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A Cosmopolitan Approach to Transboundary Risk Governance in East Asia

Kuei Tien Chou | National Taiwan University
Yun Hsiang Lin | National Taiwan University
Jui Ning Chang | National Taiwan University

This paper points out that while genetically modified organisms (GMOs), bovine spongiform encephalopathy (BSE), and the Fukushima nuclear disaster that respectively occurred in the three East Asian countries of Taiwan, South Korea, and Japan, resulted in the emergence of compulsory cosmopolitanism, from the perspective of cross-border and transnational action. Although these countries all have full social movements domestically, a failure to develop connections between their organizations has resulted in these countries not yet seeing the emergence of cosmopolitan risk collectivities and a regional risk community. The authors explain that these countries have a common historical background of authoritarian politics, with all three possessing the structural factors of expert politics, scientific hegemony, and economic developmentalism. Such conditions formulate the hidden ignorance of risk and stagnates transformation. Therefore, not only are we yet to see any transnational connections between the NGOs in East Asia but there is also an emerging "hung risk governance."

Keywords: *Risk governance, Cosmopolitanism, Transboundary risk, East Asia, Embedding the regional*

Introduction

Beginning in the 1990s, the field of environmental social studies experienced a major change as it expanded from the more traditional emphasis on environmental pollution to incorporate issues as varied as climate change, genetically modified organisms (GMOs), bovine spongiform encephalopathy (BSE), avian flu, nanotechnology, and even chemical pollution. Each one of these started as simple environmental problems, and yet over time developed to become hybrid, scientifically uncertain, transboundary, and invisible risk issues. Such developments have in turn forced a paradigm shift in this field of research. There is a strong body of research that touches on this development, including articles written by Krimsky (1991), Yearley (2010), Levidow (2001), and Gaskell et al. (2006); Lidskog et al.'s (2010) analysis of GMOs; research by Hannigan (1995), Reusswig (2010), and Heinrichs (2010) on the impact of acid rain and climate change on environmental sociology; and Wynne and Dressel's (2001) analysis of the transboundary risks of BSE. Tindall (1995), Clow (1995), Schrecker (1995), and Heinrichs and Gross (2010) also discussed the interdisciplinary trends and challenges in environmental sociology. It is clear from the work that these researchers have done that the risk research of technological disputes and uncertainty is today integrated with environmental sociology, with a growing emphasis on interdisciplinary integration, and inter- and transdisciplinary research (Gross and Heinrichs 2010), as well as on the risk society and risk governance (Sellke and Renn 2010).

During this transition toward adopting transboundary environmental risk analysis, the discussion that has gained the most prominence and attention is the scientific knowledge production and discussion of the environment and risk. On the topic of the risk society, Beck (1986) has long argued for the emancipation of technology from science and the return to the essence of autonomy during the age of Enlightenment unencumbered by the distortion of political policymaking. Relevant early research after Beck was conducted by Hannigan (1995) and Jasanoff (1990). Fischer (2000) has also highlighted the role of scientific knowledge on environmental regulations, politics, and advocacy, as well as the types of scientific knowledge produced by epistemic communities, which have become the focus of both policymakers and environmental activists in their attack and defense. Furthermore, countless research has been conducted by Fischer (1990), Jasanoff (2003, 2004, 2006), Lidskog et al. (2010), and Beck and Forsyth

(2015). On the different research approaches to the subjects of expertise and technocracy, including how experts face public challenges, their production of scientific knowledge and local knowledge, as well as expert democratization. Research has also been focused on how socially robust knowledge has been used to challenge official or mainstream scientists, such as in the works by Nowotny (2003), Nowotny and Leroy (2009), and Miller (2008, 2015). Irwin (1995), O'Rourke and Macey (2003), and Ottinger (2010) have also observed how civil society can produce scientific knowledge to challenge the official scientific discourse or the scientific data released by polluters.

As such, these issues are intertwined with transboundary risks; on the one hand, they represent a newly emerging approach within the field of environmental sociology, while on the other, these emerging transboundary environmental and technological risks are also imbued with the meaning of cosmopolitanism, and therefore can no longer be studied at the level of the nation, and would need to be analyzed in the context of a global or regional governance structure. This paper will focus its analysis on transboundary risks, such as GMOs, BSE, and nuclear risks, within the context of three East Asian countries, by analyzing their cosmopolitan governance in the context of regional traits, structures, and problems.

Literature Review: Transboundary Cosmopolitan Risk

Cosmopolitan Sociological Perspectives

Transboundary risks are environmental and technological issues that are trans-scale, trans-spatial, and cross-border in nature (Bulkeley 2005). New research visions and methods are therefore required to incorporate the study of cross-disciplinary and large-scale issues of scientific uncertainty that exist in different countries and regions, in issues such as climate change, air pollution, disease, avian flu, BSE, GMOs, nuclear energy, digitalization, and artificial intelligence. Considering this, there is a need to replace methodological nationalism with methodological cosmopolitanism, and the vision and structure of social science research would therefore need to move beyond the traditional analysis of using the nation as a backdrop, toward adopting a cross-border approach and a global vision (Beck and Sznaider 2006; Beck and Grande 2010).

In terms of research methodology, methodological cosmopolitanism

analyzes the transboundary risks that are simultaneously occurring in various countries globally. Using this method, this article will attempt to understand the characteristics of transboundary risks encountered by each country, and instead of being limited to studying the governance conflicts produced by the internal political and economic structures in each country, this article will seek to identify the commonalities and differences in governance models.

The sociological relevance associated with understanding global risk through cosmopolitanism lies in its heuristic use as a *medium*. For example, in the Renaissance, Dussel (2005, p. 50) claimed that it was Francisco de Vitoria and not Hugo Grotius who was the founder of international law by exemplifying de Vitoria's doctrine "*res-publica totius-orbis*," in which a problem was delineated regardless of religion and culture, which intimated that sovereign countries had equal rights in the international society. Francisco de Vitoria also laid the foundations for a new, specifically modern cosmopolitanism in his famous lectures *Relectiones De Indis* (*On the American Indians* 1539; Gao 2017). Shocked by the massacre of the Incas, Vitoria denounced the emperor's and the pope's world domination claims and, based on new geographical knowledge, repudiated the theory of the natural slavery of barbarians, proclaiming the "human dignity and land rights of all people in all regions of the world." (Schelkshorn 2019, p. 427); therefore, cosmopolitism referred to "equality." More specifically, to make sense of the research approach, it is argued that because of its critique of Eurocentrism, methodological cosmopolitanism, in particular, provides more acceptable sources.

Beck and Sznaider (2006, p. 15) defined cosmopolitanism as an abstract of ethics and claimed that it had a value that should be echoed in government actions and international civil society. Beck further claimed that the structure of the global risk society was based on a societal rationalization that had arisen from modernization, which had produced risks and had engendered social differentiation through insecurity.

First, Beck argued that the first modernity had moved to second modernity in which "dangers were being produced by industry, externalized by economics, individualized by the legal system, legitimized by the sciences, and made to appear harmless by politics" (Beck 1998, p. 16). Second, Beck claimed that methodological cosmopolitanism, as a new cosmopolitan perspective, could deal with the new global risks associated with commodities, pollution, information, knowledge, money, people, and global images, that is, methodological cosmopolitanism pluralized cultural belonging and was "bringing transnational conflicts and commonalities into the everyday

practice which necessitate political (state) and sub-political (civil society) action" (Beck 2006, p. 34). Finally, and probably most importantly, Beck's methodological cosmopolitanism (Beck 2011) is a method for interacting with others and things in the world and requires that reflexive modernity be embedded in the multifarious contradictory contingent realities to predict socio-cultural and political complexities and uncertainties and potentially reveal the global spirit underlying the interplay between the ("cosmopolitanized") practices and structures and their unpredictable side effects. Beck established "a deeper real-cosmopolitanism," in which events can only be generated, asking, "In what sense does the globalization of risks and crises become 'real' against the background of different contexts of historical experience, and how are they politically processed?" (Beck 2006, p. 77).

Critical Cosmopolitanism: The East Asian Context

Beck's methodological cosmopolitanism concept and especially his Eurocentrism have been widely criticized, most notably by postcolonial scholars. For example, Fine's discussion on Beck's *Cosmopolitan Vision* (2006) and other works, claimed that Beck's claims were "… 'methodologically Eurocentric,' rather than methodologically nationalistic," and that "he represents the Westphalian order of independent nation-states as the framework of international relationships" (2007, pp. 9-14), that is, Beck was the epitome of postcolonial scholarship. However, while Bhambra (2007) claimed that Beck's ideas provided better resources for making sense of our contemporary world, Costa (2006, pp. 122-123) felt that Beck's risk and cosmopolitanization concepts had historical and historiographical deficits as they disregarded the tensions between the various geographical levels of analysis. Fine (2007), Chernilo (2007), and others criticized methodological cosmopolitanism because of its explicit imperiled and postcolonial reality, claiming that Beck was misrepresenting the non-national horizons and the continuousness associated with social theory and methodological nationalism (Bosco 2020, p. 91), that is, methodological cosmopolitanism was nothing more than a social theory that mirrored the nation-state's historical ambivalences by trying "to 'square' the circle of the project of modernity" (Chernilo 2006, pp. 17-18).

