



Huang, Jr-Chuan
Department of Geography

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As of 2021, the Department of Geography has 15 full-time ,1 joint appointment, and 8 adjunct teachers, as well as 213 students. Faculty strengths are found in three general fields of interest: Human Geography, Physical Geography, and Geospatial Technology. To meet the demand for geographic professionals in academic research, secondary and tertiary education, as well as the public and private sectors, the Department of Geography offers an excellent environment for advanced education and training in the fields of Land and Environmental Monitoring, Urban and Regional Development, Spatial Information and Application, and Environmental and Resource Management.

Research & Education

In human geography, in 2020, Professor Tsung-yi Michelle Huang published an academic book “Hong Kong, China and the New Feelings Between Them: the Sentimental Politics of the Great Prosperity Dream” (Fig. 1) supported by Research Institute for the Humanities and Social Sciences (RIHSS), Ministry of Science and Technology (MOST). In this book, across the time span of early 2000 to 2015, and through the analytic frame of cultural politics and structure of feelings, Professor Huang investigates how new Sino-Hong Kong-Taiwan development narratives form in urban spaces, with special focus on how such process of formation help shape emerging social subjects. The new development narrative makes localization its demand, anti-China sentiment its internal structure, and sentimental politics its reliance; under such structure of feelings, Taiwan becomes an important target of reference and alliance. Through analyzing cultural texts and discourses, in this book, Professor Huang attempts to construct the possibility of trans-local perspectives, so as to overcome the limitation and blind spots of perspectives enclosed within national or local bound.

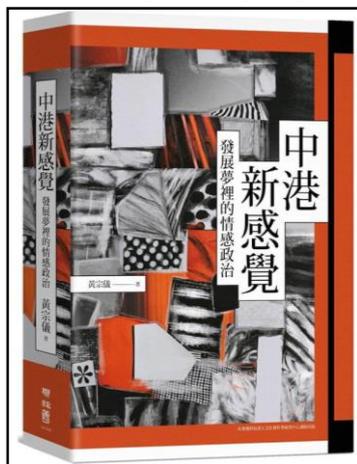


Fig.1 Cover of *Hong Kong, China and the New Feelings Between Them: the Sentimental Politics of the Great Prosperity Dream*, 2020 (Tsung-yi Michelle Huang, 2020)

In the field of physical geography, in 2021, Professor Jiun-Chuan Lin and his team published a research article “Badland landscape response to individual geomorphic events” in the journal Nature Communications. In this important research, Professor Lin shows that in the badlands of southwestern Taiwan, individual rainfall events cause quantifiable landscape change, distinct for the type of rainfall. Typhoon rain reduced hillslope gradients, while lower-intensity precipitation either steepened or flattened the landscape, depending on its initial topography. The steep topography observed in Professor Lin’s first survey is inconsistent with the effects of any of the rainfall events. Professor Lin suggests that it is due to the 2016 Mw 6.4 Meinong earthquake. The observed pattern in the badlands was mirrored in the response of the Taiwan mountain topography to typhoon Morakot in 2009, confirming that badlands offer special opportunities to quantify natural landscape dynamics on observational time scales.

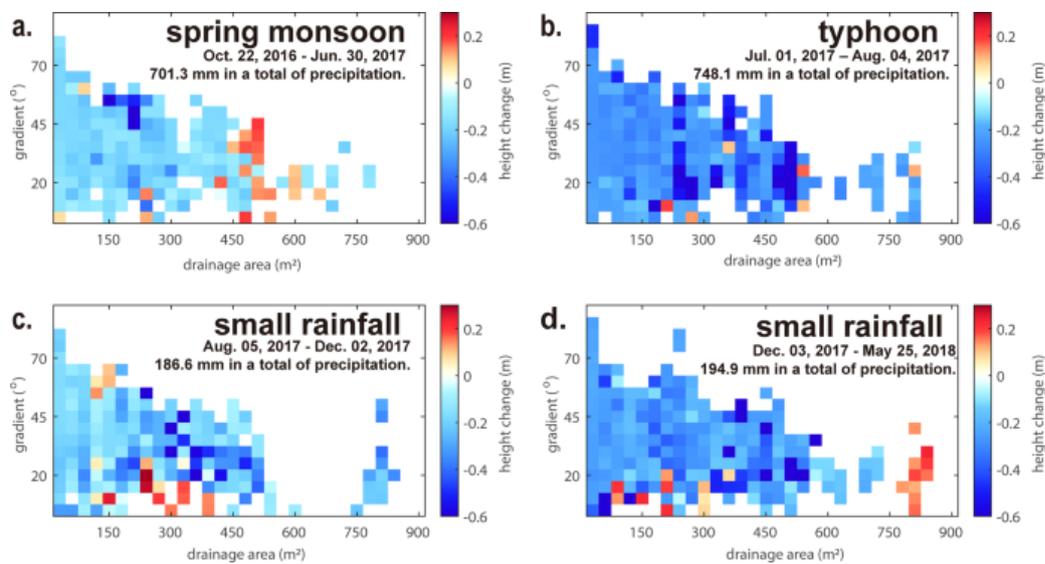


Fig.2 Distribution of mean spatiotemporal erosion for the survey periods. (Yang et al., 2021)

