technology—Reassembled Cars on the Southern Plain of Taiwan). *Keji, yiliao, yu shehui* 科技、醫療與社會 (*Taiwanese Journal for Studies of Science, Technology and Medicine*) 1: 1–42.

Lin, Chung-Hsi (2009). The Silenced Technology—the Beauty and Sorrow of Reassembled Cars. *East Asian Science, Technology and Society* 3: 91–131.

Pickering, Andrew, ed. (1992). *Science as Practice and Culture*. Chicago: University of Chicago Press.

Restivo, Sal (1995). The Theory Landscape in Science Studies. In *Handbook of Science and Technology Studies*, edited by Sheila Jasanoff, Gerald E. Markle, James C. Peterson, and Trevor Pinch, 95–110. Thousand Oaks, CA: Sage.

Savage, C. Wade, ed. (1990). *Scientific Theories*. Minnesota Studies in Philosophy of Science 14. Minneapolis: University of Minnesota Press.

Suppe, Frederick, ed. (1977). *The Structure of Scientific Theories*, 2nd ed. Urbana: University of Illinois Press.

Wu, Xiujie (2008). Men Purchase, Women Use: Coping with Domestic Electrical Appliances in Rural China. *East Asian Science, Technology and Society* 2: 211–34.

Appendix 1: A Taxonomy of Articles in the First Twelve Issues of *TSTM*

Issue (year)	Author(s)/title
Class 1: One major theory (14)	
1.1 Risk theory (3)	
Issue 4 (2007)	Chou, K.-T., Public Trust and Risk Perception (in English).
Issue 5 (2007)	Fan, M. F., Discourses of Risk, Citizen Activism, and the Waste Facility Siting Controversy (in Chinese).
	Tu, W.-L., L. W. Shih, and Ting-I Huang, Risk Communication and Public Participation: A Case Study of Building Hsih-Chu's Science-Based Industrial Park in I-Lan (in Chinese).
1.2 Foucault's genealogy (3)	
Issue 3 (2005)	Li, S.-J., Foucault, Ginzburg and Writing the History of the Excluded (in Chinese).
Issue 6 (2008)	Wu, C.-C., The Call of Human Nature: Governmentality and Sexual Offense Prevention Policy in Taiwan (in Chinese).
	Chiang, Y.-L., Visible AIDS vs. Invisible AIDS "Patients": A Study on the Case of the Harmony Home Association Delivered by the Taipei District Court (in Chinese).
1.3 Actor network theory (4)	
Issue 1 (2001)	Lo, C.-C., Knowledge Mobilization in the Land Reclamation Project for the Sixth Naphtha Cracking Plant at Mai-Liao (in Chinese).
Issue 4 (2007)	Lin, W.-Y., On the Ontology of Actor Network Theory (in Chinese).
Issue 6 (2008)	Chiu, T., Where "Handicapped Facilities" Come From: A Network Analysis of the Construction Process of Barrier-Free Environments (in Chinese).
Issue 7 (2008)	Lu, S.-L., The First Grand Exhibition of "Miniatures" in Taiwan (in Chinese).
1.4 Social construction of technology (1)	
Issue 1 (2001)	Lin, C.-H., The Silenced Technology: Reassembled Cars on the Southern Plain of Taiwan (in Chinese).
1.5 Marxist theory (2)	
Issue 4 (2007)	Wang, C.-H., Bio-capitalism: A Marxist Critique (in Chinese).
Issue 11 (2010)	An, C.-C., From Chinese Herbs to Functional Food: A Study of the Category Revolution of Food and Drug by a Biography of Four-Agent Soup (in Chinese).
1.6 The social worlds framework (1)	
Issue 10 (2010)	Cheng, L.-F., Why Tampons Are Not Welcome in Taiwan: A Social-Worlds Analysis (in Chinese).
Class 2: More than one theory (13)	
2.1 Historiography of science, technology, and medicine in Taiwan (7)	
Issue 2 (2002)	Yang, H.-J., The Invisible Technique: The Socio-technical History of Cultivating Wax Apple (in Chinese). (Polanyi, Latour, Giddens, Geertz)

