BUDDHISM IN MONSOON ASIA: DIGITAL/SPATIAL HUMANITIES AND CONSERVATION OF HERITAGE[1]

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ABSTRACT

This article brings together studies that illustrate digital/spatial approaches for the conservation of heritage across regional economies and bridging distinctions between cultures. Crosswalks for information from multiple sources and in multiple formats of spatial humanities – a sub-discipline of the digital humanities are based on geographic information systems (GIS) and timelines – to visualize indexes for diverse cultural data and provide an effective integrating and contextualizing function for spatiotemporal attributes. Geography continues to play an important role in dynamic global environments of multicultural diversities ranging across very different regions that increasingly find heritage as common

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1. I offer my gratitude to Benny Liow Woon Khin, Vijaya Samarawickrama, and Tan Ho Soon for editing *K. Sri Dhammananda: Essays in honor of his Centenary*, Vol. 2, Contemporary Perspectives, published by Nalanda Buddhist Society Malaysia, 2018. This project encouraged me to continue my pursuit for utilizing advanced tools of geographic information systems (GIS) to chart the extent of *dharma* transmissions from earliest times in South and Southeast Asia. This coincides with work we are doing for Lewis Lancaster's Atlas of Maritime Buddhism as a project of the Electronic Cultural Atlas Initiative (ECAI) with Jeanette Zerenke and other ECAI Austronesia Team members. Thanks for their years of support. I am grateful to Shu-Heng Chen, Vice President, and Director of Top Projects in Digital Humanities, at National Chengchi University, Taipei, for editing *Computational Social Sciences: Big Data in Computational Social Science and Humanities*, published by Springer, 2018, and my co-authors, Ching-chih Lin and James X. Morris.

denominators. We are looking at anthropology as a mandate the holistic understanding of human integrity at every level and time. Therefore, we are crafting a time map meaningful to our daily lives.

As nations develop their history in the present for its interpretation of the past, we have a commonality of heritages acting as political tools for making sense in our daily life (Buckland 2004). Our models are envisioned as multi-cultural and transnational. In our globalization, peoples acknowledge one another moving in a circulation of ideas, knowledge, and goods across spatial dimensions. Merchants have traded to East Asian ports, through river systems across China and Southeast Asia (Ecom 2017), and navigated to Pacific islands, and returned with trade (Sitnikov 2011).

The research includes early historical evidence of trade networks of Austronesian navigators circulating in the dharma in the Indian Ocean, mainland and island Southeast Asia, and China. This coincides with work on Lewis Lancaster's Atlas of Maritime Buddhism as a project of the Electronic Cultural Atlas Initiative (ECAI) with Jeanette Zerenke and our other Austronesia Team member utilizing geographic information systems (GIS).

We are finding meaning and innovation to enrich what scholarly efforts have already achieved in historical mapping across time particularly interests us. At National Chengchi University, Taipei, Taiwan, in 2015, we initiated our Asia-Pacific Spatiotemporal Institute (ApSTi, http://apsti.nccu.edu.tw). Here we have created an environment for synergies to occur between researchers based on research and sharing advanced technologies in digital/spatial humanities (see Blundell and Jan 2016; Blundell, Lin, and Morris 2018).

INTRODUCTION TO DIGITAL/SPATIAL HUMANITIES

What is the worth and value of mapping ancient archaeological space in modern societies? Malaysia is struggling with this issue. Pre-Islamic societies are inscribed in historical artifacts and archaeological sites (Blundell 2015, 2018 a). Yet, in our contemporary civil society, there is increasing awareness and respect to the ways people lived and their aesthetic perception in their time. Are we slaves to modernity? What about the ancient legacies of a country?

Pursuits in anthropology mandate the holistic understanding of human integrity at every level and time, therefore – we are crafting a time map meaningful to our daily lives. We are looking at historical continuity, starts and stops, across time as heritage transitions and transformations in terms of modern societies. How is this done? When visiting museums, what do you expect? Museum installations, dioramas, paintings, artifacts – yes, how is historical information viewed by the public? Is this of interest to you? We suppose as history comes into daily life it's meaningful, and does it makes sense?