Arguably, it could be said that Beck did misrepresent "cosmopolitanism and multiculturalism" and "continues to ignore the presence of Others on the global stage with his assumption that the European 'social settlement' presents the apex of negotiating the contradictions of the modern world

order" (Beck 2000, p. 89). Bhambra (2011, p. 320) argued that Beck's critique of methodological nationalism and the cosmopolitan alternative reduced world society to a European self-understanding and was blind to the imperialist structures that gave European modernization its global range in the first modern period (Bosco 2020, p. 92).

In his critical discussion on methodological cosmopolitanism and other works, Beck was trying to extend "cosmopolitanism." This appeared evident in the *British Journal of Sociology* special issue he edited with Edgar Grande on the "Varieties of Second Modernity" (Beck and Grande 2010) and, more significantly, in a posthumously published conference paper that was presented in Nagoya, Japan, in which he acknowledged "that it is impossible to talk meaningfully about methodological cosmopolitanism without pulling down the walls of Euro-centrism" (Beck and Grande 2010, p. 411). Beck also acknowledged that "cosmopolitanism" developed out of Eurocentric biases that needed to be painfully excised for execution. This proposed paradigm shift was illustrated in graphic examples of the drastically altered social relations and social inequalities from around the globe, that is, "The development of a cosmopolitan vision in the social sciences demands not simply the token adoption of methodological cosmopolitanism, but the painful excision of deep-seated Western and Eurocentric biases" (Beck 2011).

Despite the appeal of these whole relationship concepts, such as the relationship between climate change and its risks or between multiple modernities and the globe's social and political participants, including countries, NGOs, and political parties, we concur with the postcolonial critics of both cosmopolitanism and the "Eurocentric" perspective. However, Hulme (2010) felt that Beck's cosmopolitanism could be useful in assessing the changing political, sociological, and psychological attributes of climate change.

In our view, the strength of Beck's methodological cosmopolitanism was that it clearly distinguished "cosmopolitan," "world risk society," and "regional." This conceptual distinction is important as "It can only be 'seen' by observing "Europe from a non-European perspective; that is, with Asian eyes" (Beck 2016, p. 267). In other words, methodological cosmopolitanism includes other "experiences of and perspectives on modernization but corrects and redefines the self-understanding of European modernity" (Beck 2011, p. 28). This may have been why Beck stressed the importance of *regional* powers and his concept for a "cosmopolitan perspective" (Beck 2014a, p. 76); therefore, the postcolonial criticism of Beck was not meaningless. To further expand on Beck's cosmopolitan methodology, cosmopolitan

sociological perspectives could be used to examine Asian imperialism (Japan), postcolonialism (Korea and Taiwan), and cosmopolitanism in the East Asian region. The following section discusses the use of Beck's methodological cosmopolitanism in our analysis framework.

Demise or Rise? Developmental States in East Asia

The research approach in this paper differed slightly from Beck, who emphasized that as methodological cosmopolitan analysis units were embedded in the political and social contexts of individual countries (embedding the national), a cosmopolitan governance perspective needed to be adopted when seeking political transformations (outside of the nation-state perspective) (Beck 2014a), also included regional governance characteristics in the analysis (embedding the regional) because the political, cultural, and geographical affinities in each region could give rise to similar governance models in the "macro level regimes" (Beck 2014b, p. 180).

If these approaches are understood as developmental state theory, it is because of the new voices emerging in the "decline" or "rise" of space. As Kim (1999, p. 457) argued, "the decline of the developmental state" and talk of neo-liberation are related to changes beyond statism. Since the 1980s, big business (*chaebol*) has transformed from a mercantile system to a more market-oriented system, which means that the state has been unable to maintain its old-style developmental, authoritarian system, which in turn has led to a significant decline in the state's power to dictate the civil society.

However, first, let us clarify the matter. Kim (1999) and, earlier, Evans (1995) aligned the "developmental state" with state autonomy or "embedded autonomy." Öniş (1991), however, argued that development was designed to establish a free market regardless of the historical, institutional, or political contexts. For example, institutional logic developed the strategic market industrial policies to promote high East Asian GNP growth, which Öniş (1991) claimed was associated with moving "toward a new paradigm." More specifically, developmental state theory embodies "autonomy," which has allowed political economies to coexist with Western liberal styles in East Asia, such as in Japan (Ministry of International Trade and Industry), Korea (Economic Planning Board), and Taiwan (Council for Economic Planning and Development). This "autonomy" provides strategic policymaking and technological guidance for the selection of the key industries to be encouraged and a stable private investment environment for risky, long-term investment projects.

Weiss (1998) argued that the developmental state transforms because of capacity change, which indicated that the East Asian bureaucracies had generally been effective coordinators as they had used their insulation from special-interest constituencies to develop more encompassing networks, that is, these specific state "powers" and transformation capacities could be seen to be particularly East Asian.

This type of casual conceptual application to whatever is of interest or relevance in the developmental state does not deny the society and state that Kim and Thurbon (2015) called "developmental environmentalism, […] and how 'green growth' was translated into swift and sustained policy action." Rather, it means that the state and society are embedded in their calls for development.

There have been several studies that support this argument. Based on an expeditious adoption of Eestern economic development logic, Chang (1999) used a "compressed modernity" concept to analyze South Korea's linear growth, claiming that compressed development and the rigorous pursuit of technological development had led to social imbalances and major disasters in the 1990s. Chou (2000, 2002, 2004) also adopted a "delayed, hidden high-tech risk society" concept to analyze Taiwan's accelerated industrialization in response to the threat of global competition and to observe its science and technological development.

However, the lack of scientific introspection has resulted in serious hidden technological risks, with delayed governance leading to even greater risk controversies. After analyzing large-scale East Asian risk and disaster experiences and based on a hypothesis that these countries had taken a particular pathway toward modernity that had made them more vulnerable to deficiency risks, Han and Shim (2010) concluded that risk was possibly "regional." These previous analyses examined East Asian technological development and modernization processes and the problems that had resulted from them. If the problems were caused by the rush to modernize (Beck and Grande 2010), then an "embedding the regional" perspective could be suitable for exploring the characteristics of these problems and the significance of developing cosmopolitan governance in East Asia.

For example, the modern histories of Taiwan and South Korea have included authoritarianism and democratization, and similar to the political culture in Japan, the technological elite and authoritarian technocracy dominated science to put their countries on the fast track to industrialization, which in turn led to other countries imitating their developmental models in a bid to catch up with the linear modernization of the West.[1] This rush to

modernize led to a loosening of regulations and a laissez-faire approach to technological risk, especially since the adoption of neoliberalist ideologies in the 1990s.[2] In particular, when East Asian countries felt under pressure from the US after these three countries were afflicted with the transboundary risks of GMOs and BSE, the challenges facing their governance were exposed.

Luhmann (1990, pp. 140-141) claimed that societal systems and environments have close connections between risk and decision, that is, risk must be seen as decisions concerning the future. As decisions are always made with a contingent future in mind, the possibility, or risk, of unintended consequences is always present. Therefore, all decisions, including decisions concerned with safety, are connected to risk (Luhmann 1990, pp. 134-135, 159-160), which means that it makes no sense to oppose the risk to safety. In Luhmann's (1990, pp. 134-140; 1991, pp. 30-38) opinion, the question of risk must be thought of within the code-distinction risk/danger when observing decisions concerning the future. However, risk for Ewald (1991, p. 198) is a way of observing given phenomena (damages) from an insurance point of view, that is, there is an inner connection between risk and insurance.

However, Beck (1993, pp. 278-279; 2007, pp. 252-258) criticized Luhmann's distinction between "risk" and "danger" as being too relative (about themes and situations), which made it difficult to demarcate the social lines between conflict and risk. Beck (1997 [1993], p. 27, 112, 124, 157) also criticized self-referentiality, claiming that this failed to acknowledge the increasing interdependence of social systems in reflexive modernity. Finally, Beck (1997, p. 55)—in line with Habermas (1994 [1992], p. 67)—emphasized that social systems were not "subject-free"; on the contrary, they are reproduced by the actions of society, and thus they are dependent on its consent. The polemic in this passage is not directed exclusively against

[1] However, beginning in 2000, authoritarian expert politics under the increasing trend toward technological democracy, has been faced with fierce challenges from an increasingly robust civil society (Chou 2009). Whether it be the compressed modernity or stagnation resulting from the rush for modernization (Chang 2010), or the hidden and delayed technological risk society (Chou 2000, 2008, 2009), both explanations point to the antagonism between the government and civil society; and the reality is that over the long term, a more fragile risk and regulatory culture have developed in East Asia, as compared to Western industrialized societies.