Issue (year)	Author(s)/title
Issue 3 (2005)	Hsu, H.-B., From Opium Gentlemen to Experimental Samples: Opium Users and Modern Medicine in Taiwan (in Chinese). (Foucault, Latour)
Issue 8 (2009)	Hsu, H.-B., Assaying Opium: Local Taste, Technoscientific Practice and the Opium Monopoly in Early Colonial Taiwan (in Chinese). (Latour, Shapin, Schaffer)
Issue 10 (2010)	Wang, H.-Y., From Hands of Flesh to Laparoscopy: A History of Endometriosis in Taiwan, 1950s–2000s (in Chinese). (Clarke's biomedicalization, Haraway, Foucault)
	Yang, H.-J., Local Knowledge in the Context of Expert Systems of Knowledge: Organization's Bridge-Building Practices (in Chinese). (Law, Bijker, Latour, Beck, appropriate technology)
Issue 12 (2011)	Lin, Y.-P., After the Death of Some Electric Workers: The Health Risk Controversies of Organic Solvents (in Chinese). (risk theory, the new political sociology of undone science)
	Jobin, P., Guinea Pigs Go to Court: Two Cases of Industrial Hazards in Taiwan (in Chinese). (Latour, sociology of law)
2.2 Technoscience, politics, and law (3)	
Issue 3 (2005)	Lin, K., and D.-S. Chen, Deliberative Democracy, Technological Policy and Public Discussion (in Chinese).
Issue 12 (2011)	Chen, H.-H., How Does Legal Justice Meet Scientific Fact? A View on Law, Science and Society through the Daubert Controversy (in Chinese).
	Chen, C.-L., The Politics of Epidemiology: A Meta-Analysis of RCA's Epidemiological Research (in Chinese).
2.3 Review articles (STS, science museums, and gender) (3)	
Issue 3 (2005)	Wu, C.-L., and L.-F. Cheng, Gender Politics of Technology: Theory and Research (in Chinese).
Issue 6 (2008)	Chen, C.-L., Science, Technology and Socio-culture: Reflections on Science Views (in Chinese).
Issue 7 (2008)	Lin, C.-H., Tension Exposed: Myth and Social Imagination of Scientific Exhibitions in Science Museums (in Chinese). (Kuhn, Latour, Habermas)
Class 3: No STS theory (18)	
3.1 Historiography of Chinese science and medicine (4)	
Issue 1 (2001)	Li, C.-M., Pulse (Mai) Diagnosis in the Zhou and Qin Periods and Its Origin from Official Learning (in Chinese).
Issue 2 (2002)	Scheid, V., Wujin Medicine Remembered: Memory, Identity and Social Networks in Chinese Medicine, 1800–2000 (in English).
Issue 8 (2009)	Li, S.-J., Demonstration, Persuasion and Rumor: Medical Missions to Nineteenth-Century China (in Chinese).
Issue 11 (2010)	Pi, K.-L., The Demarcation and Context of Illness Interpretation in Chinese Medicine and Western Medicine in the Early Period of the Republic of China: Taking Typhoid Fever as an Example (in Chinese).