This article brings in studies that illustrate different approaches to regional economies, bridging distinctions between the humanities and social science using digital solutions. Crosswalks for information from multiple sources and in multiple formats of spatial humanities – a sub-discipline of the digital humanities based on geographic information systems (GIS) and timelines – creating visual indexes for diverse cultural data and provide an effective integrating and contextualizing function for spatiotemporal attributes.

As nations develop their history in the present for its interpretation of the past, we have a commonality of heritages acting as political tools for making sense in our daily life. In recent years, regional economies have expanded based on world trends and historical networks. Yet, today we have more national barriers ranging across geographies that increasingly find heritage a common denominator.

Our models are envisioned as multi-cultural and transnational. In our globalization, peoples acknowledge one another moving in a circulation of ideas, knowledge, and goods across spatial dimensions. Merchants have traded to East Asian ports, through river systems across China and Southeast Asia, and navigated to Pacific islands, and returned with wares of their trade, stories, and geographic information.

Finding meaning and innovation to enrich what scholarly efforts have already achieved in historical mapping across time particularly interests us. In 2015, we initiated our Asia-Pacific Spatiotemporal Institute (ApSTi, http://apsti.nccu.edu.tw) at National Chengchi University, Taipei, Taiwan (Blundell and Jan 2016). Here we have created an environment for synergies to occur between researchers

serving to facilitate studies as a home for innovative geographic information systems (GIS)-based research and sharing advanced technologies in the digital/spatial humanities.

Our institute offers a range of project services to facilitate new ways of configuring data based on geospatial tools. Interfacing of spatiotemporal systems, dynamic maps of unique informational possibilities are generated. Researchers in various disciplines contribute to dialogues about techniques, challenges, and the results of digital humanities research. In short, *we are facilitating capacity-building and innovative ways of sharing information via digital methods for visualizing spatiotemporal aspects of the human experience*.

A far-reaching goal is to further standards in cartographic strategies through the utility of digitization and animation of map content giving new possibilities in the hands of local and international collaborators. This allows the uniting of the context of environmental landscapes with cultural data for making enhanced possibilities in spatial humanities with scales of data–large and small–with humanistic and scientific results. Our information across regions is based on a commonality of symbols and motifs of unconscious mutual heritage. We track sources from prehistoric linkages into the realm of early historical connections traced through nomadic legends to the present day (Sitnikov 2011; Blundell and Sitnikov 2018). Our case studies are based on applications of theory supporting holistic approaches to understand stability across diversity.

This research shows that economies are transmitters for rapidly transforming global environments of multicultural diversification to trans-regions from very different geo-cultural areas that could increasingly find common denominators utilizing best scientific practices that produce new paradigms. We view the geographic regions by understanding local changes and global impacts across time.

Here we weave a story of Southern Asia maritime Buddhism through GIS digital and spatial mapping through Southeast Asia. I am working on projects with Gauthama Prabhu for developing a progressive paradigm of ecology and heritage that incorporates a

sense of place in South India imbued with Buddhist heritage, yet politically ignored by mainstream society (Blundell and Prabhu 2018).

Using anthropology and digital/spatial humanities, there is a potential to activate grassroots by communities to re-appropriate and link back their own heritage cultivating local leadership of farsighted outreach. Our interest is based on the ancient heritage of South India and through maritime voyaging of merchants and monks of the *dharma*.

It is widely believed that fast development of East Asia in the late 20th century could be explained in terms of the traditional Asian cultural norms, which are supposed to be one of the main factors to ease the adaptation of struggling economies to the fast globalizing world. It was often suggested that such features of traditional philosophy of Confucianism as "the close family ties, sense of social discipline and respect for hard work" were the engine of economic growth in those countries (Aikman 1986:5).

