Development of Human Geography in Taiwan in the Last Decade

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I Introduction

Two major aspects of human geography of Taiwan are presented in this paper. The first is the representation of the discipline in tertiary education and its socio-political background. Second, resulting from a thorough search of publications in five major geographical journals for the years 1996 to 2005, the authors try to cover all the themes and issues of human geography in Taiwan in the last decade. Geographic research reflects social changes in Taiwan, as well as follows paradigmatic waves in the English speaking countries, particularly Anglo-America from where most Taiwan geographers obtain their advanced degrees. Starting with positivistic traditions in the 1960's, some young geographers began to abandon the traditional regional approach, while demonstrating deference to the physical earth in their research orientations. Led by new paradigms in human geography, geographers tended to cooperate with social scientists in the 1990's, thus resulting in disparate fields of interest among geographers, particularly in economic, urban, social and population geography.

II Geography in tertiary institutions in Taiwan

In Taiwan, there are five departments of geography, the three oldest ones being based in National Taiwan University (NTU), National Taiwan Normal University (NTNU) and Chinese Cultural University (CCU), respectively, which were established after the Nationalist government moved from Mainland China to Taiwan in 1949. The other two departments were established more recently, with one based in Changhua University of Education in Taichung, and the other

^{1) (1)} Shi, T. F., 'The development and concept change of geography in Taiwan,' *Geographical Research*, 10, 1984, pp. 17–48. (in Chinese) "ti li hsueh yen chiu tsai tai wan ti chu te fa chan yu pien chien". (2) Jou, S. C. 'The anatomy of recent human geography studies in Taiwan: Characteristics and progressiveness of geographical knowledge production,' *City and Planning*, 29 (2), 2002, pp. 265–290. (in Chinese) "tai wan jen wen ti li hsueh te yen chiu chin chen: chin chih sheng chan te hsin yu hsueh ke chin pu hsin chin tan tao".

^{2) (1)} Chang, H. S., 'Feminist geography and its sluggish development in Taiwan', Journal of Geographical Science, 42, 2005, pp. 25–46. (In Chinese) "kua hsing erh shih nien: nu hsing chu yi ti li hsueh tsai tai wan te fa chan". (2) Liang, B. K., and C. Y. Chang, 'Cultural economy and cultural representation of place in geography,' Journal of Geographical Science, 35, 2004, pp. 81–99. (in Chinese) "ti li hsueh te wen hua ching chi yu ti fang tsai hsien". (3) Song, Y. L., 'Beyond the discipline and transition of migration studies in human geography: A comparison between Taiwanese and Anglophonic Studies,' Journal of Geographical Science, 43, 2006, pp. 1–20. (in Chinese) "jen wen ti li hsueh jen kou chien yi yen chiu te kua chieh yu chuan hsiang: tai wan yu ying mei yen chiu te pi chiao". (4) Wu, H. L., S. C. Jou and L. Kong, "The development of social and cultural geographies in Taiwan: Knowledge production and social relevance,' Social and Cultural Geography, 7 (5), 2006, pp. 827–845.

in Kaohsiung University of Education in the second Municipality of Taiwan. Originally a part of the department of Geography and History, the Department of Geography at National Taiwan Normal University was established in 1946. It carried the mission of training teachers in high schools, and to strengthen awareness of the role of the state (imperial China) through geographical education. The National Taiwan University's Department of Geography, which consisted of divisions of atmospheric science and geography before their separation in 1972, is the second oldest department of geography in Taiwan. The third oldest department of geography, also coexisting with its atmospheric science counterpart, was established in 1963 at the Chinese Cultural University. The fact that these later two departments of geography belong to the College of Sciences indicates the influence of scientific research brought by western-trained Chinese geologists and meteorologists at the beginning of the 20th century. As a result, geography was pre-dominantly a physical science subject before the 1980's, while human geography emerged later as a prominent field. This will be discussed in greater detail in the second section.

Institutional changes took a significant turn in the late 1980's, when Taiwan's political liberalization advanced rapidly after martial law was lifted in 1987, and academic disciplines were grounded on a pluralistic society facing rapid social changes. Many PhD Programs started in major universities while social education departments (which contained a geography section) in the Normal Universities proliferated. This trend continued into the first half of the 1990's, when we welcomed two new departments of geography in Changhua and Kaohsiung cities, balancing the regional distribution of higher education in geography. More recently, the sixth department which contains geography, Chiayi University's department of History and Geography, was established in 2000, and its graduate institute was established in 2002.

Several changes occurred in education and teacher-training institutes, reflecting ideological transitions and a move from a "China-centered" to a "Taiwan-centered" approach to representing knowledge. First, regional geography and historical geography started to play more prominent roles in National Taiwan Normal University, while a number of teacher training colleges (now changed to Universities of Education) established Education Departments of Local Studies and Centers of Native Taiwanese Studies. In textbooks, more coverage of indigenous and local knowledge of Taiwan appears, side by side with knowledge of China.