Issue (year)	Author(s)/title
3.2 History and philosophy of science (7)	
Issue 1 (2001)	De Grant, F., Leibniz' Legacy in the Physics of the Enlightenment (in English).
Issue 5 (2007)	Tai, D.-Y., The Evolution of Astronomical Thought before Kepler: Copernicus and Tycho Brahe (in Chinese).
Issue 9 (2009)	Chao, H.-K., Toward and beyond Lakatos: An Introduction to the Philosophy of Economics (in Chinese).
	Chen, S.-T., Maneuvering between Theory and Fact: A Case Study of Economic Modeling (in Chinese).
	Chen, R.-L., What Did Gregor Mendel Discover? On a Typical Pattern of Experimental Discovery (in Chinese).
Issue 10 (2010)	Yang, B.-C., Reconsidering Mendel's Principles of Heredity: Based on the Logic of Experiment Design (in Chinese).
Issue 11 (2010)	Lei, H.-L., The Enigma Concerning Dr. Tsungming Tu's Research in Traditional East Asian Medicine: On the Creation of Value in Integrative Medicine (in Chinese).
3.3 Historiography and ethics of science, technology, and engineering (7)	
Issue 2 (2002)	Lin, D.-L., The Social and Economic Origins of Technological Catch-up: A Case Study of the Taiwanese Computer Industry in the Late 1980s (in Chinese).
Issue 5 (2007)	Chen, H.-A., Controversies over Evolution Theory in the *Science Monthly*, 1970–2006 (in Chinese).
Issue 7 (2008)	Fan, Y.-C., Visualizing Hygiene: Hygiene Exhibitions in Colonial Taiwan during the 1910s (in Chinese).
	Wu, H.-J., Small and Large Wind Turbines: Duality of Wind Power Technology (in Chinese).
Issue 8 (2009)	Chang, S.-C., The BCG Vaccination Program in Taiwan in the 1950s and 1960s (in Chinese).
	Kung, C.-C., The Discourse of Function and Temporality of Treatment in Modern Psychiatry: An Analysis of a Chronic Ward (in Chinese).
	Hsu, T.-M., Sustainable Development and Life Rights of Animals: The Transformation of Taiwan's Fishery from an Environmental-Ethical Perspective (in Chinese).
Issue 11 (2010)	Liu, S.-Y., Medicine, Business, and Social Imagination: Scientificalizing and Scientific Chinese Medicine in Colonial Taiwan (in Chinese).

Appendix 2: A Taxonomic List of Articles in *EASTS* from Issue 1 to Issue 15

This appendix provides only author names. Readers can search databases for article titles. Some brief comments are given for some particular articles.

Volume/issue number	Author(s)
Class 1: More than one theory (39)	
1.1 Public understanding and participation (7): Authors in the subclass usually appeal to Ulrich Beck's risk theory, views on experts and laypersons, the theory of deliberative democracy, Thomas Gieryn's boundary work framework, Michel Foucault's theory of governance, etc.	
Vol. 1, No. 1 (2007), Special Issue on Public Participation in Science and Technology	Juraku, K., T. Suzuki, and O. Sakura Chen, D.-S., and C.-Y. Deng
Vol. 4, No. 1 (2010), Special Issue on Biotechnology in East Asian Societies: Controversies and Governance	Ho, W.-C., B. Capps, and T.-C. Voo Sleeboom-Faulkner, M. E. Rei, W. Hayashi, M.
Vol. 4, No. 4 (2010)	Yamaguchi, T.
1.2 Cultural studies based on methods of historiography, ethnography (anthropological), and investigation (13): Articles in the subclass usually focus on cultural aspects, differences, or factors of science, technology, and medicine by applying a variety of conceptual tools from the general social constructivism, body politics, feminism, technology domestication theory, everyday technology theory, biomedicalization, ANT, boundary work, etc.	
Vol. 2, No. 1 (2008), Special Issue on the Hwang Scandal and Human Embryonic Stem-Cell Research	Leem, S.-Y., and J.-H. Park Kim, T.-H.
Vol. 2, No. 2 (2008), Special Issue on Constructing Intimacy: Technology, Family, and Gender in East Asia	Matsuda, M. Lim, S.-S. Wu, X. Park, C.-H. Flitsch, M.
Vol. 2, No. 3 (2008)	Tsuge, A.
Vol. 3, No. 1 (2009)	MacPhail, T. Lin, W.-Y.
Vol. 3, No. 2–3 (2009)	Shepherd, C. J.
Vol. 4, No. 1 (2010)	Chen, R.-L.
Vol. 4, No. 3 (2010)	Ma, E. J.
1.3 Postcolonial studies (12): Articles in the subclass focus on the history of science and technology in some East Asian nations or areas in a colonized period. Many particular and local views rather than theories are applied in those articles. Less theoretical concepts are invoked to explain colonial science, technology, and society.	
Vol. 1, No. 1 (2007)	Wang, W.-J.

