Language & Culture Mapping: Orchid Island (Lan-yu) of Taiwan and the Batanes of the Philippines

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Digital Libraries and Collections in the Global Community

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Gratitude is given to Eric Yen for the Mandarin Text on GIS and Liao Hsiung-ming for Maps Supervision
With Lu Yu-hsiu for Ethnomusicology
and Lin Chieh-hsiang Film Editor,
GPS of Lan-yu by Christian Anderson, and
Local Arrangements by Andrew Limond
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Lawrence Crissman for Co-editing and Additional Mapping
Peter Bellwood provided topographic maps of the Batanes
Jeanette Zerneke and Kim Carl, ECAI Team

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This presentation is a research model for mapping island language and culture utilizing geographic information systems (GIS) of Orchid Island (also known as Lan-yu in Mandarin and Botel Tobago historically) under the administration of Taiwan.

The language Yami of the people of Orchid Island is part of the Batanic group of the Austronesian Language Family in the Batanes Archipelago (Philippines) of the Bashi Channel stretching south of Taiwan.

Our research team is interdisciplinary representing anthropology, information science, ethnomusicology, and filmmaking. This project extends to a comparative study of the diaspora of people and their utilization of isles in the Batanes Archipelago.
This Atlas

This digital linguistic and cultural atlas for Austronesian speakers covers a vast region. Spatial layers of information are marked in time from prehistory and up.

One layer is based on information of the *Language Atlas of the Pacific Area* (Wurm and Hattori 1981 and 1983). It’s a 47-leaf paper atlas that is being pieced together into a seamless electronic vectored format in *TimeMap* to be utilized as a geographic information system (GIS) for mutual research serving as an academic bulletin board on the Internet for scholarly exchange from Southeast Asia across Oceania.
Introduction

This work stems from the Pacific Neighborhood Consortium (PNC) established in the early 1990s. It is based on digital museum projects concerning linguistics, prehistory, and ethnology, as an Oceania “virtual museum.” Over the past few years, groups from the University of California, Berkeley (UCB), and others are setting up the Electronic Cultural Atlas Initiative (ECAI), to connect areas of the world through a digital geographical information system (GIS). From these shared projects, scholars have unified a technical information network with parameters to chart global spatial temporal data. The initiative is to link geographical sectors of the world as modular areas of research with trans-regional thematic objectives such as linguistics, religions, and trade routes.
ECAI

The Electronic Cultural Atlas Initiative (ECAI) is an international organization of scholars and technical specialists exploring the uses of information technologies in order to promote international collaborative research. Research data is indexed for retrieval by time and place and displayed on a map-based interface. By registering metadata for each data set with the Metadata Clearinghouse, material on remote servers, maintained by individual scholars or by academic institutions, could be located by users over the Internet.

ECAI asks of its members three requirements: (1) to form a team or join an existing one; (2) to register metadata for members’ research data with the ECAI Metadata Clearinghouse; and (3) to agree to work toward the goal of indexing data by time and place.
World Heritage

Our research process emphasizes the four guidelines established by the UNESCO programs of documenting intangible cultural heritage:

(1) Masterpieces of Oral and Intangible Living Heritage,
(2) Living Human Treasures,
(3) Endangered Languages,
(4) Traditional Music.

We focus on the connection with Orchid Island of the Batanes further south. Traditionally the Yami speakers voyaged by sea to the southward islands. From our research we will present The craft of ocean-going boats. In the past, boats were equipped with sails made from stitched palm fiber, yet not at this time. Documentation guidelines of craft making through oral traditions are included in the UNESCO Convention for the Safeguarding of Intangible Cultural Heritage.
Featured Projects

Many online projects currently take advantage of the ECAI and TimeMap infrastructure. Below are some examples:

- Southeast Asia Digital Cultural Atlas On-Line Demonstration
- TimeMap Korea
- ECAI Silk Road Atlas
- A Sasanian Seal Collection in Context - ECAI Publication
- Austronesian Linguistic Mapping
- Historic Sydney Museum Kiosk Screen Shots
- South Asian Animation