[2] In East Asia, the high level of confrontation between the government and public is not only a reflection of the unique authoritarian expert politics in these countries but there is a need to also pay attention to the impact of the prioritization of economic growth, loose risk controls, and nationalism, as Beck (2014b) highlighted it as the hidden coalition between neoliberalism and nationalism. This is to say, that neoliberalism is implicit in the iron cage of authoritarian expert politics, which has tied up the hands of governance and civil society.

Luhmann as Luhmann's theory may not be vulnerable to all these theoretical failings. However, it could be said that (1) Luhmann's approach could be characterized as holistic, and (2) the methodological cosmopolitan approach is more instrumental in focusing on the transboundary risk concept.

As can be seen from the cases in our research, the risks produced by GMOs, BSE, and the Fukushima Daiichi nuclear disaster already constitute compulsory cosmopolitanism (Beck 2002). Furthermore, the reality is that the technological controversies and impacts in these societies have already resulted in what several academics have referred to as cosmopolitan risk communities (Beck 1996, 2009; Beck et al. 2013; Chang 2015), because whether it be GMOs, BSE or nuclear disasters, these are all transboundary and cross-border risk and threats, which therefore result in the fates of these three countries is tightly intertwined. In other words, even if these societies did already have a certain degree of cosmopolitanization (Beck and Levy 2013) and the risks would have forced them to develop further. However, the understanding of the extent to which these three societies have experienced cosmopolitanization and whether have they reached the point of producing imagined cosmopolitanization risk collectivities (Beck and Levy 2013), as well as whether the visualization of these common risk communities would enable the production of transnational actors, activities, networks, institutions or standards, in the government or civil society (Grande 2006). Otherwise, they could be latent cosmopolitan risk communities independent of one another of the pressures and regulations of hidden cosmopolitan risk governance in their countries. If this is the case, will this result in the isolation, fragmentation, and fragility in the risk controls of the individual countries within this region, resulting in their respective governances and civil societies lacking the space to develop social movement, cooperation, and governance, and if so, what could the reasons be?

Civil Society And Socially Robust Knowledge

Indeed, Evans' concept of the developmental state of total control, bureaucracy, policymaking, and the technological elite institutes of society does not license the conclusion that the state is unable to connect to society and is an "embedded autonomy." To contemplate the unique risk governance structure in East Asia, it is necessary to understand it from the perspective of contemporary technocracy and regulatory science. Based on the operational experiences of regulatory science in Western industrial countries, Jasanoff (2005) explained that as contemporary technological affairs are dominated by

technological bureaucracy, this has resulted in the development of invisible or monopolized domination in various countries, which not only violates democratic policymaking procedures but also generates considerable controversies.

Ianoni is correct to point out that the concept to developmental state theory perspective is palpably in mainstream neo-Marxism and neo-Weberianism, the character of which is, "as says Przeworski (1990, p. 52), autonomy 'is an efficient instrument of analysis when indicates one among different possible historical situations'" (Ianoni 2013, p. 590). That is to say, in the context of neo-Marxism, Poulantzas (2018 [1968]) argues that although the state has bureaucratic power, it does not really have power of its own because it is still controlled by the bourgeoisie, i.e., the relative autonomy of the state (Skocpol 1979, 1985), that the state certainly has its own autonomy, which is explained through the social transformation of the state. However, if this is the case, then how can the formation of civil society and democracy be explained? Mann (1984) provides the clear and revisable concepts, he argues that the institutions and functions of the state have always been confused in terms of state autonomy and proposes elements of a Weberian approach, that is, the penetration of the power of civil society through infrastructural measures. He also correctly emphasizes the *infrastructural power* and *social and territorial relations* of such schemas, which he argues "Any state which acquires or exploits social utility will be provided with infrastructural supports. These enable it to regulate, normatively and by force, a given set of social and territorial relations" (Mann 1984, p. 208) and "Yet the increase in infrastructural penetration has increased dramatically territorial boundedness" (Mann 1984, p. 210). Moreover, Hundt (2015) argues the Mann's perspective and points out that the change between the developmental state and civil society has been attributed to the small government concept promoted by the advent of neoliberalism in Korea, which has led to the release of civil society from its original shackles, but, "At the same time, the state thwarted the efforts of civil society to oppose the implementation of economic reform in three spheres: the labour market, corporate governance and social policy, and trade policy" (Hundt, 2015, p. 478). In our view, although civil society has been liberated, this does not mean that it has gained robust autonomy, as the developmental state has already penetrated civil society through its infrastructure, leaving civil society still largely at the mercy of government funding. In contrast, Nowotony et al. (2001) pointed out that, faced with all kinds of technological risks, modern society has gradually evolved from being a passive victim to being able to provide a mature reflection and critique

of the pathway toward sustainable development. In particular, society has developed robustness in responding to the various technological impacts on the environment, ethics, and health, and has also developed the socially robust knowledge (SRK) to monitor and challenge the wrongful acts of government (Nowotony et al. 2001; Nowotony 2003; Jasanoff 2003; Stirling 2007; Weingart 2008; Nowotny and Leroy 2009, and Delvenne 2010). During this process, if citizens can break away from their passivity and be able to systematically develop their risk knowledge, then they will have the opportunity to break through the monopoly of authoritative politics to shape a technological democracy. It would be necessary to explore whether there are other East Asian countries with similar experiences in their development, or whether different governance structures would also produce considerable restrictions.

Transboundary risk incidents in these countries have been associated with the following: policymaking models and regulatory science, risk communication and social anxiety, mastery of social robustness and trust in government, cosmopolitan risk communities, and cosmopolitan risk governance. Therefore, these need to be considered when examining cosmopolitan risk governance in East Asia and their associated challenges.

Transboundary Risk Governance in East Asia

Over the last 20 years, because of their state of authoritative expert politics, the risk governance structures in the East Asian countries of Japan, South Korea, and Taiwan are facing serious challenges when confronted with transborder and large-scale transboundary risks involving transnational politics and economics. On the one hand, when transboundary risks have spread rapidly through the network of international trade, exchanges, and people, because of the scientific uncertainties arising from the transboundary risks of emerging technologies, engineered foods, and the spread of infectious diseases, and their impact on health and the environment, as well as on social ethics and values, these have resulted in public panic.

These three case studies, which were focused on technological risk, and specifically on GMOs, BSE, and nuclear disasters, reflected the national-global and global-global relational patterns associated with cosmopolitanization. Yet, about their political governance or civil society, the question remains as to whether they have developed enough can to implement cosmopolitan risk governance, or whether there is evidence of the East Asian region making cosmopolitan risk collectivities, which could in turn construct

an image of a cosmopolitan risk community. Moreover, to more deeply explore these questions, we analyze the case studies along with nine broad categories.

Analytical Framework

The important transboundary risk indicators in the developmental East Asia states focused on GMOs, BSE, and nuclear disasters because of their associations with transformation capacities, risk communication, and risk governance. The objective here was to analyze the institutional state capacities for transboundary risk in East Asia and to identify the common institutional arrangements that could enable coordinated and cooperative approaches to change. Empirically, this paper sought to identify the government-policymaking model relationship at the core of the state's risk governance and to elaborate on the main forms of that relationship and their changing importance over time. The general argument proposed is that government-policy cooperation is integral to cosmopolitanism and transboundary risk in developmental state capacity transformations. Therefore, the analysis examined several areas of transboundary risk: (1) policymaking, (2) developmental ideology, (3) regulatory science, (4) risk communication, (5) social panic, (6) SRK, and (7) trust in the government. These seven elements formed the initial analytical framework for the qualitative thematic analysis. The first step in the qualitative analysis was to examine the transboundary risk cases, BSE and GMO, as well as nuclear disasters, from which two additional analysis indicators associated with cosmopolitan practice and East Asian transboundary risk, namely, (8) cosmopolitan risk communities and (9) cosmopolitan risk governance, were identified to determine their structure and the direction of the relation (Chou 2013). These nine analysis indicators were considered for certain governments in East Asia to investigate cosmopolitanism practices and perspectives and verify the hypothesized transboundary risk potentially embedded in the East Asia region.