Second, an important breakthrough in the training of teachers took place concurrently. Without obtaining degrees from Universities of Education (or former Normal Universities), one can still obtain the qualifications to become a teacher from universities which have established Centers for Teacher's Education (such as the one started in 1995 in National Taiwan University). The Normal Universities now face competition from other universities that also produce qualified teachers from their Centers. Concomitantly, the falling birth rate of Taiwan's population has led to a reduction in the demand for teachers at primary school levels. Departments that carried names like "social studies education" in the former Taipei Municipal University of Education, National

^{3) (1)} Shi, T. F., The Geographical Education of Junior High School in Taiwan: Reflection and Forecast. Geography, Monograph Series #3, Taipei: National Taiwan Normal University, 1983. (in Chinese) "wo kuo chung hsueh te ti li chiao yu: fan hsing yu chan wang" (2) Wu, H. L., S. C. Jou and L. Kong, "The development of social and cultural geographies in Taiwan: Knowledge production and social relevance," Social and Cultural Geography, 7 (5), 2006, pp. 827–845.

⁴⁾ The three components are geography, history and civics.

Taipei Municipal University of Education, National Taitung University, National Taichung University of Education, National Tainan University, and National Pingtung University of Education, quickly changed their names to include terms such as "regions", as in the Department of Regional Studies in Humanities and Social Sciences, "cultural and physical resources", as in the Department of Cultural and Physical Resources, or "regional policies", as in the Institute of Policy and Development. Nevertheless, the identity of geography is blurred in the re-named departments of the Universities of Education. As a result, the five geography departments play more significant roles in the development of geography on the island.

The overall geography community is small compared to other social science disciplines like economics or sociology in Taiwan. In the five departments, there are 72 fulltime and 26 adjunct faculty members. In the Universities of Education, there are 33 full time faculties and 3 adjunct faculties. Apart from these, there are more than 40 geographers in related fields, such as recreation, leisure, resources, and environmental management, making a total of over 170 geographers. There are 30 full time and 9 part time human geographers in the five geography departments. In addition to those that belong to the Universities of Education, there are 55 full-time and 10 part-time human geographers in all.

Apart from those who obtained their doctoral degrees from overseas, there are now quite a number of geographers who obtained their PhDs from Taiwan universities. Up to 2005, there were 137 PhDs from CCU, NTU and NTNU (73, 34, and 30 respectively). The five geography departments therefore share important responsibilities for producing highly-educated geographers for Taiwan.

III The Research Landscape of Human Geography

(1) Agent of geographical knowledge: Human resources and specialties in human geography

Two aspects of the research landscape are discussed. First, we would like to present the number of scholars that specialized in a certain subfield of human geography. Data was obtained from the homepages of five departments of geography as well as departments that contain a geographical component. This was supplemented by a questionnaire survey done by the Geographical Society of China located in Taipei (in short Geographical Society). As shown in Table 1, the numbers in the brackets represent figures in pairs for 2001 and 2006, respectively. The research specialties reflect the categories used in the Chinese questionnaire administered by the Geographical Society, and translated into English by the two authors of this paper. We hope to illuminate for the reader the diversity of the field of human geography in Taiwan, even though geographers constitute only a small proportion of academics in the humanities and social sciences. At this time, we do not want to regroup them, even though there are quite a number of specialties that have just one person, or have been reduced to none between the years of 2001 and 2006.

As one can see from the first column of Table 1, which summarizes the number of human geographers whose specialties are grouped under subfields, their topical interests in 2006 traverse eighteen categories, the largest being historical geography, regional geography and

 Table 1
 Distribution of Geographers According to Research Specialties

| Research Areas (2001→2006) | Research Specialties | | | | |
|---|---|--|--|--|--|
| Human Geography 72 → 53 persons 16 → 18 categories | Economic Geography $(12 \rightarrow 5)$; Urban Geography $(9 \rightarrow 7)$; Human Geography $(8 \rightarrow 0)$; Settlement Geography $(7 \rightarrow 2)$; Social Geography $(6 \rightarrow 2)$; Population Geography $(5 \rightarrow 3)$; Cultural Geography $(3 \rightarrow 2)$; Behavioral Geography $(3 \rightarrow 1)$; Regional Studies $(2 \rightarrow 1)$; Political Geography $(2 \rightarrow 1)$; Transportation Geography $(1 \rightarrow 1)$; Geography of Development $(1 \rightarrow 1)$; Historical Geography $(5 \rightarrow 11)$; Regional Geography $(5 \rightarrow 11)$; Regional Geography $(5 \rightarrow 7)$; Medical Geography $(1 \rightarrow 3)$; Geography of Religion $(1 \rightarrow 2)$; Geography of Place Names $(0 \rightarrow 1)$]; Geography of Fishery and Agriculture $(0 \rightarrow 2)$ | | | | |
| Geographical / Environmental Education 28 → 22 persons 8 → 6 categories | Teaching / Education of Local Studies $(7 \rightarrow 1)$; Environmental Education $(5 \rightarrow 5)$; Introduction to Geography $(4 \rightarrow 0)$; Outdoor Curriculum for Geographical Education $(2 \rightarrow 0)$; Internet and Distant Learning $(1 \rightarrow 0)$; Computer-Assisted Education $(1 \rightarrow 0)$; Instructional / Educational Media $(1 \rightarrow 1)$; Geographical Education $(7 \rightarrow 13)$; Hazard Prevention Education $(0 \rightarrow 1)$; Multimedia for Geographical Learning $(0 \rightarrow 1)$ | | | | |
| Special Topics in Geography 12 → 22 persons 8 → 12 categories | Research and Planning of Agricultural and Fishing Villages $(3 \rightarrow 0)$; International Migration $(2 \rightarrow 1)$; Applied Geography $(2 \rightarrow 0)$; Geography of Agriculture and Fishing $(1 \rightarrow 2)$; Globalization $(1 \rightarrow 0)$; World Culture $(1 \rightarrow 0)$; Housing Studies $(1 \rightarrow 1)$; Aboriginal Studies $(1 \rightarrow 6)$; [Community Development and Planning $(0 \rightarrow 3)$]; [Taiwanese Business People and High-tech Industry $(0 \rightarrow 2)$]; [Spatial Behavior $(0 \rightarrow 2)$]; [Gender and Society $(0 \rightarrow 1)$]; [Population Migration $(0 \rightarrow 1)$]; [Public Participation $(0 \rightarrow 1)$]; [Ethnic Relations $(0 \rightarrow 1)$]; [Space and Society $(0 \rightarrow 1)$] | | | | |
| Environmental Resources and Land Use* 19 → 18 persons 8 → 4 categories | Environmental Management $(5 \rightarrow 5)$; Land Use and Land Cover $(4 \rightarrow 2)$; Environmental Perception $(2 \rightarrow 0)$; Vernacular Landscape $(1 \rightarrow 1)$; Environmental Impact Assessment $(1 \rightarrow 0)$; Landscape Geography $(1 \rightarrow 0)$; Sustainable Development and Cultural Tourism $(1 \rightarrow 0)$ Tourism Geography (Recreation and Leisure) $(4 \rightarrow 10)$ | | | | |
| Regional Geography 22 → 11 persons 8 → 5 categories | Geography of China $(8 \rightarrow 2)$; Geography of Taiwan $(6 \rightarrow 3)$; Asia-Pacific Geography $(1 \rightarrow 1)$; World Regional Geography $(1 \rightarrow 0)$; Geography of Asia $(1 \rightarrow 0)$; Geography of Europe $(1 \rightarrow 1)$; Chorography $(1 \rightarrow 0)$ Local Studies in Geography $(3 \rightarrow 4)$ | | | | |