In addition to the projects that have been developed using TimeMap, many ECAI collaborators have completed projects that have extensive resources along with complex spatial and temporal records. These projects are among those which show the potential of digital scholarship in the humanities.
GIS

中央研究院歷史語言研究所范毅軍博士在 80 年代末期，就對 GIS 之於中國歷史研究之價值有深刻體認，但受客觀條件限制，直至 1996 年與該院計算中心共同合作，以中心人員為主，方成功組建一個面向全院的空間資訊實驗室 (Geospatial Information Science Lab, GIScience Lab)。目前該實驗室正積極建立時間與空間資訊基礎架構，同時發展相關資訊處理技術，以建立有效的研究支援與服務模式，而中國歷史文化地圖的建置則為重點之一。
由於歷史演化係於時間與空間二基本主軸的推移中展現，歷史文化地圖的概念在於以最直觀的主題地圖方式，充分表達事物的空間關聯性。將歷史文獻利用空間資訊技術加以處理，將相當程度的反應歷史時期某一空間範圍的地形地貌、行政疆域、經社概況、人口分布、乃至氣候、旱澇、天災人禍的影響等。隨著時間軸的延伸，則能表現這些鋪陳於空間中重要現象的演變。這樣一個整合型的架構，可作為提供還原歷史原貌、模擬變演化過程、甚至推測未來趨勢的研究應用基礎環境。此進一步與主題式資訊的空間分布疊合，不僅可將複雜的資訊化約成圖，一目瞭然，更可提供多重資訊整合與關聯分析之鑰，此相對簡化複雜資料的理解與思考過程，有效提昇人類認知與分析的能力。
Co-editor Prof. Lawrence Crissman at Griffith University, Australia, has digitized atlas information for Central Asia, China, and the Pacific and Indian oceans. Prof. Crissman has been instrumental in the language mapping project including the acquisition of the copyright from the *Language Atlas of the Pacific Area* (Wurm and Hattori, general eds. 1981 and 1983) for the digital version prepared with the Computing Centre, Academia Sinica (中央研究院) and Griffith University.
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Examples of the language mapping of North Borneo in the following slides completed at the Computing Centre, Academia Sinica (中央研究院) and Prof. Lawrence Crissman at Griffith University.
The digital GIS overlay map of Taiwan and Orchid Island.
Batanes Islands

These islands are volcanic in origin in the Bashi Channel between the Philippines and Taiwan where the Malayo-Polynesian Batanic languages are spoken. Yami is spoken on the northern island of Lan-yu in the administrative region of Taiwan. The other main islands in order southward are Itbayat, Batan, and Sabtang in the administrative region of the Philippines. Basically they share a common language with variation known as the Batanic Group.
Taiwan in Relation to the Batanes Islands of the Philippines
In the spring of 2004 an excavation conducted by Peter Bellwood on the island Itbayat yielded a jade industry dating back prior to 2000 BP. The jade source was determined to be from Hualien by the Institute of Earth Science, Academia Sinica (中央研究院). This find was significant in pointing to the dispersal of a material cultural resource from Taiwan to the islands south. Now we come to Orchid Island.
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Christian Anderson working on the GIS map of Orchid Island that includes roads and place names.
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are needed to see this picture.
Six Villages of Orchid Island

1. Ye You
2. Yu Jen
3. Hong Tou
4. Ye Yin
5. Dong Qin
6. Lang Dao
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Village Housing
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Lighthouse
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Boat (talala) construction process will be followed here from the cutting of the wood to the assembly and launch presented in slides and film.
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At the National Museum of Prehistory in Taitung an exhibition features Orchid Island in the next two slides.
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The Batanes Archipelago is the coming objective for a mapping comparison with Orchid Island.
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Itbayat Island in the GIS mapping process
This study is part of the greater Asia Pacific ECAI language and culture survey that fits into what is called heritage, that is what we have now from the past. These heritage strands are what come down from our parents in many forms, the artifacts of places, tangible and intangible, such as memories, stories, ways of speaking, architecture, our genetic code, and countless others features absorbed and made into a sense of identity (Buckland 2002).
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