A comparative approach was taken to explore the evolution of governance for large-scale, transboundary risk development and to assess the states' capacities for transformation. Three East Asian developmental state cases—Korea, Taiwan, and Japan—were chosen to examine their risk governance and capacity to transform policymaking and institutions to prepare for the future (Renn 2013). The states chosen are summarized in Table 1 and the

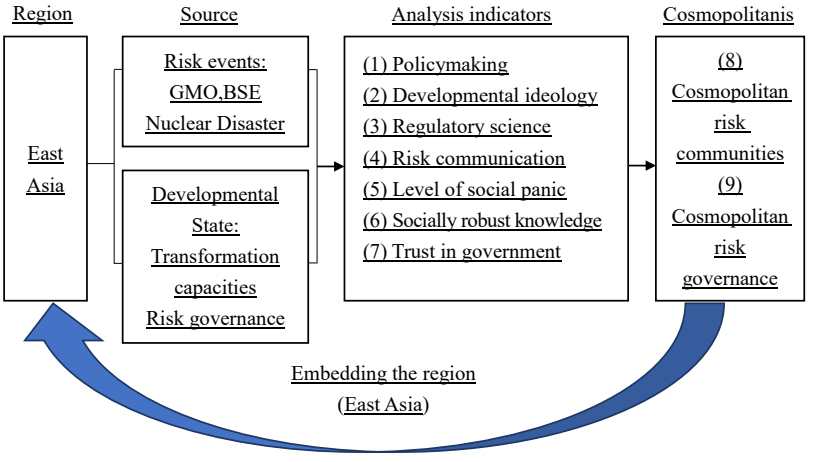

Fig. 1.—Analytical Framework for Transboundary Risk in East Asia.

Source: Author.

research steps are outlined in Figure 1. It is argued that cosmopolitanism (or transboundary risk), in particular, provides better resources for making sense of our contemporary world in East Asia.

Methods

As cosmopolitanism is largely dependent on early normative theoretical studies and has been criticized for its European focus (Pichler 2008; Bhambra 2010, p. 42; Calhoun 2010; and Connell 2010), this paper conducted a comparative developmental transboundary risk analysis in three different national contexts—Korea, Taiwan, and Japan—through an examination of their policymaking, industry growth, and industry-led developments. As part of ongoing research into the transboundary risks in these three countries (Chou 2017), a longitudinal research design was followed that involved a coordinated mixed-methods approach for which official information, journals, national government actors, civil organizations, and think tanks were consulted.

Collective decade-long risk governance research provided a rich contact network, which allowed for the selection of key informants as well as nonparticipant observations at industry and policy events (Hanani-Justo and Dayan 2015). The analysis indicators were extracted from key developments,

policymaking, and related scientific models, and the research also involved analyses of policy documents, key speeches, statements, journals by international organizations like the EU, official information including FTAs, chief media outlets like NHK, industry publications, and associated websites.

The transboundary risk and narrative analyses began with the extraction of key quotations and statements from source documents, such as journal papers, policy documents, and media reports. The narrative identification was informed by ongoing research on developmental state analysis frameworks and other studies. Key quotations and statements that expressed the emerging narratives were carefully selected for the cases in each of the three countries. The extracted passages were closely examined, from which a set of risk governance practices, arguments, events, and contextual factors were distilled, which was then used to confirm and elaborate on the principal and counter-narratives (Table 1).

Table 1
Analysis Indicators

Indicators	Description	Reference
Policymaking model	How to make the policy and what to be it.	Jasanoff (1990); Hannigan (1995)
Development of ideology	Pursuing economic development is a priority.	Kim and Thurborn (2015)
Regulatory science	Scientific regulatory mechanisms.	Chou (2003, 2007)
Risk communication	How to communicate risk information from top to bottom and ensure communication.	WHO (2001) Renn (2013)
social panic	The extent to which society's perception of risk communication has low.	-
Socially robust knowledge	Collaboration of NGOs and participation in the process of scientific knowledge.	Fischer (1990); Nowotny et al. (2001); Jasanoff (2003, 2004); Chou (2011, 2013); Hundt (2015)
Trust in government	Society's perception of trust in the government.	Govindasamy et al. (2004); Chou (2011)

Cosmopolitan communities	Countries break down borders and share information and learn from other countries about risky events.	Beck (2011, 2012, 2014)
Cosmopolitan governance	Countries break down borders and engage in open and transparent cooperation mechanisms with other countries on risk events.	

Source: Author.

When the above elements result in mutual distrust between civil society and state as well as societal confrontation, it leads to "hung risk governance" (Chou 2013, 2017). For example, Taiwan's social dissatisfaction with the strong technocratic, state-led policies associated with the Kuokuang petrochemical development led to the establishment of various NGOs representing groups, such as citizen scientists, teachers, artists, and outsiders, and became an initiative alliance.

In other words, as the technocrats in Taiwan failed to appreciate the globalization risks in their policy and decision-making, the general public developed strong civic knowledge and reflective social justice capacities to demand technological and social democracy. By extension, impasse risk governance resulted from the characteristics inherent in Taiwan's developmental states, the framework for which was also common to Japan and Korea, which is discussed in the subsequent section.

Results

From Institutional to Societal Ignorance

When GMOs were introduced into Europe in 1998, the public was strongly against them, resulting in the European Union's strict limitations on GMO imports to not more than 10% of total food imports, as well as the stipulation that food products containing more than 1% of GMO content must be labeled according to Regulation 49/2000/EC. On the contrary, even though there were varying levels of protests in East Asia, genetically modified soybeans and corn from the United States were practically being imported

unopposed, which reflects the risk governance and regulatory science approach of the above-mentioned countries in East Asia.

Policymaking and regulatory science not only involve risk governance but are also associated with the procedures of risk communication, as well as have an impact on molding regulatory culture. Jasanoff (1990) highlights that the operation of regulatory science will impact the risk evaluation and judgment of the government, industry, and the public, and determine the degree of democratic operation of technology assessment. The resultant regulatory culture will influence the public's trust in the government. Of course, not only is the risk assessment of emerging technologies the purview of government, but the responses of the public and civil society are also important elements that should be taken into consideration. The import of GMOs is the first contemporary issue to demonstrate the transboundary risk governance of Japan, South Korea, and Taiwan (see Table 2).

Policymaking model and regulatory science: Since 1999, Taiwan has adopted a laissez-faire governance approach to the import of GMOs, while Japan and South Korea have adopted stricter regulatory measures on GMO foods due to scientific, health, and environmental controversies. When Taiwan's Department of Health began drafting relevant regulations, most of the people invited to give feedback on the assessment and management measures of GMOs were academic and industrial representatives with tightly connected commercial research and development (R&D) interests—which is a serious breach of democratic principles. What is more, in its bid to join the World Trade Organization (WTO), Taiwan's government declared in 2000 that it would impose strict controls on GMOs and establish a GMO labeling system, but in the end, the implementation of the mandatory GMO labeling was delayed to January 1, 2004, and a 5% GMO labeling threshold was adopted.

Under strong pressure from the US, South Korea similarly began importing GMOs in 1998. Before that, in 1991, the South Korean government invested USD 98.3 million in biotechnology R&D, and by 1994, had invested USD 247 million, which represented an annual growth rate of 36%, while the proportion of R&D investment in biotechnology of the total R&D expenditure increased from 1.7% to 3.3% (Hsu 2005). By 1999, the R&D funding in biotechnology had accounted for 3% of the total technology R&D budget. Against this backdrop, the South Korean government was therefore cautious about importing GMOs. Nevertheless, the National Assembly of Korea formulated the Biotechnology Support Act to support the development and industrial production of biotechnology products in 1999.

However, in response to demands from social movements, the Korean Food and Drug Administration also developed guidelines for the safety testing of genetically modified food in 1999 (Kim et al. 1999). To resolve consumers' concerns regarding the safety of GMOs, the South Korean government decided to implement mandatory labeling in 2000, with a 5% GMO labeling threshold.

Although Japan started importing GMOs from the US in 1996, studies concerning GMOs had been initiated in Japan since 1986. Since then, Yamaguchi and Suda (2010, pp. 390-391) pointed out that Japan's Council for Science and Technology began to heavily invest in its technology budget, and held the optimistic belief that GMOs would become a product with international technological competitiveness in the future. In this respect, the Japanese government and relevant food industries began to aggressively emphasize the importance of the development of biotechnology and used scientific vocabulary to establish a dominant interpretative framework for evaluating biotechnology. Even so, when Japan's Ministry of Health and Welfare approved the import of genetically modified crops from the US and the EU in the mid-1990s, it immediately caused public concerns and protests. Similar to the situation in Taiwan, non-governmental organizations (NGOs) in Japan questioned whether the government had concealed information regarding GMOs. Under such circumstances, the Japanese government implemented food-labeling policies in January 2000 to stipulate the mandatory labeling of products containing more than 5% of GMO content, with certain products requiring even more stringent labeling if they contain more than 1% of GMO content.