| Geographical Thought and Methodology 17 → 7 persons 9 → 5 categories | Geographical Thought $(4 \rightarrow 2)$; Spatial Analysis and Modeling $(3 \rightarrow 3)$; Field Study and Interpretation $(3 \rightarrow 0)$; Spatial Theory $(2 \rightarrow 0)$; Human Ecology $(1 \rightarrow 0)$: Humanistic Geography $(1 \rightarrow 0)$; Research Methods in Human Geography $(1 \rightarrow 1)$; Regional Study of Thoughts $(1 \rightarrow 0)$; Chinese Thought on Ecology $(1 \rightarrow 1)$; [Location Analysis $(0 \rightarrow 4)$] |
|---|--|
| Regional Development $11 \rightarrow 4$ persons $5 \rightarrow 4$ categories | Regional Development $(7 \rightarrow 1)$; Rural Development $(1 \rightarrow 0)$; Industrial and Technological Development $(1 \rightarrow 0)$; Location and National Development $(1 \rightarrow 0)$; Service Facilities and Location Analysis $(1 \rightarrow 0)$; Theory of Regional Planning $(0 \rightarrow 1)$]; Urban and Regional Planning $(0 \rightarrow 1)$]; Regional Economy and Industrial Development $(0 \rightarrow 1)$ |

 $Source: Compiled \ from \ homepages \ of \ Departments \ of \ Geography; \ question naire \ survey \ of \ Geographical Society.$

Note: The underlined research specialties with number changes in brackets (e. g. <u>Aboriginal Studies (1 \rightarrow 6)</u> indicate increasing number of geographers in that specialty between 2001 and 2006; Blocked research specialties with number changes in brackets (e. g. <u>Location Analysis (0 \rightarrow 4)</u>) indicate new specialties declared by geographers in the survey.

urban geography with eleven, seven, and seven persons respectively in each of these fields. This is in great contrast to the previous period (2001) when there were more human geographers in the areas of economic geography, urban geography, regional geography, settlement geography, social geography, population geography, and historical geography with five or more persons belonging to each of these categories. The changes indicate the dominance of geographers trained in universities of education in historical and regional geographies. Human geographers in other areas are widely dispersed in other subfields, with small numbers of researchers in each. This contrasts with representations of geographers in specialty groups in the international academic communities, such as the Association of American Geographers.

From Table 1, we find that Geographical and Environmental Education has played an important role in human geography, while Teaching / Education of Local Studies has become less popular. Another significant trait is the impact of the internet society and the growth of GIS over the last twenty years, resulting in a great demand for human power in geographical education, particularly at the tertiary level, in areas of computer-assisted education, multi-media education, and distance learning.

One also notes the social relevance of research issues attempted by human geographers, on top of the great diversity of interests, despite a small academic population. It is therefore difficult to compare human geography in Taiwan with western countries where geography is well developed as a social science. The applied aspects of geography are not only reflected in geographical education, but also in research on environmental management and land use. Often called upon by the government to contract research and development projects, and carry out consultancy work, the different roles that geographers play bear witness to their contributions to the advancement of society. Examples can be found in tourism, international migration, environmental protection and conservation, and hazard mitigation.

Both systematic topical and regional geography proliferate in research interests. However, due to the small size of Taiwan (36,000 sq. km.), regions are studied at micro- or meso-scales. Overseas studies are uncommon, except in the study of the Taiwanese diaspora. With Taiwan's multi-lateral economic growth and investments in Southeast and East Asia, there are some works on cross-border investment of Taiwanese capital, especially on the studies of their territorial production networks and organizational governance. There is a paucity of research on geographical thought and theoretical geography, and a lack of interest in the alternative and critical geographies, which are common in the West. Some steps have been made to collaborate with neighboring disciplines, such as urban planning, regional science, and sociology, perhaps to make up for the lack of new blood in human geography.