As for the research in geospatial technology, in the past two plus years, while the world is experiencing severe pandemic of covid-19, geospatial technology is becoming an important research field on epidemic dispersion. In 2021, Professor Tzai-Hung Wen published a research article “Regionalization for Infection Control: An Algorithm for Delineating Containment Zones Considering the Regularity of Human Mobility” in the journal Applied Geography. In this research, Professor Wen proposes a novel network community detection method, the Human Mobility Regularity-based Zoning (HuMoRZ) algorithm, to delineate containment zones incorporating mobility regularity. The results suggest that containment zones that incorporate mobility regularity could significantly delay the epidemic peak and critical time and decrease the severity of an epidemic. The zoning patterns proposed in the algorithm could also allow for more life functions in a zone and more evenly distributed life resources across zones than those of zones generated by other methods. These findings could provide insightful implications for fighting the COVID-19 pandemic.

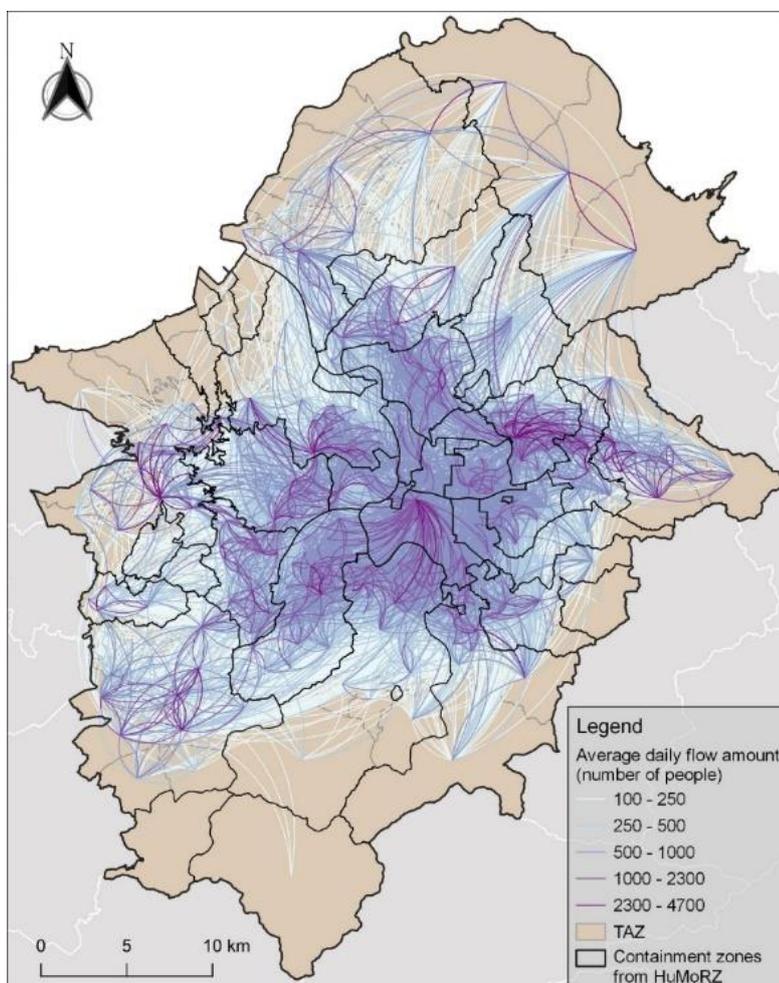


Figure 3: Population flow and the zoning result of HuMoRZ algorithm. (Kuo and Wen, 2021)

As for the international cooperation, Professor Jr-Chuan Huang is a steering committee of Committee on Data for Science and Technology (Taiwan Branch), International Science Council and serves as the steering committee of Hazard and Risk Commission, International Geographical Union. Professor Huang is currently in charge of an international collaborative research actions (CRA) supported by the MOST and Belmont Forum to investigate the possibility of sustainability between society, soil and water. On the research platform, a project (Abandonment and Rebound: Societal views on landscape- and land-use change and their impacts on water and soils, ABRESO) addresses soil and water sustainability in landscapes undergoing transitions. The general theme of this project, to occur in France, Italy, Japan, Taiwan, and the United States, is to determine actual and perceived effects of land use transitions on critical zone (CZ) function in the context of land abandonment. Professor Huang and the team examine associations between perceptions and support for land use change and management decisions (self-sustained or policy-driven), and inform ways to effectively communicate with stakeholders and consider their views of land use conversion and restoration.