Risk communication and social panic: In terms of risk assessment, the technological bureaucracy in Taiwan repeatedly propounded the principle of substantial equivalence advocated by the US, which emphasized that technological policymaking should be made according to empirically sound science, and publicly declared that there were no health and safety concerns regarding the use of GMOs and that there is no need for consumers to panic over GMOs. Under this model of governance based on scientism, officials at Taiwan's Department of Health held the view that education should be used to enlighten the public toward having a better understanding of GMOs to reduce social anxiety.[3] In addition, in the area of risk communication, the

[3] The Food and Drug Administration Director Shu-gong Chen had publicly appealed to the public with the claim that there are no safety issues with regard to GMOs, and that GMOs are beneficial and can contribute to the green agriculture revolution. See relevant news report in: Wu, H. F. (2000) DOH: GMOs Are Edible, and Labeling Will Be Implemented Next Year, China Times

Department of Health in Taiwan kept stalling on relevant risk control information and even hidden it, and it was not until the Environmental Quality Protection Foundation announced the results of its local GMO survey in August and October of 2000, when a large amount of media coverage prompted such urgent questions from legislators and public pressure for greater openness, that the Department of Health finally established the GMO Food Information Website on November 8, 2000 (Chou 2002).

South Korea began importing GMOs in August 1998, which cause strong protests from social movement organizations. In October of the same year, seven NGOs, including environmental, consumer, women's, and religious groups, decided to jointly form the Korean Association for Biosafety and Bioethics (KABB) to demand the government enact GMO labeling legislation to protect consumers. By 1999, a total of 17 NGOs has joined the KABB (Park and Bak 2003). Due to the strong resistance and mobilization by these social movement organizations, the South Korean government had to therefore publicly respond to the demands, and adopt dialogue based on risk communication. In November 1998, the semi-official organization the Korean National Commission for UNESCO also appointed the Soongsil University to convene a civic conference to discuss the health, ecological, and ethical issues of GMOs (KNCU 1998).

Japan's imports of GMOs in August 1996 also resulted in controversies and led to six consumer organizations mobilizing for a petition to demand the Japanese government enact mandatory GMO labeling, with the emphasis that consumers should have the right to choose non-GMO products. In 1997, the consumers' federation in Japan began to further promote the risks of GMOs, which compelled many companies to stop using genetically modified materials. For example, in March 2000, the well-known Kirin Brewery in Japan decided that it would be used only non-genetically modified maize for its beverages. Many notable chemical companies also terminated GMO-related projects (Yamaguchi and Suda 2010).

Social robust knowledge and trust in government: In Taiwan, as rapid industrialization was accompanied by authoritarian political repression, civil society became relatively weak by the late 1990s, and could not, therefore, supervise the government around emerging technologies. On the other hand, there was a lack of information on the local risks regarding emerging GMO

Express, 2000. 10. 17.; Du, H. Y. 2000. "Strict Controls and Mandatory Labelling will be Implemented for GMOs." Commercial Times, October 24.

technologies, which, coupled with the intentional concealment of risk information by the government, resulted in risk knowledge gaps among members of the public. The "knowledge gap," "information gap," and "action gap" therefore further entrenched the systematic delayed and hidden risk culture in the whole of society (Chou 2002). Under such a risk structure, the results of telephone interviews conducted by the Academia Sinica in Taipei in 2003 and 2004 found that half the respondents had never heard of GMOs, and among the respondents who know of GMOs, 73.2% (2003) and 63.3% (2004) of them also did not believe the government's claim that GMOs are safe (Center for Survey Research 2004 and 2005).

Compared to the delayed and hidden GMO risks in Taiwan, South Korean society developed different public risk perceptions and trust in the government and scientific experts. Nayga et al. (2006) compared the differences in public perceptions of GMO risks between the US and South Korea in 2003 and found that as many as 85% of the respondents in South Korea were aware of GMO food and crops, which is higher than that in the US. Also, more than 65% of the respondents were opposed to GMO crops, and 78% were against GMO foods. The Korean Biosafety Clearing House also commissioned Gallup Korea to conduct a nationwide survey in 2003 and found that 52% of the respondents had discovered GMOs being sold in supermarkets, and 96% believed that GMOs should be labeled. Moreover, only 24% were trusting of biotechnology companies, and only 29% believed that the government would tell the truth to enable experts to make decisions beneficial to society, as well as provide valid information on the source of GMO food. However, 72% and 83% of the respondents believed that scientists and environmentalists respectively can be trusted to tell the truth for experts to make decisions beneficial to society (Govindasamy et al. 2004).

In Japan, consumer organizations entered new tensions with the industry in 2002, with the former demand for public welfare and safety, and the latter placing emphasis on scientific control and professionalism. Consumer organizations have used citizen litigation strategies to demand open field trials of GM rice be banned while taking the case to the form District Court, Tokyo High Court, and the Supreme Court. Although the Supreme Court rejected the appeal of the consumer organizations on the basis that there had been no substantial ecological impacts, their actions cause by enormous interest in the media, and further led to a conflict of opinion between consumer groups and scientists, with the latter attempting to use the typical discourse of scientific professionalism to persuade consumers. However, they were unable to develop a relationship based on

mutual trust (Yamaguchi and Suda 2010). According to an analysis report by the US Library of Congress, many social forums showed that the public was skeptical about the safety of GMOs, and many blog sites and websites also posted negative information on GMOs, while newspapers on occasion would publish negative news about GMOs. Generally speaking, the public suspects that the government could be concealing information about GMOs.

Table 2
Hidden Cosmopolitan Risk Governance in the Case of GMOs

	Taiwan	South Korea	Japan
Risk events	• GMOs 1999- • Taiwan Biobank scandal 2005	• GMOs 1998– • Faked stem cell research 2005	• GMOs 1996-
Policymaking model	Authoritative expert politics	Authoritative expert politics	Authoritative expert politics
Development of ideology	Economic prioritization	Economic prioritization	Economic prioritization
Regulatory science	Narrow positivistic assessment	Narrow positivistic assessment	Narrow positivistic assessment
Risk communication	Delayed and concealed risk Labeling policy postponed until 2004	GMO consensus conference held by government Establishment of labeling policy in 2000	Establishment of the lathe being policy in 2000 after a public petition
Social panic	From social panic to conscious scrutiny	Strong social resistance	Strong social resistance
Socially robust knowledge	Weak (GMO) Strong (Taiwan Biobank)	Strong (GMO) Weak (Faked stem cell research 2005)	Strong (GMO)
Trust in government	Low trust	Low trust	Low trust
Cosmopolitan risk communities	Latent	Latent	Latent
Cosmopolitan risk governance	Hidden	Hidden	Hidden

Source: Author.

Degree of cosmopolitanization: In the analysis above disputes over importing GMO products occurred in all three of these countries at about the same time in the late 1990s, and in the process saw the emergence of compulsory cosmopolitanism. While there were similarities in their risk policymaking model based on narrow scientific positivism and their prioritized economic development above all else, multinational cooperation governance did not develop between the governments to resist the US in its GMO product imports. The EU is perhaps the only place where transnational cooperation can be seen in action, where different countries cooperated at different periods to implement a mandatory labeling policy. In contrast, these East Asian countries exhibited weak transnational norms.

In terms of civil society, while there were varying degrees of protests against GMO products in all three countries, there has been no obvert transnational protest movement or strategy. The only similarity shared by these three countries is the fact that in response to their authoritarian risk policymaking model, their civil societies must exhaust huge amounts of energy just to fight against the scientism of their technocrats; however, their fights were fought in different contexts and were isolated and individual.

Moreover, within this authoritarian expert politics and even as disputes over GMOs broke out at the same time in all three countries, cosmopolitan governance remained hidden, and neither did any strong cosmopolitan risk collectivities formed, while only weak and latent risk communities and social connections existed. Taking Taiwan as an example, the Environmental Quality Protection Foundation referenced Consumer International to execute two short-term campaigns in 1998, while the Taiwan Homemakers Union Consumer Cooperative translated the GMO campaign messages from their sister movements in Japan and South Korea in 2000, as well as invited them for exchanges in Taiwan, these however remained limited to internal information exchanges and did not develop to become larger consumer movements (Chou 2002). As such, while this tripartite civil society shows that it has been able to execute knowledge and information exchanges, it has yet to develop into strong, regional risk collectivities and identities, which would have enabled it to generate transnational social mobilization. Considering, latent cosmopolitan risk communities could be said to at least exist in this region.

Risk Politics without Democracy: GMO, BSE, and Nuclear Disaster

As the risk politics relating to the import of US beef to South Korea and Taiwan share a similar structure to the risk politics of the Fukushima nuclear disaster in Japan, these are the focuses of this study (see Table 3).