(2) Journals as platforms for scholarly discourses and exchanges

Although scholarly discourses in Taiwan take many forms such as publications, conferences, public seminars, and workshops, journals undoubtedly play a significant role in disseminating knowledge and affecting exchanges. The following eight journals [publishers in brackets] are devoted to the publication of geographical articles:

1. Bulletin of the Geographical Society of China (Chung Kuo ti li hsueh hui hui kan) [Geographical Society] (year of first issue 1964)

^{5) (1)} Chiang, N. and W. Kuo, 'An Examination of Employment Structure of Taiwanese Immigrants in Australia', Asian and Pacific Migration Journal, 9 (6), 2000, pp. 481–459. (2) Chiang, N., 'Dynamics of Self-Employment and Ethnic Business among Taiwanese in Australia', International Migration, 42 (2), 2004, pp. 153–173. (3) Chiang, N. and R. Hsu, 'Location Decisions and Residential Preferences of Taiwanese Migrants in Australia', GeoJournal, Sept. 64 (1), 2005, pp. 75–89. (4) Chiang, N. and R. Hsu, 'Taiwanese in Australia: Two Decades of Settlement Experiences', Geography Research Forum, 26, 2006, pp. 32–60. (5) Hsu, R. and N. Chiang, 'An analysis of recent Taiwanese immigrants in Australia and policy implications,' Bulletin of Taipei Municipal University of Education, 36 (2), 2005, pp. 1–18. (in Chinese) "chin chi ao chou tai wan yi min chih sheng huo hsien kuang fen hsi chi chiao wu cheng tse shang te yi han. (6) Chiang, N., 'Immigrant Taiwanese Women in the Process of Adapting to Life in Australia: Case Studies from Transnational Households.' (1p, D., Hibbins, R and Chiu, W. H. eds. Experiences of Transnational Chinese Migrants in the Asia-Pacific. New York: Nova Publishers, 2006a), (69–86) (7) Chiang, N., "Mstronaut Families": Transnational lives of middle-class Taiwanese married women in Canada.' Occasional Paper No. 19, 2006b. Pingtung, Taiwan: National Pingtung University of Science and Technology, College of Humanities and Social Sciences. (8) Hsu, J. Y. and A. Smart, 'The Chinese diaspora, foreign investment and economic development in China,' The Review of International Affairs 3 (4), 2004. pp. 544–566.

^{6) (1)} Jou, S. C. and D. S. Chen, 'Latecomer's globalization: Taiwan's experiences in FDI and reproduction of territorial production networks in Southeast Asia,' City and Planning, 28 (4), 2001, pp. 421-459. (in Chinese) "hou chin che te chien chiu hua: tung nan ya chi yeh te yu sheng chan wang lo te chien kou yu tui wai tou tzu ching yen" (2) Jou, S. C., D. S. Chen and I. C. Kung, 'Transnationalization and overseas investment: The case of large Taiwanese electronics firms in Malaysia, PROSEA Occasional Paper No. 50, 2001. Taipei: Academia Sinica. (3) Chen, D. S. and S. C. Jou, 'Weakening transplanted production networks: The case of Taiwan's motorcycle production networks in Vietnam and Indonesia,' Asia Pacific Research Forum, 19, 2003, pp. 51-58. (4) Chen, D. S., S. C. Jou and S. H. M. Hsiao, 'Interfirm networking by Taiwanese enterprises in Malaysia and Indonesia', (Gomez E. T. and H-H M. Hsiao eds., Chinese Enterprises, Transnationalism, and Identity. London: Routledge, 2004), pp. 272-202. (5) Jou, S. C., D. S. Chen and S. H. M. Hsiao, 'Re-territorialized Guanxi Networks: Taiwanese Capital in Southeast Asia under the Shadow of "Go West"', NIASNytt, Nordic Institute of Asian Studies, No. 3, September: 17-19, 2004. (6) Hsu, J. Y., 'From transfer to hybridization: The changing organizations of Taiwanese PC investments in China' (Schamp Eike & Claes-Göran Alvstam, eds., Linking Industries Across the World: Processes of Global Networking, Ashgate, 2004), pp. 173-196. (7) Yang, Y. R. and C. J. Hsia, 'Local clustering and organizational governance of trans-border production networks: A case study of Taiwanese IT companies in the greater Suzhou area,' Journal of Geographical Science, 36, 2004, pp. 23-54. (in Chinese) "kua chieh sheng chan wang lo te tsai ti chu chi yu tsu chih chin li mou shih : yi ta su chou ti chu tzu hsun tien tzu yeh wei li". (8) Jou, S. C. and D. S. Chen, 'Regionalization of networked production: Taiwanese manufacturing capital in Southeast Asia and China,' Geography Research Forum, 26, 2006, pp. 9-31. (9) Hsu, J. Y., 'The dynamic firm-territory nexus of Taiwanese informatics industry investment in China,' Growth and Change, 37 (2), 2006, pp. 230-254.

