A Dialogue with Information Scientists: An Anthropologist's Experiment in Area Informatics

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A Challenge for Area Studies

Interdisciplinary study and extensive fieldwork have both been essential components of area studies at CSEAS since the center's founding in 1963. From the beginning, CSEAS has carried out collaborative research projects with members from diverse backgrounds in the natural sciences, social sciences, and humanities. In this environment, even natural scientists are used to spending long periods of time in the field conducting fieldwork to the same degree that anthropologists did. Fieldwork (field survey, ethnographic analysis) is thought of as an imperative and differentiates the CSEAS specialist from those whose study of Southeast Asian societies rely on available processed data.

However, even if both interdisciplinary study and extensive fieldwork remain paramount in our area studies, the conditions within which we undertake them have drastically changed in recent decades. What lies behind these changes is, in effect, a technological restructuring of our human lives. Nowadays, fieldworkers conduct research in Southeast Asian countries using various electronic tools that did not previously exist, such as the digital camera and mobile GPS systems. Yet, not only our research tools, but also those societies that are the subjects of our research, have substantially changed in recent years. Significantly, the use of electricity has now become very common in Southeast Asian lowland villages, and even highland peoples can now gain access through solar batteries sold in local markets. This expansion of the power grid shows the unparalleled degree in which both infrastructure and communication technologies have developed. Even though researchers at CSEAS have studied Southeast Asian societies for nearly 50 years, the landscape has undergone a radical transformation.

Area Informatics has its genesis in area studies and technological change. Prof. Shibayama Mamoru, Center for Integrated Area Studies (CIAS), and his colleagues working in the field of information technology at CSEAS and other institutions, played a key role in the birth of this new methodological approach. Shibayama has called for new research methodologies that incorporate methods of analysis and visualization from information science to process large amounts of data to search for regularities and patterns (See Shibayama 2012). Doing so can help us to discover and explain what has not been previously noted or accounted for in area studies.

But to what degree can 'Area Informatics' contribute to area studies? Information science makes it possible to gather, organize, integrate and share regional information. It also introduces innovations to data processing and accumulation of information. The introduction of new methods such as spatial area informatics like GIS for verifying previously argued hypothesis can deepen and extend empirical studies of societies.

While data mining can contribute to discovering new knowledge, as Shibayama argues, we are still left with a question: is this merely a tool or is it a definable research "area" that can provide new ways to understand regions and their societies? An experimental 'Area Informatics' that can fruitfully engage in area studies is essential to solve this question.

Dialogue with Information Scientists

I have been studying the culture and society of Cambodia and neighboring countries since the end of the 1990s. In 2008, I had a chance to work with information scientists on a research project titled "Mapping Theravada Buddhist Monasteries/ Hermitages in Time and Space: A Cross Regional Study of Practice, Mobility and Network in Mainland Southeast Asia" (headed by Prof. Hayashi Yukio, CIAS, Kyoto University: 2008–2010). The project aimed to map the dynamic formation of Theravada Buddhist cultures in Mainland Southeast Asia and involved collaboration between area studies researchers (anthropologists and historians who speak vernacular languages and have long research experience in the area) and information scientists. The majority of the lowland population in Mainland Southeast Asia are Theravada Buddhists. The religion is based on the sacred Pali canon and its adherents share the same religious notions such as the ideology of merit, and hold events and rituals that have resemblances across Southeast Asia. However, everyday Buddhist practices embedded in people's daily lives are notably different. The point here is that a comparative study of the diversity of Buddhist cultures in each locality has the potential to deepen our understanding of the complex cultural dynamics that played a crucial role in the formation of Mainland Southeast Asia.