Policymaking model and regulatory science: The high level of controversies and resistance resulting from Taiwan being forced to import US beef can be divided into three phases: when the ban on the import of US beef was lifted in 2005 (first phase); when restrictions were eased in 2009 for the import of bone-in beef which has a higher risk of BSE (second phase); and the relaxation of the ban to allow the import of beef with ractopamine in 2012 (third phase). The risk policymaking of Taiwan's government in these three phases followed the model of authoritative expert politics and emphasized the regulatory science of empirical risk assessment as the baseline of policy development while rejecting scientific challenges from non-governmental experts. For example, when a domestic case of BSE was discovered in the US for the first time at the end of 2003, the Taiwanese, Japanese, and South Korean governments concurrently decided to ban the import of US beef. In March 2004, Taiwan's Department of Health then formed an expert advisory committee to review the case and reached a preliminary agreement at the end of October for the conditional import of US. beef, but reports of the second suspected case of BSE in the US in November 2004 then delayed the lifting of the ban. However, on April 16, 2015, Taiwan restored the import of US beef, following which the second BSE case in the US was confirmed on June 24, resulting in Taiwan's government re-enforcing the ban on imports, before lifting the ban again on January 26, 2016. During this period, the Taiwanese government repeatedly emphasized that the numerous reviews and risk assessments performed by the expert advisory committee had found the risk of being infected with new CJD from eating US beef at less than 1/1,000,000 (Chou 2008). Facing strong criticism from the opposition parties and consumer groups, Taiwan's Department of Health kept insisting that the decision regarding the import of US beef was made by rigorous and empirical scientific assessment (Chen and Ju 2005).

South Korea's policymaking and regulatory science model is similar to that of Taiwan: On the one hand, scientism has been adopted as the basis for policymaking by these countries' technocrats, while on the other hand, science is being used by the US as a strategy of trade negotiations, thereby forcing importing countries to have to adopt corresponding strategies.

Undoubtedly, international trade competition is the most important reason why East Asian countries are being forced to expose their citizens to high-risk foods, in exchange for free trade agreements. On April 17, 2008, when South Korea negotiated with the US and agreed to looser conditions for the import of US beef in exchange for signing the US-Korea Free Trade Agreement (KORUS FTA), the Lee Myung-Bak administration agreed to loosen the age limit for the import of cattle more than 30 months old, exposing their citizens to a higher risk of BSE. However, these import conditions were significantly more relaxed than those of Taiwan and Japan, and the spread of this news by the media resulted in South Korea's most serious social protest in 20 years. To avoid trade disputes, the South Korean and US governments both agreed that import controls should be established upon sound scientific evidence and stimulate the creation of a product labeling system (Kim 2009). This condition is based on the economically driven risk assessment model that the US has been using to force importing countries into abiding by its rules, otherwise which if they refuse to import US beef, could be required by the US under the WTO's sanitary and phytosanitary principle to provide clear evidence of risks and damages (Kang 2013).

Risk communication and social panic: In 2005, the Taiwanese government performed risk assessment and policymaking via a closed-door expert advisory committee, in response to the phase one controversy over the import of US beef, and the same process was replicated in response to phase two and three controversies over the import of US beef, where the government similarly adopted the "deficit model" of risk communication, such that when faced with doubts and criticism from consumer organizations, officials tended to push back with the claim that US beef "is totally safe and need not be removed from the market" (Lee 2005 and Liu 2005), and would instead accuse the public of irrational panic, and that they should receive more education and participate in more scientific and professional discussions. In June 2005, during a debate between the government and the Consumers' Foundation, the director of the Department of Food Safety insisted that the ban on US beef must be based on professional assessment, and that, "without sound scientific evidence, there can be no consensus" (Chen and Ju 2005). In 2009, during the controversy of bone-in beef imports which bring with its higher risks of BSE infection, the scientific risk assessment of the government was instead mocked by consumer organizations, which pointed out that this scientific assessment at that time was completely contradictory to the resolution to ban imported bone-in beef in 2005.

Although the Ma Ying-Jeou administration declared, during the controversy over ractopamine beef in 2012, that they would not sacrifice the health of the public for trade, an expert advisory committee almost immediately determined the safety tolerance standards similar to that of CODEX. Based on the latest surveys, the Taiwanese public's trust in officially appointed experts has significantly reduced (Chou and Wang 2014).

Similarly, in response to strong public backlash in South Korea, officials repeatedly emphasized the safety of US beef as being based on sound scientific assessment, but such risk communication miscalculated the crux of the public's concern, which deepened their distrust in the government (Kim 2009, p. 141). With the protests in society becoming increasingly fierce, and the anger spreading like wildfire via the use of emerging online media, the wave of protests pervaded all walks of life, especially with the participation of a significant number of senior high school students in the protests. The protests accumulated until late April and early May, and culminated in hundreds of thousands of people gathering in Seoul to launch what was then a globally well-known candlelight demonstration, to protest US beef imports as well as criticize the Lee Myung-Bak administration's neoliberalism, and to demand the renegotiation of the FTA (Gottweis and Kim 2009, p. 233). Nevertheless, the government ignored the protests and announced on May 29 that US beef would be imported, which cause even more protests. Finally, on June 10, more than a million people participated in another candlelight protest, which forced the South Korean government to make a concession and send representatives to the US on June 20 requesting the restoration of the ban on cattle more than 30 months old. However, the delay in responding to the needs of the public has resulted in serious social panic and distrust in society (Kim 2009, p. 146).

SRK and trust in government: Unlike the delayed awakening and action on GMO issues, Taiwanese citizens started developing robust risk knowledge around 2005 on important social issues, including knowledge of US beef. In April 2005, when the Taiwanese government first lifted the ban on the import of US beef after nearly 18 months, the risk assessment on which the decision was made was strongly criticized by the Consumers' Foundation, which pointed out that there were no departments, standards, or methods for the testing of BSE in Taiwan (Huang 2005). They also questioned how the calculation method of risk assessment used by the Department of Health would lead to deviations, especially when using the dioxin epidemiology model as the basis (Zhong 2005). In addition, the NGOs were not only passively responding to official risk assessments but were also proactively

raising issues, such as the screening proportion, disputes over risk assessment calculations, the high risks of cattle more than 30 months old, risk monitoring methods, and risk probabilities, to challenge the government's policymaking (Chou 2009). According to a nationwide telephone interview survey conducted in April 2005, 64.9% of the respondents distrusted the safety risk assessment of US beef conducted by the government, while only 30.6% trusted the assessment; and 53.7% disagreed with the government's decision to lift the ban on imported beef, with only 38.2% who agreed (Chou 2009).

Chung and Yun (2013) compared the news reporting of BSE and H1N1 in South Korea to study the social amplification of risk and found that because the BSE issue is intertwined at the level of the economy, as well as at the level national and international politics, it can be easily politicized, and therefore to bring about a higher frequency of media coverage. The findings of this analysis are very similar to that in Taiwan, where emerging social media and its pervasive use also assist to speed up the diffusion of risk knowledge. Just like the South Korean government, Taiwan's government constantly uses scientific and professional justifications to create the discourse basis of its policymaking regarding imports (Kang 2013, p. 597), and similar to the neighboring countries, Taiwanese NGOs have also learned to quickly use the Internet to mobilize people and analyze data, to construct a risk knowledge different from that of the government. Gottweis and Kim (2009) believed this represented a successful exercise of how Web 2.0 can be used to fight outside microbial attacks and to shape a different kind of biopolitics. The importance of emerging media in shaping SRK cannot be ignored. On the contrary, the government's delay in responding to the protests and demands of the public deepened the disagreements between the two sides and resulted in the gradual erosion of the public's trust.

Political Resonance: The 2011 Fukushima Nuclear Disaster

The 2011 Fukushima nuclear disaster is used as another case study in this article because not only did the EU president characterize the event as an "apocalypse," but also provides a good comparison case of comprehensive cosmopolitan governance. importantly because the disaster took place in Japan, and can also be used to highlight the characteristics of risk governance among East Asian countries. In particular, when the transboundary risk regulation of Japan is compared with that of Taiwan and South Korea, highly similar attributes can be identified to aid in exploring their relevant structural

path dependencies.

Policymaking model and regulatory science: Research has pointed out that the Fukushima disaster is a man-made calamity, and that the entire energy policymaking in Japan is controlled by a nuclear village (Funabashi 2012; Sugiman 2014; Aldrich 2013, and Kingston 2013) or tripartite complex (Matsumoto 2013) comprising three parties: the government, the nuclear power industry, and academia. This complex network of modern nuclear power policymaking includes politicians, scientists, engineers, and public relations experts, who strongly believe in new technologies and therefore created a safety myth under the trend of a global nuclear renaissance, to shape the social risk discourse (Aldrich 2013, p. 250). Sugiman (2014, p. 263) pointed out that in addition to it being possible for government officials to be transferred to work at Tokyo Electric Power Company (known as TEPCO), after retirement, many Japanese researchers were also able to obtain abundant research funding from TEPCO, and serve as members of Japan's national and regional energy committees, thereby developing a rather special government-patronized scholars' relationship.