Volume/issue number	Author(s)
Vol. 1, No. 2 (2007), Special Issue on Colonial Sciences in Former Japan's Imperial Universities	Kim, B. Setoguchi, A. Zaiki, M., and T. Tsukahara (These authors intend to develop the points about "double-sided" Japanese colonial science that stemmed from Tsukahara and Clancey.)
Vol. 1, No. 2 (2007)	Fan, F. (This author discusses the methodology of study of science and imperialism from the view of postcolonial studies.)
Vol. 2, No. 1 (2008)	Liu, S.
Vol. 2, No. 3 (2008)	Kim, S.
Vol. 3, No. 2–3 (2009), Special Issue on Emergent Studies of Science and Technology in Southeast Asia	Pols, H. Liew, K. K. Aso, M. Monnais, L. Mrázek, R.
1.4 The politics of technoscience (about races, nations, states, governance, etc.) (7): Articles in the subclass especially focus on the role of the state in technoscience, but no theory that includes the role of the state in the development of technoscience has been constructed. Some articles try to extend beyond the range of current STS theories.	
Vol. 2, No. 1	Cooper, M.
Vol. 2, No. 3	DiMoia, J.
Vol. 3, No. 1	Kuo, W.-H. (This author tries to propose two concepts, "bridging" and "voicing," to capture the special situation of Taiwan in globalization. The author ambitiously concludes that his article reveals the necessity for new methodologies and problematics.)
Vol. 3, No. 2–3 (2009)	Amir, S. Waldby, C.
Vol. 3, No. 4 (2009)	Salter, B.
Vol. 4, No. 3 (2010)	Tsai, Y.-Y.
Class 2: Between STS and other research traditions (10)	
2.1 STS and history of East Asian traditional science and technology (7)	

Volume/issue number	Author(s)
Vol. 4, No. 2 (2010), Special Issue on Specialized Knowledge in Traditional East Asian Contexts	Eyferth, J. Kim, Y. S. Li, C.-Y. Zou, Y. Shin, D. Chemla, K.
Vol. 2, No. 3 (2008)	Chiang, H. H.-H.
2.2 STS and philosophy of science (7)	
Vol. 5, No. 1 (2011), Special Issue on the Challenging Relationship between Philosophy of Science and STS in East Asia	*Articles:* Rouse, J. Chen, R.-L. Li, X. *Comments:* Bray, F. Lei, S. H.-L. Liu, B. Liu, H.-J.
Class 3: Between East Asia and other areas (13)	
3.1 Chinese medicine around the globe (5)	
Vol. 2, No. 4 (2008), Special Issue on the Globalization of Chinese Medicine and Meditation Practices: All articles in the special issue discuss Chinese medicine (East Asian medicine) in some Western countries such as Germany, Britain, and Norway.	Hsu, E. Scheid, V. Tao, I. F. Ryan, A. Sagli, G.
3.2 Public engagement in Australia and New Zealand (5) (From a purely geographical view, Australia and New Zealand are not located in East Asia. However, from the view of geographical or regional politics, the two countries may be included in East Asia.)	
Vol. 4, No. 4 (2010), Special Issue on Engaging Publics/ Engaging Science in Australia, Japan and New Zealand	Cronin, K. Baker, V., J. Fowles, and D. Phillips Hindmarsh, R. Wolf, A. Healy, S. A.
3.3 Science and technology in the West (3)	
Vol. 1, No. 1 (2007)	Levidow, L. Wynne, B.
Vol. 4, No. 3 (2010)	Ewertsson, L.