Both area studies researchers and information scientists have exchanged frank opinions on the possibilities and challenges of 'Area Informatics.' Area studies researchers conducted quantitative data collections in several sites in Thailand, Cambodia, Laos, Yunnan province of China. I worked as a member of this project and conducted field research in rural Cambodia in the Buddhist Lent Season (June–August) of 2009, 2010 and 2011. In each year, I organized a research team with nearly 10 young Cambodian researchers and visited all the *wat*s in 4 districts in Kampong Thum province, located 190 kilometers from the capital. The team spent more than two weeks visiting nearly 90 temple-monasteries in the area. In each *wat*, we interviewed abbots and elderly laypeople regarding the general information of each place. At the same time, we collected the life-history data of all individuals, both monks and laypeople. In total we were able to conduct about 1,200 interviews each year.

This form of minute data collection is a positive example of applying 'Area Informatics' in area studies research. There is no

doubt that there are differences in Buddhist practices in Mainland Southeast Asia. However, the diversity in this region cannot be fully understood solely from the perspectives of canonical or philosophical texts. Anthropologists familiar with existing differences have used descriptive/ethnographic analysis to explore cultural features in a locality, but their insights, however rich, cannot be applied at the level of the region for any meta-understanding of its diversity. In short, we need a new approach for understanding a region. 'Area Informatics' helps in that it can help provide a macro-picture through quantification of people's behavior. Actually, the project members spent a lot of time on the content of questionnaires, which were used in several research sites in the region. The data derived were then used in the discussion of cultural diversities in the region.

'Area Informatics' enables the processing of large amounts of data following certain criteria to identify regularities and patterns. However, it is very difficult to find reliable large data sets for Southeast Asia. National statistics are issued by government institutions in each country, but these provide only general information, which may not necessarily illuminate the situation of specific communities in the country, let alone the region. For monks/novices in Cambodia, official statistics only provide the total numbers in each province and not the actual details of information such as their age distribution and their duration in monkhood/novicehood. In short, determining ways to conduct research for collecting data is very important for 'Area Informatics' in Southeast Asia area studies, albeit extremely time consuming.

The above project encountered another difficulty. In reality, most area studies researchers were frustrated when they were told that there was no place for any qualitative understanding in 'Area informatics.' Information scientists see human behavior only from the perspective of quantitative information. One of the objectives of the project was to confirm if data mining could actually allow us to discover regularities in the behavior of people in Theravada Buddhist societies. Area studies researchers try to find regularities in the field through observations and interviews. Information scientists say that so-called data mining (that is, comprehensively collecting and analyzing all the information from societies) contributes to the discovery of knowledge in previously unexamined areas. But in what way can data-mining enable area studies researchers to explain the culture and behavior of Theravada Buddhists in each society in Mainland Southeast Asia? This question remains unresolved since my involvement on this project.

Case Study in Progress

One of my current research interests is to uncover the reason for the decline in the number of monks/novices in Cambodia through 'Area Informatics' techniques. Theravada Buddhism spread among the lowland populations in Mainland Southeast Asia over a period of a thousand years. In Cambodia, over 90% of the population are said to be Buddhists. The constitution declares Buddhism as the state religion, and the Ministry of Cults and Religions works for assisting broad Buddhist activities in the country.

> " *Area Informatics (AI) can help area studies researchers accumulate, process and visualize data to produce potentially rewarding new meta-analyses of South east Asia as a region* "

Needless to say, Cambodian society has experienced dramatic and repeated transformation over the past forty years. The Pol Pot regime brought about the near-total destruction of Buddhist activities in 1976 by ordering all the monks in the country to disrobe. Cambodian monks were reborn under the initiative of socialist governments in 1979, but ordinations were banned for men under 50 years old until 1989. The state direction for religious activities ended in that year, and the recovery of Buddhist activities in the country went into full swing at the beginning of the 1990s. Since the early 2000s, Cambodian society entered the era of globalization leading to a tripling of GDP per capita (from $US 253 in 1998 to $US 739 in 2008) all within the last decade. This is testimony to this transformation.

