

The Japanese Association for Mathematical Sociology: History, Current Situation, and Challenges

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History and Ambitions

The Japanese Association for Mathematical Sociology (henceforth, “the Association”) was founded in March 1986 with just over 30 sociologists and interested parties from adjacent fields. Compared to other established sociological associations, it is considered as a very young association, with a history stretching over a quarter of a century (26 years in 2012). However, it has been very active, holding conferences twice a year. Its journal, *Riron to Houhou (Sociological Theory and Methods)* has published 52 issues as of 2012, and prides itself on its rigorous refereeing process.

The Association’s history, in fact, dates back to around 1980, when sociologists with expertise in mathematical and statistical analyses in the Kansai area were meeting on a regular basis, and scholars who were engaged in the national survey of Social Stratification and Social Mobility (SSM survey) were holding study meetings in Tokyo separately. The total number of people involved was about 15. The Study Group on Mathematical Sociology was set up first, and as momentum grew, the Japanese Association for Mathematical Sociology was founded in 1986. About 40 scholars attended the inaugural conference in March, and the core membership consisted of young scholars in their 30s and 40s. The Association attracted sociologists with a mathematical orientation, statistical and quantitative scholars, social psychologists, and economists.

The Association’s charter spelled out its ambitions. “The Japanese Association for Mathematical Sociology aims, **within sociology**, to be a meeting place for all scholars who are interested in deciphering social phenomena through the construction of mathematical models, ... it aims, **outside sociology**, to be a meeting place for all scholars who are interested in deciphering social phenomena by introducing mathematical orientations (scholars including social scientists and natural scientists).” In other words, its aim was “to construct and develop deductive sociological theories based on mathematical thinking.” Right from the beginning, a view existed that what quantitative sociology intended and what mathematical sociology intended were different. However, at the launch, harmony between the two was expected because “both are based on mathematical theory and are complementary to each other.” This might have contributed to making the purpose of the Association vague. That is to say, quantitative sociology is not necessarily oriented toward the construction of sociological theories. It can be said that the contradiction (this may be an exaggeration) between quantitative sociology and mathematical sociology, in a broad sense, which existed at the launch of the Association, still exists. This has been extensively discussed at the Association’s conferences. It is because many members are involved in both disciplines that this contradiction has not developed into a serious schism and that both disciplines have developed

together by being “complementary to each other.” This can be seen in the fact that the long-standing SSM surveys have primarily been conducted by members of the Association.

Present Stage: Conflicts of Mathematical and Quantitative Orientations

At present, studies with highly developed techniques are pursued in both mathematical sociology and quantitative sociology. In mathematical sociology, studies based on evolutionary game theory, agent-based models, and network analysis are developing fast. In quantitative sociology, highly sophisticated techniques such as log-linear models, log-multiplicative models, event history analysis, latent growth curve models, multi-level models, text data mining, and panel data analysis are often used.

It is encouraging to see that research has become more sophisticated and has deepened in both mathematical sociology and quantitative sociology. However, there is no denying that two big problems still exist. First, it is now increasingly difficult to maintain an interdisciplinary dialogue between mathematical sociology and quantitative sociology. As mentioned earlier, the Association is built on a complementary relationship between the two. However, as the interdisciplinary dialogue becomes more and more difficult, the creative tension between the two will be lost and the Association may lose its vitality. This must be improved upon.

The second problem is that because of the degree of sophistication of mathematical sociology and quantitative sociology, interdisciplinary dialogues with other sociological disciplines are becoming difficult. As discussed later, many Japanese sociologists are not mathematically trained. Therefore, they find it difficult to understand cutting-edge mathematical models and statistical methods and cannot fully appreciate their contributions. Both mathematical sociologists and quantitative sociologists have to present their research in a way that is comprehensible to sociologists working in different fields. Moreover, it is necessary for mathematical sociologists and quantitative sociologists to fully comprehend sociological implications and the significance of using such models and techniques. This was discussed in a special issue of the Association’s journal, *Sociological Theory and Methods*, Vol. 26, No. 2, “Significance of mathematical sociology in sociology.” In other words, its position in sociology has always been questioned, is now being questioned, and will continue to be questioned in the future.

Other important issues related to this are mathematical education and training and internationalization. Mathematics, which is the basis of various disciplines, is not firmly institutionalized in sociological educational curriculum. This was true a quarter of a century ago, and it is still true today. Even now, members of the Association manage to learn and teach mathematics by themselves at their universities. Will there be a day when mathematics is systematically integrated into the sociological educational curriculum? Of course, the fact that social statistics, in relation to social survey and quantitative sociology, is taking roots in the sociology curriculum, in addition to the institutionalization of the certification as social researchers, means that members of the Association have made significant contributions.

Pursuing Further Internationalization

The Association has also been pursuing the further internationalization of sociological research. Based on the fact that many sociological studies in Japan are “importations” of studies from Western countries, the Association has been seeking and practicing the promotion of international exchanges (presentations and participation in international conferences) and the “exportation” of our own research. Many members have not only participated and made presentations at international conferences but also have held joint conferences with Western scholars, and the Association has been awarding grants to translate their members’ works. Publishing in English has become the norm in the natural sciences in Japan, but we are still far away from it. Still, the Association should take the lead and encourage graduate students to publish their works in English.

As for joint conferences, the Association has held five joint conferences with the Section on Mathematical Sociology of the American Sociological Association. The first one took place in Hawaii in June 2000. Since then, joint conferences have continued to be held thanks to the efforts of the successive organizers, and the fifth joint conference was held in August 2012 in Denver as a preconference of the American Sociological Association’s Annual Meeting.

These joint conferences have several implications. First, as expected, they have encouraged intellectual exchanges between mathematical sociologists from Japan and the United States. At the first joint conference, American mathematical sociologists scarcely knew anything about mathematical sociology in Japan and, in fact, they “discovered” highly developed research by Japanese mathematical sociologists at the conference. As more joint conferences were held, individual friendships developed and collaboration in research also started. Second, they serve as a good opportunity for young scholars, including graduate students, to present their work at international conferences. It is very challenging for young Japanese scholars whose mother tongue is not English to present their papers at the American Sociological Association’s Annual Meeting or the International Sociological Association’s World Congress. These joint conferences are attended by a number of familiar scholars from Japan, which makes it easier for the young scholars to present their work. By participating in the joint conferences, they become used to the atmosphere of international conferences and can move on to participating in even bigger international conferences.

The Association itself is internationalizing. First, it can be seen in the Association’s journal, *Sociological Theory and Methods*. The number of articles written in English by Japanese and non-Japanese scholars is increasing. Second, more presentations at the Association’s conferences are given in English. It is expected that this will create a pattern that starts with giving presentations in English at the Association’s conferences, developing into giving presentations in English at the Joint Conference, and then leading to publications in English.

As globalization gathers momentum, there is a growing expectation on Japanese sociologists to present their research findings in the international arena. The members of the Association are fortunate in this respect because they are well versed in mathematics and statistics, which are the *lingua francas* of the world. The members of the Association are called upon to reflect on this and

expand on a global scale.

Reference

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