However, the philosophy of Confucianism is not the only Asian tradition. Cultural norms of many popular beliefs have played a significant role in economic and social activities across the region for centuries. Cultural norms of many faiths also had long periods of successful influences on the processes of regional integration, social and economic development, and stagnation. *Why is it that the same beliefs, religions and traditional cultural norms sometimes could be generators, but sometimes hamper social and economic development?* What has Buddhism contributed?

We suppose that the findings in cultural anthropology and even its more specific subfields such as religion, folklore, and mythology could be an important contribution to the understanding of socio-economic exchange. It seems that periodic environmental changes and technical innovations are the main forces of transformations in social structures which in their turn determine the mechanisms and levels of cross-cultural activity—either integration or isolation.

It is important to notice here that besides the cultural diversity, such as in the Eurasia-Pacific region there is the opposite phenomenon of cultural similarity in spite of the fact that nowadays

people have different beliefs and are separated by various nation-states. Cultural similarity in what peoples share could be explained in terms of former heritage unity or regular longtime contacts among them in the past. For example, wide beliefs and diversity among the Austronesian speaking peoples could be explained by their ability to adapt easily to outside influences.

The main reason for easy adaptation to outside influences is to derive profit from integration through the exchange of goods and other worldviews. Ancient peoples' cultural traditions sustaining over space and time is interesting and useful as a task because it can help to discover mechanisms of cultural integration in the region, which took place in the past and probably could be explained nowadays in terms of inter-religious tensions across regions.

To discover such traditions and effective integration mechanisms we need address to Carl Jung's concept of *collective unconscious* (see Jacobi 1959). According to Jung, the collective unconscious is a part of the individual unconscious mind, shared by a society, and is the product of ancestral experience. It is concentrated in traditions, beliefs and moral norms. The study of mythologies, beliefs, rituals, and cults in combination with particular objects of material culture and archaeological artifacts across Eurasia-Pacific regions could help to analyze peoples and find sets of commonalities, which can help to reconstruct the ideology of initial integration phase in the region and its patterns.

Jack Goody (1996) in his *The East in the West* suggests that similarities in inheritance patterns indicate that the term 'Eurasia' is more valid than either 'Europe' or 'Asia'. We suppose that unification of these two separate concepts into an indivisible one gives opportunity to observe the phenomenon of sociocultural change and stability in its *dynamic variations across* continuous geographical and historical arenas of cross-cultural interactions.

Common heritage denominators are hidden under layers of different variants of popular beliefs in different cultural traditions. Many scholars believe that religious and mythological patterns could be spread in the vast territories along ancient trade routes. For example, Carla Musi (1997) studied parallels between the

Finno-Ugrian shamanism and European mediaeval magic, explains the phenomenon of cultural similarities due to ancient trade routes. She concludes that from the most distant past, Western and Eastern Europe were much closer to each other than could be imagined. Cultural elements, myths and beliefs could be spread along the 'trade routes of Baltic amber' across vast geographic distances.

This ideas of Musi supports our supposition that the stable mythological elements that have traces in mythologies all over the Eurasia-Pacific could be a product of regular cross-cultural exchange and contacts among peoples along prehistory's trade route networks, which long ago connected Eurasia by rivers and seashores, creating and supporting a sense of cultural unity from Scandinavia and British Islands in the West, ranging across to the Far East; from Kamchatka in the North to New Guinea in the South.

RESEARCH

Our current work is based on disciplines of comparative mythology and folklore combined with data of geography, ethnography, archaeology and linguistics to discover new knowledge concerning the phenomenon of cultural transformations and stability. As a data sources we use, the first known among written texts and oral narratives was collected by previous generations of ethnographers, anthropologists, and folklorists.

We look for "native logic by which various peoples make sense out of life and to understand it on its own terms" (Babbie 2010). We are collecting data relevant both from the transfer and worth of mythological symbols and objective phenomena of economic daily living. Why is this important? It is to study the interplay of ancient cultural pursuits in the archaeological record and mapped with advanced geographic information systems (GIS). The question is relevant today to better understand ancient ocean transport networks of the *dharma* from ports of Southern Asia to eastern shores.