Interestingly, the number of monks/novices in the country started to decline in 2004 after showing a continuous increase since 1979. There were over 60,000 monks/novices in the country in 1969, which accounted for 1% of the total population at the time. During the Pol Pot period this dropped to zero, but gradually increased after the official ordination ceremony held by the socialist government in September 1979. Between 1989 and 1992 there was a boost in the number of monks/novices through the removal of age-restriction for ordinations that the socialist state had determined in the previous decade. And increases continued in the 1990s within the context of rehabilitating society and culture. However, the number of novices started to decrease in 2004 and monks followed this trend in 2007.
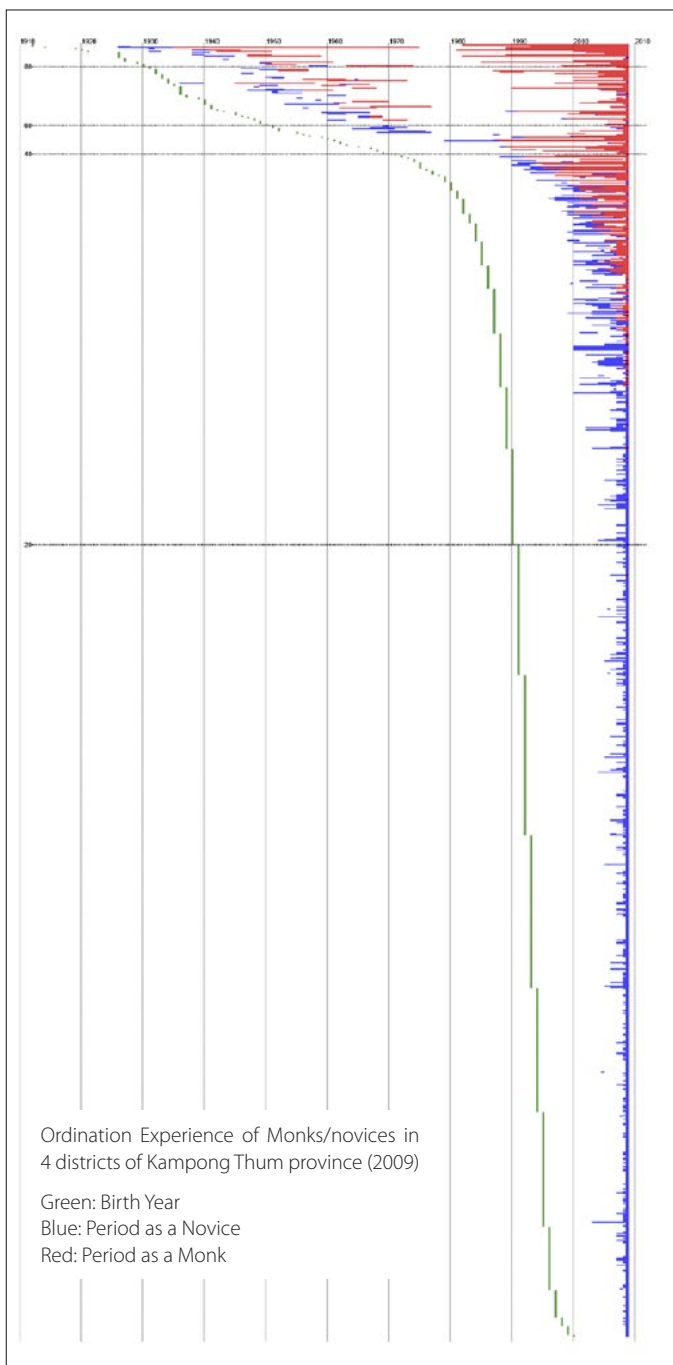
Ordination Experience of Monks/novices in
4 districts of Kampong Thum province (2009)

Green: Birth Year
Blue: Period as a Novice
Red: Period as a Monk

chart 1

Being a novice/monk in Theravada Buddhist societies is a very complex phenomenon. Ordination as a monk was once recognized by Cambodian people as one of the prerequisites for men to marry a woman, and their devotion to the development of Buddhism is often heard as a reason for their ordination on official occasions. This is seen as an opportunity for young men to pay a debt of gratitude to parents, especially mothers, by giving a chance of merit-making, something still often referred to by researchers. At the same time, it expands the possibilities for the social mobility of young boys by offering educational opportunities in the national Buddhist education system as well as training in secular subjects. As such, to be a monk/novice has multiple meanings and the changes in this

reflect constantly evolving societal trends.