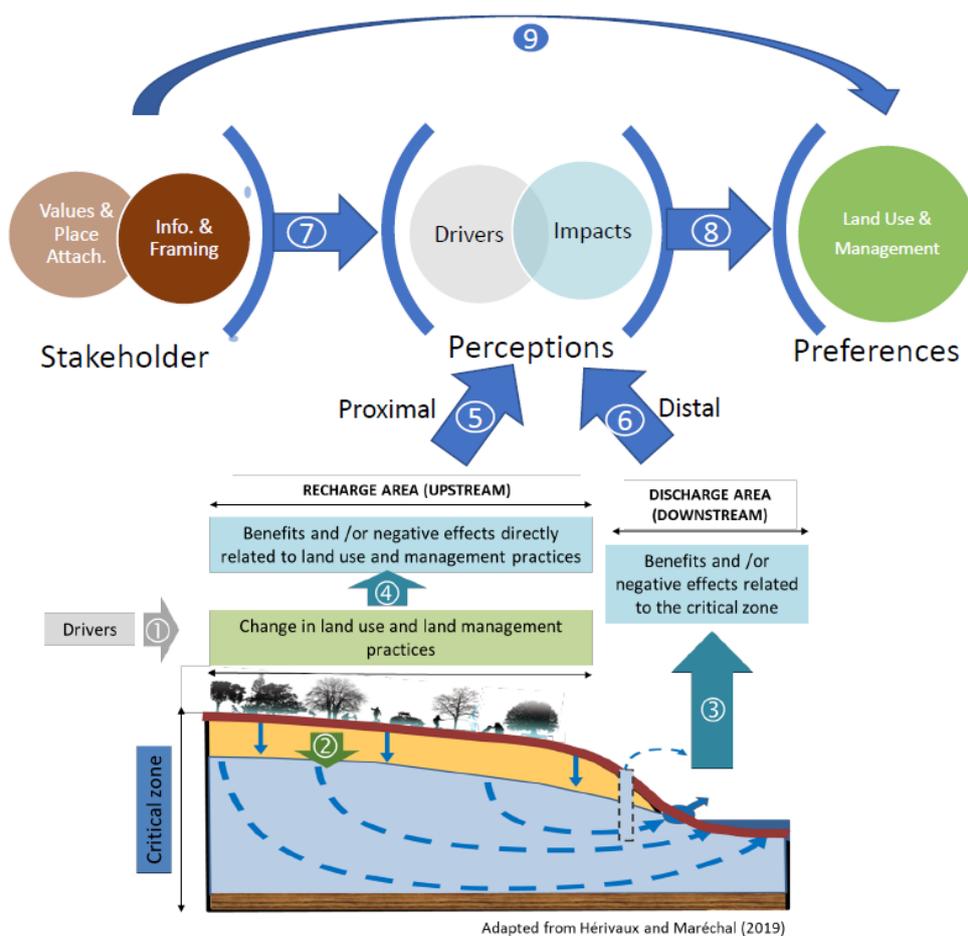


Fig 4. Abreso: Abandonment and Rebound - Societal Views on Landscape- and Land-Use Change and Their Impacts on Water and Soils (from Jr-Chuan Huang)

Awards and Honors

Professor Jinn-yuh Hsu has been working on the geopolitical economy of East Asia since he joined a large international collaborative project with scholars from Canada, UK and Korea in 2012. In 2019, his works earned the Ashby Prize, an international award for innovative geographical publications. In 2020, Professor Hsu was awarded the Outstanding Research Award from the MOST. In 2020, Professor Jinn-yuh Hsu and Professor Shiu-Shen Chien were both awarded the Distinguished Professors for three years.

In 2020, Professor Jiun-Chuan Lin earned Overview of Outstanding Teacher Service Award from NTU.

In 2021, Professor Jinn-yuh Hsu was awarded Fu Ssu-Nien Memorial Chair Professorship of National Taiwan University for his outstanding academic achievement in humanities and social sciences.

Vision

The Department of Geography is also home to several research centers and laboratories. The GIS Research Center is equipped with a data server, 3D-laser scanner, a large format scanner, a plotter, and a computer laboratory hosting 50 desktop computers installed with digital analysis packages, such as ESRI, ArcGIS and other professional software. The Physical Geography Lab is equipped with a polarizing microscope, a water quality analysis meter, a fluid speed meter, a micro-lysimeter, an auto meteorological station, a Leica SmartStation, gas chromatography, and high performance liquid chromatography. The department also houses five other specialized laboratories that support teaching and research needs.

The Department provides extensive quality courses, laboratories, field trips, and internship opportunities for students. It focuses on the integration of indoor learning and outdoor activities to achieve the department's education goal of cultivating geographical professionals with global visions and local awareness, and training professionals in spatial planning and environmental management.

The extensive collection of maps, aerial photographs, and Environmental Impact Assessment Reports is an important component of the research and teaching resources here at NTU Geography.

Publications

In 2021, the department faculties published 25 SCI/SSCI journal articles, 20 of which are among the top 40%. The department also publishes the *Journal of Geographical Science* (TSSCI) three times a year, which includes articles from Taiwanese and international scholars covering a range of issues across this dynamic discipline. In 2020 and 2021, the journal was earned the "Long-Term Media Award" awarded by National Central Library. Through the Ministry of Science and Technology Visiting Fellowships Program, the department sponsors brief academic visits by world-renowned scholars. Several international geographers came to deliver lectures and participate in collaborative research projects with the department's faculties and students.