The research components are based on documentation of merchants and pilgrims and their routes, ship technology, navigation, and archaeology (Ray 1994). Methodological questions were created on issues of research design and strategy as an empirical science.

In recent decades we have entered an age where digital tools are ever increasing in capacity to help us with daily life. In the academic realms of text mining, network analysis, public history, heritage studies, and mapping we are coming of age in digital humanities and related disciplines (Blundell and Hsiang 1999). Among these areas, many specialties focus on analyzing digital space through time. We call this area spatiotemporal research—mapping across time with digital computational methods providing a large array of information. This enhances our ability to observe data beyond an individual's abilities to perceive all the possible components.

The possible data stems from aerial mapping, remote sensing, photometric imagery, random sampling archaeology, statistical programming with languages such as R, and contemporary software development for innovative methods to see beyond what we can see. When conducting fieldwork, you may find there are occasions when digitizing data becomes necessary. Whether this is due to limitations such as time or access, mobility issues requiring light travel, or due to chance, such as the occasional lucky find, digitization is an excellent method to collect spatiotemporal data. This chapter outlines several varying projects and methodologies in the digital humanities incorporating integrated approaches to spatial humanities and spatiotemporal research. We invite you to participate in this field of spatiotemporal methods to enhance your research. With this chapter we hope to inform, instruct, and inspire more research in this new and exciting area (Blundell, Lin, and Morris 2018). Mapping is one of the most commonly used techniques in reviewing our "sense of being" in space (see Cosgrove 2004; see Blundell 2011, 2012).

Our time maps research contributes to important academic discourse in many ways. Time maps are utilized to trace stories by the way people move through time. These visualized spatiotemporal displays contribute to discovering knowledge, answering questions, and seeking other questions. Spatial humanities produce a cycle of questions creating layers of maps portrayed in different ways.

The question is to what extent did international religious systems, such as beliefs in the *dharma*, beginning about 2,300 years ago facilitated by Austronesian speaking Malay/Indonesian

navigators? This is to say there was a range of influence stemming from Southern Asia across the Bay of Bengal to island Southeast Asia. The region became receptive to the *dharma* in peninsula and island Southeast Asia. How could routes be traced?

The supposition is the *dharma* as a literary belief system was carried as far as writing could be traced on palm leaves, metal, and stone. In the 2nd century CE, my hypothesis is that the *dharma* moved out by sea travel onboard ships with seasoned mariners who we suppose were indigenous, now know as Austronesian speaking voyagers (Blundell 2014 a, b) and in stone relief imagery depicted at Borobudur in Java (Figure 1). Yet, there are gaps in the record. So to remedy this, we are taking stock of old knowledge, and new technologies within today's academic networks to further trace the extent of seemingly unrelated cultures intersected, and its periphery (Blundell 2016).

***Figure 1**. Stone relief panel of voyaging outrigger ship on the Buddhist monument Borobudur, Java, Indonesia, 9th century.*

This project owes its existence to Lewis Lancaster who established the Electronic Cultural Atlas Initiative (ECAI, http://ecai.org), University of California, Berkeley, in 1997. At that time, Lewis Lancaster invited scholars of Austronesian languages and cultures to be part of this international collaborative reaffirming and furthering the United Nations Millennium Goals by the indispensable common house of the human family, "through which we will seek to realize our universal aspirations for peace, cooperation and development. We therefore pledge our unstinting support for these common objectives and our determination to

achieve them" (United Nations Millennium Goals 8th plenary meeting, September 2000).

For public museum displays, our team thought of producing modular units of the story intersecting early Buddhism with Austronesian voyaging. Theses components include visually documenting ports, ship construction, and sailing routes. Our research illustrates a range of ways to facilitate configuring social science data with geospatial tools featuring Taiwan research with GIS point locations, migration and historical trade routes, and religious sites of the region linked to enriched attribute spatial information (Blundell and Zerneke 2014).