Recently, these trends have become common in Theravada societies.[1] In Cambodia, the decrease peaked with a change in societal trends from rehabilitation to globalization in the mid-2000s. Population growth in Cambodia has been high in recent years and people are active in conducting various merit-making acts, such as donating food and money to monks. Yet, the ordination patterns of Cambodian men are now in transition. Since the beginning of the 21st century, Cambodian society has seen the further penetration of the market and globalization and a decline in the number of monks/novices in the country might be evidence of this shift. Sociological studies on this background, based on the interpretation of qualitative data such as narratives are very interesting to read, but have difficulty in putting forward convincing and empirically grounded explanations. In this regard, the quantitative analysis that can be provided by 'Area Informatics' can give us clues to understanding this trend from a different perspective.

Collected data shows is that a distinct majority of persons who wear yellow robes as monks/novices in this area are young. The native monks/novices account for quite a large portion of both monks and novices, but there are a number of them who have migrated from other provinces. Moreover, the degree of diversity in birthplace is a little bit larger in the case of novices, than the case of monks. Information scientists have helped to construct several images and figures from collected data and these can show the effectiveness of visualization technology of information science. The ordination experiences in terms of the life histories of monks/ novices, is shown in chart 1.

The chart shows the actual trends in ordination patterns in recent Cambodia as expressed in the life-stories of individuals as well as rural communities and gives us much more information than a mere description or statistical number. Paying attention to the influences of warfare and totalitarian/socialist rule in the country in the 1970s and the 1980s is essential for studying Cambodian society. In the chart, the blank period for ordination experience, showed in white, tells us that there were no monks/novices during the Pol Pot period. We learned of this from previous interviews, but the chart shows this fact in a much more visually persuasive way.