- 2. *Journal of Geographical Science* (*Ti li hsueh pao*) [Department of Geography, National Taiwan University] (year of first issue 1962)
- 3. *Journal of Geographical Research* (*Ti li yen chiu*) [Department of Geography, National Taiwan Normal University] (year of first issue 1975)
- 4. Hwa Kang Geographical Journal (Hua kang ti li hsueh pao) [Chinese Cultural University] (year of first issue 1974)
- 5. Environment and Worlds (Huan ching yu shih chieh) [Department of Geography, National Kaohsiung Normal University] (year of first issue 1997)
- 6. *Geographical Education* (*Ti li chiao yu*) [Department of Geography, National Taiwan Normal University] (year of first issue 1969)
- 7. Journal of Cartography (Ti lu) [Chinese Cartographic Association] (year of first issue 1990)
- 8. Annals of the Association of Chinese Geographers (Ti hsueh hui kan) [Chinese Cultural University] (year of first issue 1969)

The first five are published by four departments and the Geographical Society. *Journal of Geographical Science* has been rated the top geographical journal by the National Science Council. With four issues a year, a large proportion of the papers submitted come from outside of its publishing department. It has an international editorial board of esteemed geographers.

In the following, we attempt to analyse the papers published in the five journals in the tenyear period (1996–2005) according to the topics, so as to draw an academic map of the last decade. Without a classification system at present in Taiwan, we had first thought of borrowing the classification system from *Geographical Abstracts*: *Human Geography*. However, we found that although the system enables papers to be included from neighboring disciplines, it has not been based on geographical specialties, and therefore makes it difficult to allocate geographical papers according to research focus.

We turn to a different system, the Bibliographies in Japanese Geographical Researches (*Chirigaku Bunken Mokuroku*) used by The Human Geographical Society of Japan, which has a schema of 32 geographical areas, as our basis of classification [see Appendix]. In the five leading journals of geography in Taiwan, there were 293 papers published between 1996 and 2005. Around 60 papers have been published by each of the four older journals first published in 1962, 1964, 1969 and 1969, respectively. About one quarter of the papers are in the deductive and theoretical categories to be broadly categorized as review articles, while three quarters, or a large majority are research articles based on empirical studies, as shown in Table 2.

We then looked into the 71 theoretically oriented papers and break them down into three components, as depicted in Table 3. This is based on strenuous efforts of ten month's time to study each paper, or at least the abstracts and to decide on the categories they fall into. To maintain consistency in classification, we had the same two graduate students go over the papers in concentrated periods of time after which the authors of this paper double-checked the categorizations. There were 22 theoretical papers, broken down into (1) Geographical Thought and Methodology, and (2) Trends in Geographical Research. The research articles amounted to 33 in all. The rest of the papers (16) dwell on general introductions to certain geographical topics. A lot of the papers were written by local PhDs who diligently reviewed and pursued new

| I | Types of Papers | | | | | |
|---|-----------------|-------------------|---------------|--|--|--|
| Journals | Review Articles | Research Articles | Total | | | |
| Journal of Geographical Science | 9 | 52 | 61 | | | |
| Journal of Geographical Research | 16 | 49 | 65 | | | |
| Bulletin of the Geographical Society of China | 16 | 41 | 57 | | | |
| Hwa Kang Geographical Journal | 15 | 50 | 65 | | | |
| Environment and Worlds | 15 | 30 | 45 | | | |
| Total | 71 (24.2%) | 222 (75.8%) | 293 (100%) | | | |

Table 2 Types of Papers in Major Geographical Journals in Taiwan, 1996-2005

Source: Five major journals in geography in Taiwan.

Note: Translated papers, speeches, and memorial articles are not included; Papers in GIS, cartography, or with a technical orientation are not included.

avenues in (more or less) traditional fields such as regional geography, retail geography, feminist geography, cultural geography, economic geography, and sustainable development. Issues related to social development in Taiwan were presented in topics related to indigenous population and ethnicity, indigenous tourism, ecological community and the new faces of rural and urban settlement, public participation and sustainable development, knowledge-based economy and industrial geography, agglomeration of firms and industrial clusters, sustainable development, and environmental management.

It is interesting to note that the themes of papers do not correspond with the interests of geographers that were presented in Table 1 earlier. It may be the case that these papers have been published by PhD students, who tend to write on new topics, rather than the limited numbers of human geographers in research universities such as NTU. Also, as the geographical journals publish papers from neighboring disciplines such as land policy, architecture, landscape architecture, and urban and regional planning, one can see the significant expansion in numbers of topics and themes which are not conventional in the human geography discipline in Taiwan. Largely due to meeting requirements for graduation, promotion or review, leading geographical journals therefore effectively serve as a forum for scholarly discourse and exchange, both locally and internationally.

Finally, a word on the papers in the 'Introductory articles' column in Table 3, which includes seven papers on new topics published between 2001 and 2005. The 16 papers focus on geographical education and the environment. This may be indicative of a general characteristic of the development of geography, as has been observed in the empirical studies which represent the research mainstream.