Today's current advances in GIS computing and information infrastructures offer researchers the possibility of reconsidering the entire strategy of analysis and dissemination of information. It "enables humanities scholars to discover relationships of memory, artifact, and experience that exist in a particular place and across time" (Bodenhamer 2010 *et. al.*).

Documentation includes merchants and pilgrims and their routes, ship technologies, ports, and remaining artifacts. The current project, ECAI Atlas of Maritime Buddhism has a first phase goal of providing GIS mapping of archaeological sites along the coast lines of India and Sri Lanka extending to Southeast Asia and ending with the Chinese river and canal systems, coastal Korea, and Japan (Figure 2).

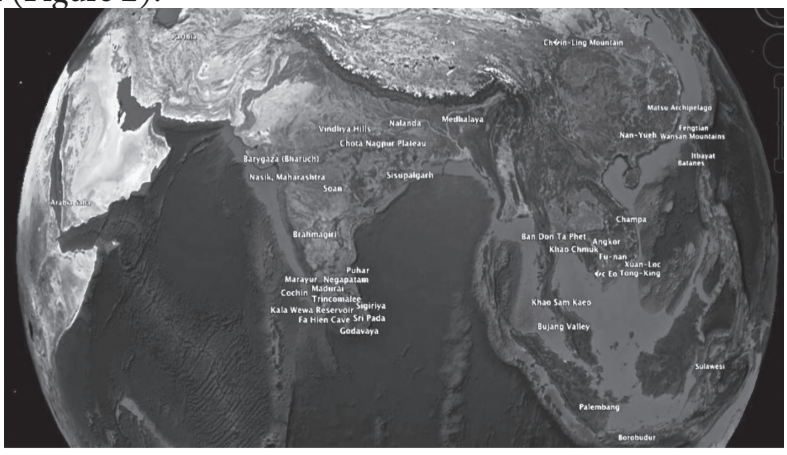

Fig 2. *The ECAI Atlas of Maritime Buddhism featuring sites of research in Monsoon Asia.*

Geographic information is required by a wealth of scientific research for various disciplines. Due to much progress of geospatial technologies in recent years, acquisition of high-quality spatial and temporal information has become much more efficient and cost-effective than past few decades. Remote sensing provides massive high resolution imageries about Earth surface, which can be analyzed by image processing tools to automatically derive valuable information for various applications such as climate change, land resources inventory, environmental monitoring, and urban sprawl.

We are challenged to imagine new methods for doing research and making results available to broader user communities. Can we find meaning and innovation digital humanities beyond what has been traditionally part of scholarly efforts? We examine GIS point locations tracing routes and networks imbued with historical meaning across the region linked to enriched attribute information. These are charted and visualized in maps and can be analyzed with network analysis, creating an innovative digital infrastructure for scholarly collaboration and creation of customizable visualizations.

The Atlas helps to show Buddhist related artifacts and sites clustered at seaports in India as well as a number of regions of Southeast and Eastern Asia. The network of Indian seaport merchants was a primary support for the *dharma*. Today these were classified as Hindu or Buddhist as they coincided at the time. The respect for Buddha was prevalent from the 2nd century CE, if not before. What form of Buddhism? At the time, the respect for Buddha was based on the individual. This is known as *bhakti* or to share, partake in, with your deity, such as Buddha or Siva.

The seafaring *nusantara* traders of the islands of Southeast Asia created trading centers facilitating Hindu/Buddhist propagation in Southeast Asia, which proved of the existence of Buddhism with Pala Mahayana influences from South India. This faith was brought in and practiced by these Indic merchants. The respect shown to the Buddha was a more inclusive of an overarching belief system.

Buddhism diminished in India, as it was supported by kings who were politically replaced by kings devoted to Siva, etc. by about the 10th century CE. It was seen as the raise of Hinduism. Yet, the term

Hinduism did not exist. Our view in the present day is to divide and classify those beliefs as Hindu and Buddhist.

