

Editorial

Introduction: Multidisciplinary Perspectives on Innovation in East Asia

Marcus Conlé

The Many Faces of Innovation and Innovation Research

Previous research on developments within East Asian societies has demonstrated that the “East Asian miracle,” and with it the region’s renewed ascent to being an economic, political, and cultural hub, is a lot more than just the story of labor surpluses, the diffusion of established knowledge, and imitation. Novelties that quickly come to mind range from Japanese production systems (e.g. Womack et al. 1990) and the more recently discussed Chinese manufacturing approaches (Berger 2013; Steinfeld and Beltoft 2014), to Japanese humanoid robotics, Korean online gaming, and various other pop cultural phenomena associated with “Cool Japan” and the “Korean Wave” (e.g. Storz 2008; Wagner 2009; Wi 2009). Developments and achievements like these raise expectations that the region will also originate thought-provoking and impactful responses to those societal challenges that are currently high on the agenda of decision makers around the world. Among the most pressing challenges faced are those that are identified, for instance, in the European Union’s “Horizon 2020,” which comprise, inter alia, food security, healthcare, the provision of “smart, green and integrated transport” — particularly in urban environments — and “secure, clean and efficient energy.” (Horizon 2020) In short, the manifold developments within the region are a valuable source of inspiration, knowledge, and reflection in two respects: for finding tools to address real-world problems and for pushing innovation research more generally. Tapping the full potential of the vast repertoire of regional experiences, initiatives, and solutions is, however, impossible to achieve without cross-disciplinary exchange and the provision of fora for bringing together different lines of research.

The concept of innovation calls attention to processes of change that are related to the creative development and/or employment of technology. In this regard, technology is normally understood first and foremost as comprising physical technologies. This includes all of the (generally patentable) methods and devices that are thought of in connection with product and process innovations. It also frequently encompasses “social technologies” (e.g. Nelson 2008) such as production systems, business models, and other forms of organization that Schumpeter (1912)

had already early on identified as further potential objects of innovation. Yet, to support the cross-disciplinary discussion of innovative processes, activities, and outcomes more generally, it might be advantageous to employ an even more comprehensive definition of the term — like the one that is proposed by eminent complexity theorist W. Brian Arthur. In his effort to come up with a truly useful definition, Arthur extends the concept of technology to all “means to fulfill a human purpose” (2009: 28). His broad definition therefore not only covers algorithms, for instance, which become ever more important as the digital world expands, but also modes of governance, institutions, and other means that more commonly originate from political arenas than from research and development laboratories. However different these manifestations might appear to be at first glance, they are in fact similar in that they are instruments whose development and uses are mediated by the social and cultural circumstances in which they are embedded.

Innovation research focuses on the social processes that are relevant for the emergence, evolution, failure, diffusion and translation, use and appropriation of technology (broadly defined). The subject is approached from numerous different perspectives, and that by a variety of independent interdisciplinary research fields. One of the three fields that are particularly relevant for this special issue is Innovation Studies — whose contributors predominately come from (neo-Schumpeterian) Economics, Economic Geography, Business and Management Studies, and Organizational Sociology (see Fagerberg and Verspagen 2009). Having emerged in opposition to Neoclassical Economics, the field connects business scholars seeking to explain the competitiveness of firms in terms of their internal and external organizational structures, resources, and capabilities (Kogut and Zander 1992, Teece et al. 1997) with those economists attempting to replace the prevalent static economic growth models (and the policy choices that are based on them) with evolutionary theories of economic development (Nelson and Winter 1982). In conjunction with the return of institutionalist thinking in Economics, innovation scholars have addressed the issue of competitiveness by pioneering the holistic “systems of innovation” approach that has come to be highly influential in policy circles worldwide (Lundvall 2007). Its embrace by governments at various levels, as well as by international organizations such as the Organization for Economic Cooperation and Development and the World Bank, is due to the field’s commitment to pursuing the question of “what governments have done and could do to promote the production, diffusion, and use of scientific and technical knowledge in order to realize national objectives” (Lundvall and Borrás 2005: 599) — a question that can also be similarly posed in relation to regional and supranational governments, as well as to business management (in this case, relating to the furthering of corporate objectives).