Using the classification schema of 32 geographical areas from the Bibliographies in Japanese Geographical Researches (*Chirigaku Bunken Mokuroku*) of the Human Geographical Society of Japan to supplement the classification system of *Geographical Abstracts: Human Geography*, we have further divided the research articles (i. e. empirical studies) into four 'clusters' (Table 4) in order to accentuate the dynamics of the subfields. From Table 4, one can see that the two largest single groups are environmental management and hazards, and economic geography, each comprising

Table 3 Classification of Refereed Articles in Five Major Journals in Geography According to Research Themes, 1996–2005

| Theoretical Articles | | 22 | Research Articles | 33 | Introductory Articles | 16 |
|--|---------------------------------|----------|---|----|--------------------------------------|----|
| | Introduction of thoughts | <u>5</u> | Cultural Geography | 7 | Methods in Geography | 2 |
| Geographical Thought | Discussion of specific concepts | 2 | Knowledge-based economy and industrial geography | 2 | Questionnaire research | 1 |
| and Methodology | History of geogra- phy | 1 | Indigenous population and ethnicity | 2 | Teaching methods | 3 |
| | Epistemology | 1 | Tourism geography and indigenous population | 1 | Environmental policy | 1 |
| Orientation and Development of Geographical Research | Regional geography | 1 | Environmental economics and discourses on colonialism | 1 | Hydrology and regional development | 1 |
| | Historical geogra- phy | 8 | Environment and humanism | 3 | Fengshui | 1 |
| | Development geography | 1 | Residential pattern and real estate market | 1 | Geography of health seeking behavior | 1 |
| | Geopolitics | 1 | Urban crisis | 1 | Educational resources in geography | 1 |
| | Retail geography | 1 | City structure and trade | 2 | Geographical education | 3 |
| | Feminist geography | 1 | Planning of shopping space | 1 | Teaching assessment | 2 |
| | | | Land use | 1 | | |
| | | | Assessment of sustainability | 1 | | |
| | | | Environmental management | 1 | | |
| | | | Urbanization | 1 | | |
| | | | Environmental management and assessment | 1 | | |
| | | | Historical geography | 3 | | |
| | | | Ecological community and new rural and urban land- scapes | 1 | | |
| | | | Agglomeration of firms | 1 | | |
| | | | Public participation and sustainable development | 1 | | |
| | | | Regional balance and sustainable development | 1 | | |

Note: Columns indicate research themes and number of papers. Underlined research themes and numbers in adjoining column indicate increasing article numbers in that research theme during $2001 \sim 2005$. Blocked research themes and numbers in adjoining column indicate that they are new topics published during $2001 \sim 2005$.

one-fifth of all the empirical research papers. Perception and behavior, land use, environmental resources, issues, and planing are the main thrusts in the former; while subjects such as regional development, industry and manufacturing, high-tech industry, and agriculture and fishery topped the list under economic geography.

The third cluster incorporates social / cultural geography, urban geography, historical geography, tourism and recreation, and geographical education with each group constituting around 10 percent of empirical research. While the bulk of research in cultural geography mainly covers traditional topics like religion / worship, cultural landscape, and language and writing, new approaches like post-modern theory and action theory, and new subjects like the geography

 Table 4
 Classification of Empirical Studies Published in Major Geographical Journals in Taiwan, 1996–2005

| | | | | | | | | | Un | it : Paper in num | ibers |
|--|----|---|----|--|----------------------------------|---------------------------------------|---------------------------|------------------------------------|----|---|-------|
| Cluster 1 | | Cluster 2 | | Cluster 3 | | | | | | | |
| Environmental Management and Hazards | 48 | Economic Geography | 43 | Social / Cultural Geography 30 Urban Geography 23 Historical Geography | | 22 | Tourism and Recreation | 21 | | | |
| Perception and behavior | 13 | Regional de- velopment | 9 | Religion / wor- ship | r- 7 World cities / 4 Settlement | | 5 | Production in space | 7 | | |
| Land use | 10 | Industry and Manufacturing | 6 | Post-modern issues | 5 Spatial structure | | 3 | Salt industry | 4 | Perception and behavior | 3 |
| Environmental resources | 5 | Agricultural activities | 5 | Cultural land- scape | 5 | Digital city | 2 | Land use | 2 | General | 3 |
| Environmental issues | 3 | High-tech in- dustry | 5 | Language | 2 | Urban politics and gover- nance | 2 | Regional de- velopment | 2 | Tourism re- sources and management | 2 |
| Environmental Planning | 3 | Agriculture and fishery | 4 | Sense of place / place con- sciousness | 2 | Social production | 2 | Place names | 2 | Methodology | 2 |
| Heritage and landscape conservation | 2 | Location decisions | 3 | Writing | 1 | Ghetto | 2 | Population | 1 | Tourism resources and capital | 1 |
| Pollution | 2 | Foreign Invest- ment | 2 | Rice farming | 1 | Urbanization | 1 | Colonization | 1 | Tourism Model | 1 |
| Environmental Policy | 2 | Industrial or- ganization and system | 2 | Life style | 1 | Suburbaniza- tion | 1 | Locality | 1 | Community participation | 1 |
| Public partici- pation and en- vironment | 2 | Retail industry | 2 | Action theory | 1 | Urban renewal | wal 1 Spatiality | | 1 | Local develop- ment | 1 |
| Environmental impact assessment | 1 | Transformation of industrial structure | 1 | Heritage preservation | 1 | Consumption space | 1 | Historical cli- matic changes | 1 | | |
| Environmental hazard | 1 | Regional struc- turing | 1 | Local culture | 1 | Public space | 1 | Transportation | 1 | | |
| Environment and resource development | 1 | Township in- dustry | 1 | Self-identity of indigenous population | 1 | History of cit- ies | 1 | Location | 1 | | |
| Sustainable development | 1 | Trade | 1 | Natural envi- ronment and cultural land- scape | 1 | Real estate | 1 | | | | |
| Assessment of overall development | 1 | Territoriality | 1 | Geography of difference | 1 | Informal economy | 1 | | | | |
| Indigenous population and environmental change | 1 | | | | | | | | | | |
| Cluster 3 (Continued) | | | | | | Cluster 4 | | | | | |
| Geographical Education | 15 | Population Geography | 14 | Transportation | 2 | Medical Geography | 1 | Settlement Geography | 1 | Others | 2 |
| Teaching materials | 4 | International migration | 9 | Commuting | 2 | Medical sys- tem | 1 | Settlement so- ciety, structure | 1 | Perception of maps | 1 |
| Internet and distance learn- ing | 4 | Migration | 2 | | | | | | | Public partici- pation and GIS system | 1 |
| Method and implications | 3 | Labor force | 2 | | | | | | | | |
| General | 2 | National policy and group mi- gration | 1 | | | | | | | | |
| Outdoor activities | 1 | | | | | | | | | | |
| Assessment of local identity | 1 | | | | | | | | | | |