TRACING HISTORY THROUGH MAP LAYERS

Today, with our current geographic technologies we are able to trace this historical process as map layers—from prehistory to early history into the era of written inscriptions. Paul Wheatley (1961) brought this to my attention in his publications. His methods and terminologies were based on his ability to translate texts from both early Indic and Chinese writings. He mapped the historic *Southeast Asia* showing layers of settlement. The ancient texts of Wheatly's *Golden Khersonese* comment on the trade relations with the Malay Peninsula and across Southeast Asia.

Our research shares ideas about early historical Indian Ocean destinations to seats of kingdoms and trade centers where the word of the *dharma* and its faith developed in a healthy vigorous way, especially in particularly congenial regions of Southeast Asia. We have traced early evidence of trans-ocean sailing craft across Monsoon Asia.

An important element in this research includes the role of the Monsoon winds and the annual shift of wind direction that determined the trade calendar for ocean shipments (Figure 4). The time and distance from Africa to India or from India to Malaysia or further out across the seas to East Asia depended on seasonal wind directions.

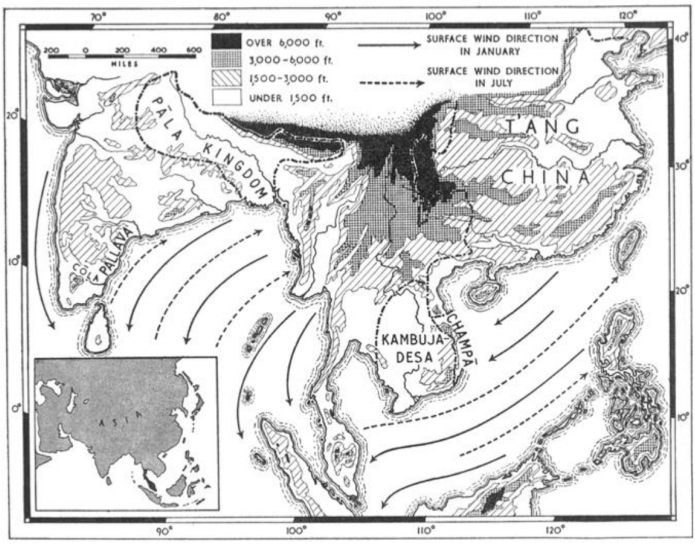

***Figure 4**. Historical Monsoon wind seasons, Wheatley 1961, xviii.*

A corresponding resource is our ECAI map of Austronesia that overlaps with the Buddhist distribution of materials and providing a local context for ocean shipping lanes and ports. From East Asia some of the earliest cultural linkages were based on the innovation of ocean going navigation, sailing out of Taiwan about 4,500 to 3,500 years ago carried a linguistic dispersal known as the Austronesian trade languages incubating across the Philippines, Indonesia, Malaysia, and to Micronesia initiating Malayo-Polynesian languages (Figure 5.).

***Figure 5**. Out of Taiwan seafaring routes between 4,500 to 3,500 years ago. Map displayed at the Austronesia Exhibition of Bentara Budaya, Denpasar, Bali, Indonesia, July 20, 2016.*

HISTORCIAL ATLAS OF MONSOON ASIA

Our knowledge derives from various research fields, and integrates many different types of data and analytical styles developing new research methodologies, creating paradigm shifts and multi-vocal views in the humanities. Our aim is interdisciplinary for producing narratives from ancient evidence; thus we are recounting timelines of religious transmissions, aesthetics, and trade partnerships.

This data is collected for the Atlas, it can be a resource for museum installations that can be interactive, animated, and augmented or installed in immersive 3D display environments. The development of Apps allows for our information to be available on handheld devices.

Geographic information and timelines provide an effective integrating and contextualizing function for cultural attributes. As cross walks for information from multiple sources and in multiple formats they create visual indexes for diverse cultural data. The system is based on GIS point locations linked to enriched attribute information. We are able to chart the extent of specific traits of

cultural information via maps using GIS gazetteer spreadsheets for collecting and curating datasets. Through methods in spatial humanities, history reaches new dimensions, with state of the art opportunities while gathering and analyzing data. With our advanced spatiotemporal tools, it is exciting to research multidimensional pathways of Monsoon Asia.