These phenomena show that Japan's energy policy is typically controlled by the technocracy, which is similar to the aforementioned expert politics of corporatism and policymaking structure in Taiwan and South Korea. Therefore, once the government is questioned by the public, it tends to use scientific rationality and professionalism as the basis to justify its energy governance and policymaking.

Risk communication and social panic: Similar to Taiwan and South Korea, the dominance of the nuclear complex in Japan not only ensures enormous economic benefits for TEPCO but also allows it to further manipulate information and political power (Funabashi 2012, p. 68). Of course, the overall consideration also considers that all in all, energy stability can ensure the development of the national economy (Sugiman 2014), but such an approach prioritizes economic development over safety. In other words, such a policymaking network is not only deficient in risk communication with the public, when seen from the perspective of science, professionalism, and economic development but is also seen as an attempt to manipulate and conceal information. Kingston (2013) and Figueroa (2013) found that even after the Fukushima nuclear disaster, such a nuclear village continues to ignore risks, and even denies the existence of risks, while democratic risk communication remains deficient. Shrader-Frechette (2012, p. 133) pointed out that not only did the government and industry continue to still hide the radiation risks after the nuclear disaster, but also did not

provide victims with the opportunity to participate in the policymaking regarding radiation clearance. Matsumoto (2013) also explored how the Fukushima disaster is a structural disaster waiting to happen in Japan's society because of the long-term concealment of information. From his perspective, the serious causalities resulting from the concealment of the risks of a naval turbine in Japan before WWII is reflective of the culture of information concealment at the highest levels of government, which ultimately led to the irreparable Fukushima nuclear disaster. Therefore, a scientism-based dogmatic policymaking network, an ideology that prioritizes economic development and the culture of risk concealment, all reflect the severity of the problems being faced by the structural path dependence of risk control in Japan, South Korea, and Taiwan.

SRK and trust in government: After the Fukushima disaster, a protest movement to end nuclear power was the cause in Japan, as it did around the world. In Seoul, anti-nuclear activists successfully close one nuclear power plant, and in Taiwan, the anti-nuclear movement was revived, which successfully led to the operation of the fourth nuclear power plant being terminated in 2014. In Japan, the NGOs coordinated with one another to develop anti-nuclear risk knowledge and even used environmental litigations to attempt to block the restarting of nuclear power across Japan. From December 2005 to October 2011, surveys conducted by the Japanese government, Japan's public broadcasting agency the NHK, as well as other newspapers and departments found that the public no longer trusted the government, nor did they trust the information provided by the government. After the occurrence of the nuclear disaster, public attitudes changed rapidly: the proportion of the public who supported nuclear power gradually declined from 70% in December 2005, while the proportion against nuclear power even crossed 50%, with a survey performed in late October 2011 showing the proportion of anti-nuclear supporters reaching 66% (Aldrich 2013, p. 256).

Table 3
Hidden Cosmopolitan Risk Governance in Case of BSE Disputes and the Fukushima Disaster

	Taiwan	South Korea	Japan
Risk events	• US BSE beef 2005 • US BSE beef 2005 • US ractopamine beef 2012	• US BSE beef 2008	• Fukushima nuclear disaster

Policymaking model	Authoritative expert politics Government-patronized scholars	Authoritative expert politics	Authoritative expert politics Nuclear village Government–industry–academic complex Government-patronized scholars
Regulatory science	Narrow positivistic assessment	Narrow positivistic assessment	Narrow positivistic assessment
Development of ideology	Economic prioritization	Economic prioritization	Economic prioritization
Risk communication	Deficit model	Deficit model	Deficit model Delayed and concealed risk information
Social panic	High social panic	High social panic	High social panic
Socially robust knowledge	Strong	Strong	Strong
Trust in government	Distrust	Distrust	Distrust
Cosmopolitan risk communities	Latent	Latent	Latent
Cosmopolitan risk governance	Hidden	Hidden	Hidden

Source: Author.

Degree of cosmopolitanization: Similar to the GMO disputes, the aforementioned analysis saw US beef controversies occurring almost simultaneously in all three countries around 2005 and produced compulsory cosmopolitanism. The aforementioned analysis shows that the risk policymaking in Taiwan and South Korea are very similar, and as in the case of the GMO disputes, their response was based on a narrow form of scientific positivism and motivated by the prioritization of continued economic development. Despite their shared response to the incidents, their respective governments did not enter transnational cooperation to fight back against US beef imports. Quite the opposite occurred, with each country accepting the US's proposal; South Korea initially agreed to accept imports of cattle older than 30 months as part of their FTA negotiations; Taiwan agreed to import

cattle younger than 30 months; while Japan agreed to accept cattle younger than 12 months (Chou 2008; Kim 2009). Such a phenomenon reveals the fragile and hidden cosmopolitan risk governance in the region.

The fact that Japan was able to negotiate a more favorable deal for their citizens than South Korea or Taiwan resulted in the emergence of a strong consumer movement, which, in turn, expanded into a political movement. In Taiwan, food security concerns and social movements linked up with opposition forces, which consolidated to become a major consumer movement that sparked fierce political resistance. In South Korea, as the BSE negotiations were held in the context of the FTA negotiations, this resulted in looser regulations than in Japan or Taiwan; leading to millions of people taking part in the candlelight movement. With regards to civil society, even though the protests in South Korea and Taiwan differed somewhat, there was nonetheless no transnational coordination or strategy to their protests. Instead, civil society in each of these respective societies must spend a large part of their energy fighting against the positivist arguments posed by technocrats but, as a result, have led to them remaining isolated and silo fighting, as they encounter authoritarian expert politics domestically.

The authoritarian expert politics has changed the focus of the social protests. Even though BSE disputes occurred in the three countries at around the same time, the development of strong cosmopolitan risk collectivities did not occur. Although the fact that both South Korea and Taiwan have strong risk communities and social connections domestically, they did not try to develop mutual transnational social mobilization plans or common regional risk identities with Japan. Fundamentally, while cosmopolitan issues are being faced in all three countries, in reality, they continue to remain latent and disconnected.

Japan's nuclear disaster is essentially a science and technology disaster but has become an issue of cosmopolitan risk governance in Asia, the fundamental reason being that the powerful nuclear regime has dominated the country's energy policy, discourse, and development, and the hidden and delayed risks created in such a huge interest complex has led ultimately to catastrophic consequences. Japan's system of nuclear bureaucracy, or what is referred to as the "nuclear village" comprising the government- -industry-academia trio, is almost identical to the establishment in both South Korea and Taiwan. Whether it is the "nuclear mafia" as known in South Korea (Ku 2018) or the "nuclear complex" as known in Taiwan (Chou 2018), they represent the strong, systematic authoritarian form of expert politics.

The Fukushima nuclear disaster caused a rapid response globally as

countries worldwide moved to adjust their nuclear policy. In Asia, strong feelings of risk communities emerged in both Taiwan and South Korea. South Korea successfully mobilized and campaigned for the "One Less Nuclear Power Plant" energy policy in Seoul, while Taiwan revived the anti-nuclear movement to successfully suspend operations at Taiwan's fourth nuclear plant. In Japan, civil society used environmental litigation to prevent Japan's nuclear plants from being reopened. While these actions help create a community feeling of cosmopolitan risk in the short term and promote exchanges in strategy, knowledge, and information, and study visits between the three countries, none of these have led to the formation of clear risk collectivities or transformed into a common regional anti-nuclear movement.

To explain the existence of various latent cosmopolitan risk communities, other than the different energy politics in the three countries creating gaps in the ability for collective mobilization and the establishment of mutual connections, another explanation is the intricate and complicated nature of their respective nuclear complexes and the very enormity of their systems, which means that civil society could only be mobilized within the limitations of their national political contexts and would require a large amount of energy to fight against the authoritarian nature of their expert politics. It is these structural phenomena and conditions that have resulted in the difficulties in developing robust cosmopolitan risk governance in East Asia, which is something worth spending time reflecting upon.

Discussion and Conclusions: Long-term Implications for the Developmental State

This article was centered on transboundary risk and cosmopolitanism, in particular, Beck's, Renn's, and developmental state theorists' transboundary risk analyses and also Beck's rhetorical cosmopolitan investigations. It needs to be emphasized, however, that "hung risk governance" exists across the East Asian region as there are similar developmental risk governance states and only slight differences in robust social knowledge.