While the issue of competitiveness is a pivotal concern for Innovation Studies, the range of considered objectives is certainly not limited only to matters of economic wellbeing. In particular, the transition toward sustainability — which is implicated

in the Horizon 2020 challenges already mentioned — has become a key focal point of scholarly attention (Markard et al. 2012). What distinguishes the field from related strands of research is not its thematic focus on economic affairs, but rather its proponents' emphasis on researching the factors that can be influenced so as to affect the rate and direction of the introduction of (superior) technological solutions to given problems. Although the characteristics of technological change are addressed by such concepts as the “technological paradigm” (Dosi 1982), the most common story in fact is one of societies adapting (or failing to adapt) to the demands of evolving technology — a social selection of forms of innovative activity, so to speak — rather than one of (concrete) technology being shaped by its social and cultural environments.¹

The latter perspective is, however, the main focus of the second of the aforementioned three relevant research fields here, with it being one that combines several different strands of research under the nomenclature Science & Technology Studies. Scholars within the field typically come from the Social Sciences (Sociology in particular) and the Humanities (especially History and Cultural Anthropology), and commonly emphasize the “interpretive flexibility” of technological artefacts (see, for example, Williams and Edge 1996; MacKenzie and Wajcman 1999; Sismondo 2004; Weber 2007). As Pinch and Bijker (1984) point out in their seminal contribution, “flexibility” pertains to the content and meaning of the artefact as well as to the way that it is designed and utilized. Interpretive flexibility implies that there are choices to be made, ones that will have implications for the evolution of the artefact and for the social groups that are (or were to be) affected in various ways by the technology.

As the research concerns itself with issues of power and interests, ideas, values, and prevalent habits of thought, it is quite remote from notions of best practice — insisting instead that there “is not just one possible way, or one best way, of designing an artefact” (Pinch and Bijker 1984: 421). Relevant research differs from economic studies on innovation not only in the use of (mostly) constructivist and semiotic approaches but also in the concomitant more encompassing view on novelty. It covers novelty in the content of technology — including superficially similar artefacts — in terms of design and meaning, and the novelty that arises as different societies integrate technology into their daily lives. The various papers of the July 2016 “Technikstudien und STS” special issue of *ASIEN* (No. 140), which was compiled by Susanne Brucksch and Cosima Wagner, give a fascinating glimpse into the fertility of this line of research with regard to “technical things Japanese.”

¹ In this connection, many innovation scholars are sympathetic to the view put forward by the Comparative Capitalisms literature (see Allen 2013 for the state of the art): that institutional and organizational structures help firms succeed in the subset of markets in which particular technological trajectories and modes of learning prevail.

In addition to the two already mentioned academic fields, there is (at least) one further (yet less integrated) strand of research that has an additional perspective on innovation to contribute. This field clusters around the notions of “social innovation” and “political innovation.” While the two concepts have recently started to attract a larger following, there is still little consensus at present about how to actually define them. In the case of the more comprehensive “social innovation” in particular, there exist a multitude of definitions that partly overlap with conventional definitions of innovation (e.g. Pol and Ville 2009; Cajaiba-Santana 2014). This is not the place to disentangle the different threads of that literature. What is important at this point is merely to highlight an interesting subset of studies that are located at the intersection of the social and political innovation literatures. These lines of research have in common their focus on issues of public governance. They differ insofar as scholars using the social innovation concept tend to emphasize bottom-up processes by (civil) societal actors (e.g. Gerometta et al. 2005; Moulaert et al. 2007), whereas those invoking the concept of political innovation are more inclined to focus on top-down processes led by governments (e.g. Sorensen 2017). Both lines of research intersect most strongly in the study of urban contexts, where government and society interact most intimately. Innovation in this regard mainly refers to the introduction of collective goods and public services, as well as to the modes of governance promoting them. The distinctive nature of the respective goods and services introduces a further interesting facet to the innovation literature. Altogether, the three fields can potentially complement each other in illuminating the forms, direction, and outcomes of the innovative activities constituting East Asian development.