Our ECAI Atlas of Maritime Buddhism efforts include the development of a touring 3D immersive museum exhibit. This exhibit is in part supported by the efforts of a diverse group of ECAI affiliates and teams. A wide range of contributors are collecting and cataloging data, which can be used in various ways for different audiences.

One of the organizing themes of the atlas is Atlas modules. These modules are curated by an author, or team, to document a story, event or theme. Each is supported by multiple forms of data and visualization. Historical kingdom map overlays on Google Earth give time-enabled layers of information within a specific geographic region, time period or cultural era, trading system, person or group of people (Figure 6). This approach is supported by an infrastructure to capture and archive content and is expected to grow.

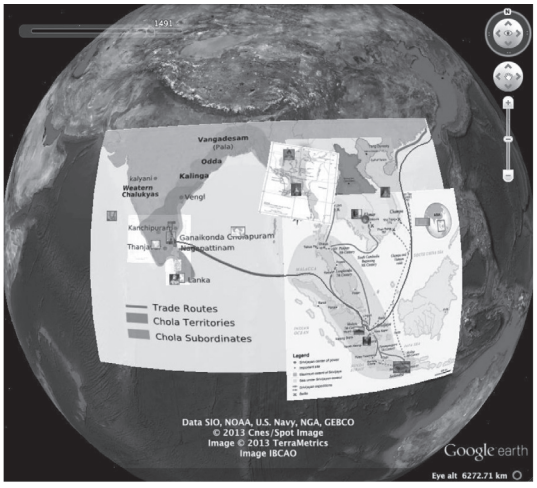

***Figure 6**. Maps of historical kingdoms in Southern Asia, their associated trade routes, and other information are used to construct geo-registered layers by time in Google Earth.*

CONCLUSION

Origins of this research began with my thesis written from the perspective of India and Sri Lanka to explore sources and expansions of regional cultures. This work was based on translations of Indo-European, Dravidian, and Chinese early historical literature. It has increased my understanding of growth and dynamics of the ancient cities and trade routes across mainland and island Southern Asia from Neolithic cultures to early history making connections with East Asia and Pacific Ocean island cultures (see Blundell 1976, 1984, 2003, 2009, 2014 b, 2016, 2017, 2018 b).

A far-reaching goal is to further standards in cartographic strategies through the utility of digitalization and animation of map content giving new possibilities in the hands of local and international collaborators. We provide examples for developing best practice standards applied to databases giving interactive multimedia utility aspects. This allows uniting the context of environmental landscapes with cultural data for making enhanced possibilities in spatial humanities with scales of data, large and small – with humanistic and scientific results.

For comprehensive developments in spatial humanities we consult Jo Guldi's introduction of the spatial turn for eight academic disciplines, "What is the Spatial Turn?" (2016) and Richard White's essay "What is Spatial History?" (2010). Digital mapping today gives resource affordability to researchers. Availability to digital resources allows novice or advanced researchers who are not cartographers, abilities to chart information.

Now historiography has fresh and innovative tools (Robertson 2012), and not about literary text mining. GIS provides history "the most exciting developments in both digital and spatial humanities" (Gregory and Geddes 2014) with advances in computing and information infrastructures offering researchers possibilities of reconsidering the entire strategy of analysis and dissemination of information. It features 'deep mapping' acknowledging multiple meanings in a place that "enables humanities scholars to discover relationships of memory, artifact, and experience that exist in a

particular place and across time" (Bodenhamer *et. al*. 2010).

Why is this important? We connect with a continuum of religious transmissions across Monsoon Asia. This article highlights our research for the development of a digtial Atlas based modules featuring martime Indo-Pacific and Indic *dharma* influences with a focus on historical Buddhist outreach.

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