Compared with more simple risks, GMO, BSE, and nuclear disasters, which are characterized by complexity, uncertainty, and transboundary risk, are representative of cross-border risks. Each East Asian developmental state has low trust and latent, hidden risk governance because of the following: (1) there is insufficient national knowledge on transboundary risk and (2) the states' risk management models are hidden, which means that when risks,

such as GMO, BSE, and nuclear disasters emerge, the latent risks in their hidden developmental framework do not allow for effective transboundary risk management. Therefore, the importance of transboundary risk management must be elevated to ensure that the East Asian states take concrete transparent actions, which is also the basic intention of cosmopolitanism. This, of course, takes us back to the premises of cosmopolitanism and to where "hung risk governance" starts.

There are differences between methodological cosmopolitanism/developmental states and cosmopolitan Eurocentric biases/cosmopolitan societal Asian views, which result in societal tensions with the government. Therefore, the methodology is needed to encompass both "embedding the national" and "embedding the regional" to properly assess the cosmopolitan risk governance's structural issues and characteristics and elucidate a method to reduce/eliminate stagnation in the region.

As "hung risk governance" has become a unique East Asian characteristic, it is necessary to adopt reflexive democracy to address the issues associated with regulatory science and risk communications and to build SRK. Not all risks are transboundary risks, but if they are, in addition to risks within its borders, the state should also consider the regional impacts of transboundary risks.

This paper has sought to discuss cosmopolitan risk governance and the structural problems and characteristics in these three East Asian countries, in light of the transnational risk incidents affecting the region, including GMO, BSE, and the Fukushima nuclear disaster. Indeed, when we analyze East Asia from the perspective of methodological cosmopolitanism, we should not only stay at the level of "embedding the national" but need to alleviate the focus to be at the level of "embedding the regional." The common points of analysis that are important for East Asian society are as follows: first, we need to identify the common structural problems of risk governance; second, we need to reinvent the scientific epistemology within the policymaking complex; third, we need to reinvent civic epistemology and civil society to cultivate SRK; and finally, East Asian societies need to transform to reflect cosmopolitan governance. The authors consider these issues using eight categories: risk disputes, policymaking model, regulatory science, development ideology, risk communication, social panic, socially robust risk knowledge, and trust, and analyzed the confrontation between the government and society in these three countries within their rich environments and consumer movements, and found that while the risk incidents that have occurred almost simultaneously in these three countries constitute as compulsory

cosmopolitanism or have resulted in cosmopolitanization, but yet these three countries have failed to develop cosmopolitanism risk collectivities to support one another in their governance and environmental movements. Their failure to unite in the face of common threats meant that we have yet to see distinct and robust regional risk communities in East Asia, which is to say that, the transnational actors, activities, networks, and institutions that underline cosmopolitan risk governance have yet to emerge.

How can we explain this phenomenon? In other words, what are the structural characteristics in East Asia that have resulted in cosmopolitan risk governance remaining latent and hidden? From the perspective of transboundary risks, for distinct and institutional cosmopolitan governance to be formed, there needs to be continuous participation of international organizations and transnational environmental movements in international standards, activities, and social movements, to strengthen and link up their risk identities, so that strong risk communities could be formed, and collective action can be taken in response to transnational risks such as climate change. However, the question is whether such a supposition would work the same way in East Asian countries. What is clear is that until now, there is no clear evidence of any transnational movement organization, which therefore weakens cosmopolitan risk governance. Yet the perspective taken by this paper is that a transnational movement has not taken root in this region primarily because of the context of authoritarian politics, expert politics, the developmental state, and neoliberalism that have embedded themselves in the region. The strong technological government and economic development complex has therefore locked in the inability for risk resistance in these countries, thereby weakening the transnational connections between environmental and consumer movements in these countries. More specifically, cosmopolitanism and the developmental state eventually echoed the risk of gridlock governance perspective, even as the developmental state, on the one hand, had infiltrated power into the infrastructure and controlled its institutions and functions during the bureaucratic authoritarian period, resulting in a civil society that was still not autonomous enough, which in turn weakened the strength of civil society.

As such, the internal explanations of the risk issues faced in these three countries, including the "compressed modernization" (Chang 2010) in South Korea, and the "delayed, hidden, and hung risk governance" in Taiwan (Chou 2000, 2002, 2008), and even the recent critical observations made by Japanese academics of the "man-made calamities" (Funabashi 2012) and "structural disasters" Matsumoto (2013), all demonstrate deficiencies in the structural

factors in which the "rush to modernization" is embedded. These structural factors include authoritarian expert politics, positivist hegemony, and economic developmentalism. These factors share a common language in that the concealment, neglect, and delay of risks have consistently dominated the domestic risk governance agenda of these countries. In particular, authoritarian expert politics and the government–industry-academic complex has worked to shape a complex system that has suppressed environmental and consumer movements in these countries, resulting in them being exhausted from their fight—these of which have come to represent the unique structure and characteristic of risk governance in East Asia.[4]

This type of deficit model of risk governance and communication has given rise to what the European Environment Agency (EEA) referred to as "institutional ignorance" (EEA 2001), which then in turn evolves into societal ignorance; the result being a high level of distrust and confrontation between the government and civil society, and the hidden and delayed risk regulation and culture has also weakened the fragile risk governance, resulting in East Asian societies being perceived as having a weaker and more vulnerable technological culture than in Western societies,[5] thereby giving the appearance of fragile risk individualization. Furthermore, the actors in all three countries must keep putting out the fire, thereby expending a great deal of energy in handling and resolving their risk vulnerabilities. Therefore, the imagination of the risk community can result in remedy to the deficit in domestic governance and social fragility; however, if there are no contingencies by which regional transnational risk collectivities could form, then it would be difficult to see the imagination and identity of risk collectivities develop in the region. In the end, this latent and hidden cosmopolitan risk governance has crystallized to such an extent that it has

[4] In western nations, expert government, industry-government-academia relationships and positivism have often been denounced as being the enemy of technological democracy. For example, Horowitz (2012) pointed out that when the independent committee establish by the Japanese government reviewed the Fukushima disaster, they determined that the it was the result of Japan's neglect of risk culture that has resulted in "a profoundly man-made disaster"; however, aren't the Love Canal, Three Mile Island, the BP oil spill and New Orleans accidents similar "sorts of disasters"? We would require further empirical research on cosmopolitan governance to support this argument, however, what is certain is that the political history, social culture, economic development model and technological development have resulted in a complex risk governance hybrid system which is significantly different to that of its Western counterparts.

[5] The authors believe that the complex intertwining of the defective national governance structure and society in this region have resulted in a vulnerable technological culture that far surpasses that described by Bijker about Western society (2006).

become a unique characteristic of East Asia.

In the face of this dilemma, the authors advocate that East Asian societies should adopt the notion of reflexive democracy,[6] to reflect on and reverse the current governance predicament facing these societies. In terms of methodology, there is a need to expand the analysis from the level of "embedding the national" to that of "embedding the regional," which is to say that we should simultaneously examine the historical context of the political economy, regulatory science, and regulatory culture at both the local and regional level, to understand the issues of democratic governance embedded in this region; as well as investigate the model of policymaking, communication, and regulations adopted in response to global transnational risks (disasters), with an eye on analyzing the structural issues and characteristics of cosmopolitan risk governance in the region, to propose a way to break out of the stagnation in the region.

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[6] Basically, this concept comes from Beck's (2006) concept of reflexive governance, where he argued that the transformation of a transitional society requires an examination of domestic politics and the logic used social movements, to critically develop the possibility of constructive democratic governance. For empirical research on transition management towards a sustainable society and reflexive governance, please refer to Beck (2006); Grin (2005); Hendriks and Grin. (2007); Kemp and Loorbach (2006); Rip (2006); Voß and Kemp and Bauknecht, D. (2006).

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Kuei Tien Chou is professor of Graduate Institute of National Development, National Taiwan University (NTU) and director of Risk Society and Policy Research Center (RSPRC), NTU. His research interests include risk governance, sustainable development, globalization, technological democracy, risk communication and East Asia Risk Society. Recently he dedicates himself in the cosmopolitan studies of climate change governance. [*Email:* ktchou@ntu.edu.tw]

Yun Hsiang Lin is a PhD student at the Institute of National Development, National Taiwan University (NTU). His research interests are renewable energy policy, sustainable governance and socially robust knowledge of renewable energy (e.g., offshore wind). [*Email:* d10341001@ntu.edu.tw]

Jui Ning Chang is a research assistant at the Institute of National Development, National Taiwan University (NTU). His research interests are institutional logics, institutionalism and social acceptance of renewable energy. [*Email:* r07341039@ntu.edu.tw]