With help from the information scientists we were able to examine the question of who decides to be monks/novices and live in *wat*s in rural Cambodia today through a spatial approach (See Fig. 1). We created a map that includes the birth village of all monks and novices in the area. The red marks show the position of villages that produced a number of monks/novices, while blue ones represent villages that have not produced them. The size of those marks corresponds to the number of monks/novices born in the villages. This figure represents the base map showing what village produces what kinds of monks and novices in the area. What is clear is that there is a visible tendency for blue marks to concentrate in the vicinity of the provincial capital and the National Highway. This helps us understand that remote villages where poor households forma majority produce a much larger number of monks/novices. Adding various information such as geo-
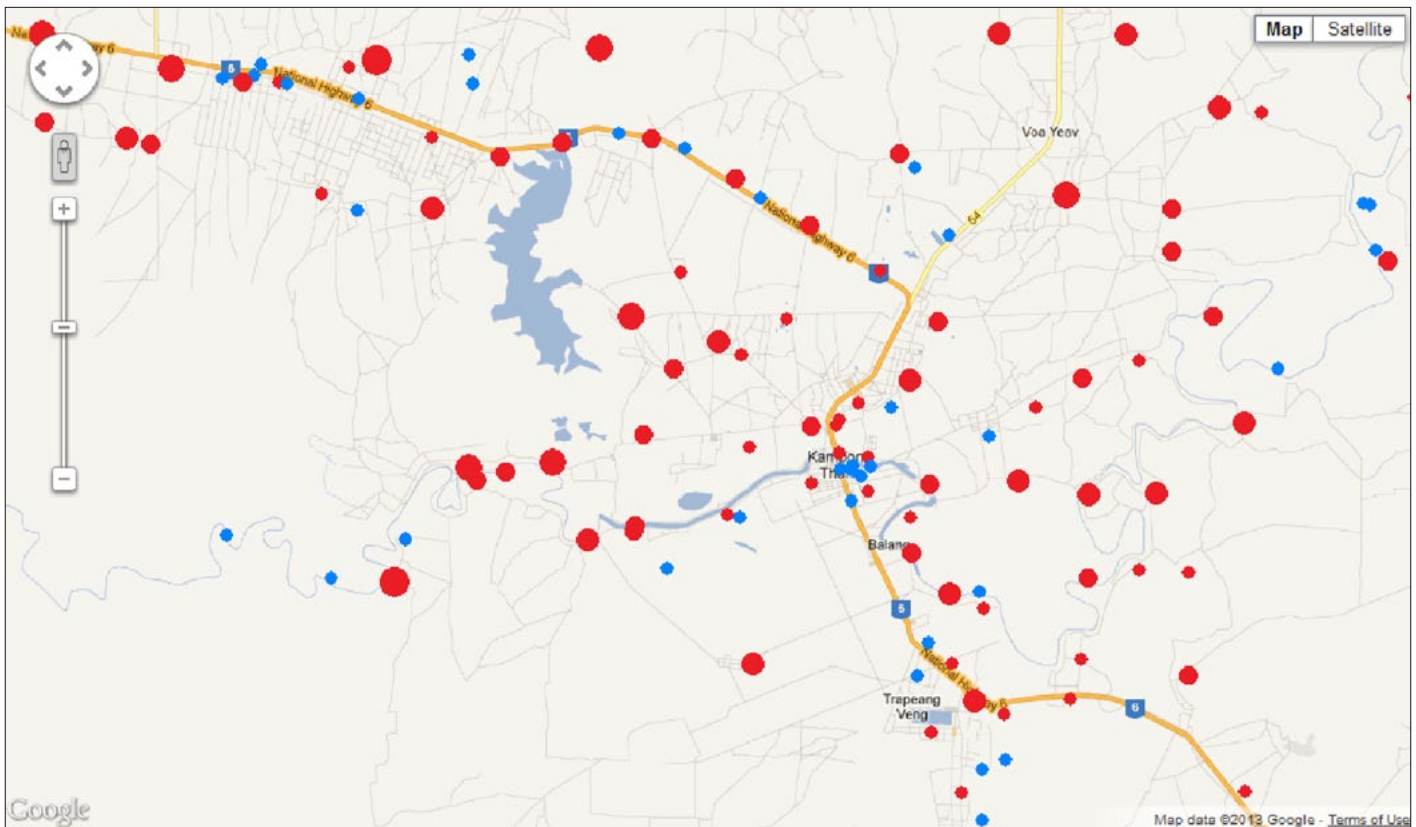
Fig. 1: Spatial distribution of birth villages of monks. Red marks show the position of villages that produced a number of monks. Blue represents villages that have not produced monks. Size indicates number of monks born in villages.

graphical features, land usage, school attendance, household incomes, distances to a main road and so on, to the base map will open further possibilities for analyzing and answering the question of what kind of village has produced a large number of monks/novices. The analysis will very likely show that the transformations in living conditions in the villages in semi-urbanized areas will result in the rise of the education continuance rate and may be negatively correlated with the number of monks/novices produced there.

For Time-space Analysis of Living Culture

'Area Informatics' will become an important and viable analytical method to research society and culture. However, it will require area studies researchers to overthrow pre-existing understandings, not only stereotypes, but also things that appear obvious to specialists and the subsequent quantification of everything related with the object of study. This quantification has a potential constructive effect for breaking through the impasse that exists in area studies: one that wholly depends on qualitative interpretations. As made clear in this essay, the numbers of monks/novices in Cambodia began to decrease from a peak of 2004. But ordination practices are embedded in Cambodian society, so a simplistic perspective will not lead to any meaningful conclusion. Researchers must employ multiple viewpoints; both micro and macro; actor-oriented and system-oriented; and from the perspective of practice and institution and policy. The cross-checking of two or more data sets through 'Area Informatics' will be a future method that will help

us understand the complexities of Southeast Asian societies and contribute to potentially rewarding meta- analyses of the region as a whole.

References

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Note

[1] See "Number of monks dropping nationwide" in The Nation published on March 26, 2009. http://www.nationmultimedia.com/2009/03/26/national/national_30098855.php