Note: Classification based on *Chirigaku Bunken Mokuroku* (Bibliographies in Japanese Geographical Researchers). As the themes of papers are diverse, it may not be possible to fit in all the categories. Some papers are therefore listed individually outside the categories of the schema.

of difference, local culture, indigenous population and subjectivity, and heritage preservation do catch the eye. Although studies in urban geography, while amounting to only one-tenth, are not large in numbers, the themes reflect the frontiers and trends of the area. Historical geography topics are relatively dispersed, apart from the mainstreams of settlement and regional geography. Tourism and recreational research, constituting around 10%, tends to focus on tourist behavior. Research on geographical education carries much less weight in research than it should, judging from the large number of faculty committed to this field. Population geography research, though not significantly represented in the numbers, has been breaking new ground, covering very current subjects like transnational mobility, diaspora, and multiculturalism. Publications by Taiwan's human geographers have, since 2000, also begun to appear in international journals.

The last cluster of papers is grouped under transportation geography, medical geography, settlement geography, and others, such as the application of GIS in human geography. The wide dispersion of papers among a small academic population may lead to a lack of academic dialogue among the clusters. The uneven distribution of papers in each cluster is largely due to amount of scholarly interest in each field, social relevance of such topics, and the development of geography itself.

As the grouping scheme we used is simply based on the number of papers published, we cannot comment on the quality of research. Strictly speaking, each of the five leading journals cited have sound review systems to warrant publications of good quality. Collaborative work among colleagues and mentoring relationships between generations are seen in many of our geographical publications, which is a good sign, demonstrating the vibrancy of our discipline and the efforts to reach goals of building / strengthening paradigms in contemporary human geography in Taiwan. As we also have a large graduate student community who publish before they graduate, as required by some universities, it would be meaningful to devote some time to discuss their theses and publications in the future. Undoubtedly, the progress of human geography depends more and more on the contribution of the younger generation. At National Taiwan University, some professors are actively involved in collaborative research with other geographers in the English-speaking world, thus speeding up the internationalization of geography in Taiwan in the years to come.

IV Conclusion

"A discipline like human geography is not a disembodied phenomenon with a life and trajectory of its own: it is shaped and continually re-shaped by geographers reacting to circumstances in particular milieux, the temporal and spatial situations in which they are placed and place themselves".

In the west, pluralism and multi-dimensional character of human geography has been established as the norm since the late 1970s, as depicted in the simultaneous / progressive

⁷⁾ Johnston, R. J. and J. D. Sidaway. Geography and Geographers: Anglo-American Human Geography Since 1945. 6th ed. London and New York: Arnold, 2004: 381.

development of behavioral, humanistic, radical, post-modern, and feminist geographies. Human geographers' dissatisfaction with geography as a positive science, and growth away from physical sciences, has helped the discipline to lean toward other social science subjects, such as sociology, anthropology, political science, and economics. As outlined in several major works on western geographical thought there is an increasing tendency for a variety of schools of thought to emerge over time in the discipline of geography.

This paper profiles the recent development of human geography in Taiwan, analyzing institutional transition in geography and the development of the academic map over the past decade. Five geography departments in the major universities, distributed across the island, are home to the fairly small geographical community, and are cradles for new geographical scholars. The variety of specialties and research areas are quite diverse for the 55 human geographers, among 170 geographers. In spite of the small population, their publications are well represented in five major geographical journals in Chinese and a few international journals in the English-speaking world.

Among those research areas claimed by human geographers in Taiwan, scholars specializing in historical and regional geography contribute the largest number of publications, dwelling mostly on local studies of rural areas in Taiwan. There are few people working in economic and urban geography, in spite of the importance of these fields in reflecting the frontiers of human geography in the English-speaking world. Therefore, research in these areas is hard pressed to represent the rapid transitions of urban, economic and spatial development in Taiwan. New subfields are emerging at the research frontiers of human geography, and themes with significant social relevance constitute a good part of research by PhD graduates from Taiwan universities. In not exploring this emergent work, our analysis may not fully show the vitality of Taiwan's human geography community.

Apart from providing the reader with a picture through descriptive statistics of published papers in the last decade, this paper has not explained the factors behind the numbers, nor does it claim to have evaluated the progress of and development of human geography in Taiwan. Its objective is to provide a background of human geography, leading us to think in terms of future research directions based on the past agenda. Geographical works published by Taiwan geographers abroad, or geographical work which is published in journals which do not have "geography" in its name, has not been included. Also, as many geographers carry out research projects sponsored by the government, the large diversity of unpublished research reports are omitted from our discussion. The amount of applied research and reform of geographical education at school levels need to be discussed in another paper.