The papers in this special issue

This special issue brings together several young scholars whose ongoing research covers many of the aspects mentioned above. The authors share a common institutional background. They are all members of the IN-EAST School of Advanced Studies, which was established in late 2013 at the University of Duisburg-Essen with a four-year grant from the German Federal Ministry of Education and Research (BMBF).² Being tasked with exploring innovation in East Asia from multiple perspectives, the School has in its ranks a total of 18 doctoral and postdoctoral scholars with diverse disciplinary backgrounds, including in Economics, the Social Sciences, the Humanities, and the Applied Sciences. The students are organized into six research teams, each of which consists of a postdoctoral group leader and two doctoral researchers and covers a particular thematic aspect of the overarching research agenda. While embracing a broad view

² For more information on the School, see: <https://www.uni-due.de/in-east/school>. The School’s first funding period runs until the end of March 2017, and will be followed by a second (two-year) period that extends up to the end of March 2019.

on innovation, the School's thematic scope is confined to those issues that link up with and actively involve the core research communities at the University of Duisburg-Essen. Apart from the Institute of East Asian Studies (IN-EAST), a central research unit of the University and currently Germany's largest center of social science research on contemporary East Asia, this includes the interdisciplinary Urban Systems program (ARUS), which is one of the University's designated main research areas, the University's automotive research-related departments (the CAR Center Automotive Research and the Center for Automotive Management, CAMA), and the Essen Laboratory for Experimental Economics (elfe). Reflecting the University's own areas of specialization, the IN-EAST School focuses particularly on processes of change in urban contexts.

As the first of altogether five papers, the one by Julia Aristova and Xiaoli Lin looks at the governance of the low-carbon transition in China. The paper's focus is specifically on two sectors that strongly affect domestic energy consumption: building and transport. Following an outline of the national government's policy strategies and programs, the two authors turn to the local level to analyze their actual governance and implementation. The empirical parts concentrate on a comparative analysis of two Chinese cities, Beijing and Shenzhen, regarding the introduction of geothermal (ground source) heat pumps — which are low-carbon residential heating and cooling systems — and the planning of public bicycle systems.

A different take on innovation is presented by Weijing Le and Youngah Guakh, who deal with political innovations — understood as instances of social innovation taking place in the political arena — in two distinct East Asian regimes: China and South Korea. As the term “innovation” is not easily distinguished from other related concepts used in Political Science, such as “reform” for instance, an important step in harnessing it is to define its scope. To this end, their paper contextualizes the popular usage of the concept in China and South Korea.

The research note by Katharina Borgmann and Deirdre Sneeep takes up the issue of studying innovation in urban contexts. While coming from different disciplinary backgrounds, the two authors share common ground in their concern for the transformation of urban space through technology — both in terms of changes in the built environment itself, as well as in people's use of and interaction with that environment (as a result of the use of mobile telephony and computing, for instance). In order to capture such spatial processes and changes, the two authors have incorporated a new digital research tool in their research designs: the mobile action camera. The research note provides a brief overview of this tool and discusses the challenges and chances it offers to scholars of urban studies with reference to two ongoing research projects.

In the final paper, Alexander Haering and Timo Heinrich address a topic that is currently enjoying increasing popularity within entrepreneurship research: the experimental analysis of individual attitudes toward risk. Their comprehensive

literature survey focuses on those studies on cross-country differences in individual risk taking that include specifically Chinese subjects. The findings of the relevant experimental studies seem to suggest that conventional (that is, non-incentivized) surveys tend to exaggerate the propensity for risk taking by Chinese individuals.

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