The growing amount of research approaches and themes is greatly helped by the research

⁸⁾ Peet, R. Modern Geographical Thought. UK: Blackwell Publishers Ltd, 1998, p. 10.

^{9) (1)} Peet, R. Modern Geographical Thought. UK: Blackwell Publishers Ltd, 1998. (2) Johnston, R. J. and J. D. Sidaway. Geography and Geographers: Anglo-American Human Geography Since 1945. 6th ed. London and New York: Arnold, 2004. (3) Martin, G. J. All Possible Worlds: A History of Geographical Ideas. 4th ed. New York: Oxford University Press. 2005.

¹⁰⁾ Such as Asia Pacific Research Forum, Asian and Pacific Migration Journal, Environment and Planning A, European Planning Studies, Geoforum, GeoJournal, Geography Research Forum, Growth and Change, Industrial and Corporate Change, Journal of Economic Geography, Journal of Social and Economic Geography, Regional Studies, and Social and Cultural Geography.

output of younger geographers, as noted in other countries, such as Singapore and Hong Kong where the hiring of western-trained young scholars would mean more publications in Anglo-American geographical journals. Though rather slow in this regard, participation of Taiwan geographers in conferences abroad have been quite admirable It is anticipated that graduate enrollment in geography departments is increasing, as in universities of Taiwan as a whole, and better quality of work among graduate students would be anticipated because of stronger school geography than in the last decade.

Earlier, we have covered all the five departments of geography for our discussion. It would be worth mentioning that geographers at NTU have responded positively to the goal of becoming a research-based university, and pay increasing attention to internationalization of its academe. This would lead to a stronger emphasis on publications in the English language, hence a reconstitution of disciplinary status of human geography within the social sciences, and a more robust academic atmosphere in the foreseeable future. Despite the university's pressure to publish in accredited English journals, the authors think that it is also important to give equal weight to research output in our native language to keep the balance, which would be conducive to maintaining an academic atmosphere in which intellectual debate and dialogue are generated more easily.

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¹¹⁾ There were 12 faculty and Ph. D. students who presented papers in the A. A. G. annual meeting in 2006; earlier in 1998, two sessions on "Taiwan at the Turn of the Century" and one on "Natural Hazards in Disasters in Asia" were organized at the 94th A. A. G. Annual meeting. A session on "Taiwan and globalization" has been organized at the coming A. A. G. Annual meeting in 2007.

¹²⁾ The department celebrated its 50th anniversary in 2006 with a symposium on "Rediscovering Geography", where papers were read in English. A review of the department took place at about the same time by a panel of distinguished scholars from Hong Kong, the United States and Singapore. Two advanced workshops on Human Geography were held, apart from the 4th Meeting of East Asian Regional Conferences in Alternative Geography in 2006.

Appendix Geographical Areas

| 1. General Geography | 2. History of geography | 3. Cartography, ancient maps | 4. Geomorphology |
|---------------------------------|--------------------------|------------------------------|--|
| 5. Climate | 6. Hydrology | 7. Other physical geography | 8. Hazards |
| 9. Environmental problems | 10. Population | 11. Settlement | 12. Cities |
| 13. Economic Geography | 14. Agriculture | 15. Animal husbandry | 16. Forestry |
| 17. Acquaculture | 18. Resources and mining | 19. Industry | 20. Land planning and land development |
| 21. Commerce, trade and finance | 22. Transportation | 23. Tourism | 24. Politics |
| 25. Society | 26. Culture | 27. Perception and behavior | 28. Historical geography |
| 29. Place names | 30. Chorography | 31. Geographical education | 32. Excursion / Travel diary |

^{*}Related to Human Geography only.

Development of Human Geography in Taiwan in the Last Decade

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Human geographers in Taiwan are distributed in five geography departments and various social science and education departments. In spite of the small population, their publications are well represented in five major geographical journals in Chinese and a few international journals in the English-speaking world. Apart from summarizing the growth of departments, this paper introduces the subfields and specialties represented by geographers in major universities, surveys the publications in the ten years between 1996 and 2005, and uses a bibliometric approach to analyze the progress made in human geography. The subject matters approach used by the Human Geographical Society of Japan has been used with regard to the above analysis.

Geographic research reflects social change in Taiwan, as well as follows paradigmatic waves in English-speaking countries, particularly Anglo-America from where most of Taiwan's geographers obtained their degrees. Led by new paradigms in human geography, geographers tended to cooperate with other social scientists in the 1990's, thus resulting in disparate fields of interest among geographers, particularly in economic, urban, social and population geography. While empirical studies predominate, social relevance is demonstrated in all the new themes being studied. The future growth of human geography depends on further interdisciplinary cooperation, collaboration with international scholars, and the participation by young scholars, leading to a breakaway from traditional subjects of research and methodology.

Key words: social change, paradigm shifts, bibliometric approach, research landscape, pluralism, social relevance

¹³⁾ Geographical Areas as used in The Human Geographical Society of Japan (HGSJ), 'Chirigaku Bunken Mokuroku (Bibliographies in Japanese Geographical Researches), 9, 1993, pp. 1987–1991, Tokyo: Kokon Shoin. The editorial board includes F. K. Cooper, N. T. Davey, N. M. Dunwell, L. E. Evans, J. C. Hodson, N. E. Jode, E. E. Long, J. W. Sperry, G. J. Towers and L. E. Walker.