Mapping Heritage: A Participatory Technique for Identifying Tangible and Intangible Cultural Heritage

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Abstract: Community participation is increasingly considered a key to success in many conservation and development related projects. Among the advantages are the ability to obtain a more accurate understanding of the needs of the community, an improved ability to adapt the project to meet local conditions, and an improved spirit of cooperation both within the community itself and between the community and outside stakeholders. Participatory mapping is a relatively new technique that provides an especially effective method for a community to identify and communicate the resources and values they deem important. While participatory mapping has thus far been used most frequently in natural resource management and indigenous land rights applications, it has clear applicability to cultural heritage management applications as well. This paper describes the process of participatory mapping and its potential role in improving the inclusivity of heritage management. An overview of a recently completed project in Fiji and a description of forthcoming research at the Luang Prabang World Heritage Site in Laos are provided.

Introduction

A SIGNIFICANT PHILOSOPHICAL shift has occurred within the field of heritage studies. This shift is at least partly motivated by the desire of many heritage researchers to move past the object-oriented approach that has dominated the field throughout much of its existence (Blake, 2000). Instead of focusing solely upon the 'portable works of art and architectural monuments' that have traditionally embodied 'cultural property' (Brown, 2005), a new emphasis is being placed on the broad collection of tangible and intangible features that enable a more holistic understanding of cultural heritage. The recognition that heritage, "cannot be reduced to an inventory of objects without marginalizing its most important features," (Brown, 2005: p. 41) has led to a concerted effort on the part of researchers to seek out a better understanding of traditional knowledge and folklore, and even the landscape in which the culture exists (Selman, 2004; Mire, 2007).

A parallel philosophical shift involves the increased focus upon community participation on the part of cultural heritage managers (Smith, *et al.*, 2003). Certainly, the movement away from purely object-oriented interpretation and preservation of cultural heritage is a significant motivation for this shift. Heritage managers increasingly recognize the difficulty in identifying, understanding and protecting heritage features without the input of its cultural owners, particularly when the feature is intangible in nature. Mire (2007) provides an example of this reality in her study of heritage management in Somalia. Somali culture places greater value in the knowledge underlying the creation of an object than on the object itself, thus she finds that sustainable management of Somali heritage resources is dependent upon the inclusion of local perspectives, knowledge systems and management techniques.

There are other forces behind the movement towards increased community participation in cultural heritage management. Post-colonial societies seeking to transform the methods of cultural preservation and representation utilized by their former European governors often rely upon community participation and collaboration to achieve their goals (Galla, 2002). The rise of the globalized society and the related increase of cultural and individual mobility, having eroded, "the oral traditions and local knowledge that once supported a sense of place," demand more active ownership on the part of remaining cultural members to ensure the viability of preservation efforts (Hodges and Watson, 2000). Recognition that friction among stakeholders over the use of heritage features and places and disagreement about past and present meanings of heritage features and places can make cultural heritage management an exercise in conflict management, which often leads to the use of participatory methods of conflict resolution (Smith *et al.,* 2003).

Perhaps the most fundamental motivation for making heritage management a more inclusive, participatory process is rooted in the acknowledgement that good governance efforts are greatly enhanced

by the fair and equal participation of all stakeholders (Arnstein, 1969; Chambers, 1997). Participation enhances access to and ensures greater transparency in the decision-making process in both local governance and resource management (Nabwire and Nyabenge, 2006). UNESCO has increasingly adopted this perspective in recent years and thus, as a premier heritage management agency, has taken a lead role in incorporating community participation into heritage management. Leask and Fyall (2006), for example, note that the agency has made a concerted effort in recent years to expand the definition of "stakeholders" in World Heritage Site management beyond government officials and conservation experts. Indeed, the 2008 revision of UNESCO's Operational Guidelines for the Implementation of the World Heritage Convention explicitly recognizes the need for local participation in heritage management with the addition of a fifth organizational strategic objective: "Enhance the role of communities in the implementation of the *World Heritage Convention"* (UNESCO, 2008).

The advantages of community participation are manifold. Among these are the ability to obtain a more accurate understanding of the needs of the community, an improved ability to adapt the project to meet local conditions, and an improved spirit of cooperation both within the community itself and between the community and outside stakeholders. Participatory projects are often found to be more efficient, cost-effective, and sustainable than projects undertaken without a community participation component (Oakley, 1991). Where applied to cultural heritage management situations, participatory practices have resulted in the generation of more creative solutions to management problems, stronger relationships between management experts and target communities, wider popular support for heritage management initiatives, and a reduction in vandalism and other security risks to heritage resources (Grimwade and Carter, 2000; Ahmed, 2006).

A number of techniques have been developed to encourage community participation in research and management initiatives. One of the newest and most effective is known as participatory mapping (Rambaldi *et al.,* 2006a). Participatory mapping simply involves the community creation of a map to identify and communicate important resources and values. Thus far, this technique has been adopted mainly within the community development, indigenous rights, and natural resources management communities; there is strong evidence, however, that participatory mapping can be a highly effective tool in cultural heritage management applications as well. This paper describes the process of participatory mapping, in particular a method known as Participatory 3-Dimensional Modeling (P3DM), as it might be applied

to cultural heritage management situations. Recent work using this technique in Fiji is described, as is forthcoming work at the Town of Luang Prabang World Heritage Site in Laos. The goal of this analysis is to further awaken the cultural heritage management community to the possibilities of participatory mapping while providing a realistic view of its advantages and limitations.

Participatory Mapping Defined

Maps have long played a critical role in the distribution of resources and the allocation of power. The efficiency and artfulness with which maps communicate information give maps – and mapmakers – a great deal of influence (Godlewska, 1997) and by extension, make maps an important component in the assertion of power (O'Sullivan, 2006). Participatory mapping is an emerging practice that seeks to transfer some of this power into the hands of local communities as a way of promoting their active involvement in their own governance and in the management of their resources (Abbot *et al.*, 1998; Rambaldi *et al.*, 2006a). The central tenet is that the community owns the map, dictates what is mapped, and uses the map for their own advocacy.

The practice of community mapping has evolved from the use of the Participatory Rural Appraisal (PRA) techniques that have become a prominent part of many ethnographic studies in the past forty years (Chambers, 2007). The collaborative creation of detailed maps of local communities and environments started to occur in the late 1980s and by the latter half of the 1990s, advanced geo-spatial technologies became incorporated in the process (Rambaldi *et al.*, 2006a). Today, participatory mapping can range from simple sketch maps to large 3-Dimensional (relief) models to complex, multi-layered Geographic Information System (GIS) outputs. Participatory mapping is now an important aspect of the broad, worldwide application of PRA in community development and resource management, though it is only one component of many and remains the niche of a small group of practitioners (Chambers, 2007).

The spatial nature of many community development and resource management problems makes mapping a natural choice when participatory approaches are needed. Maps provide a straightforward means of communicating complex information, and are often the most effective way to depict the relationships between people and their surrounding landscape (Rambaldi *et al.,* 2006b). In cultural heritage management applications, this characteristic can be highly beneficial. The relationship between people and their natural landscape represents a core component of a culture's heritage. The names used to describe features, the ways in which people access and utilize resources, and the ways in which people or-

ganize themselves within their landscape all say a great deal about the culture they inhabit.

Mapping offers other advantages over more traditional participatory practices. It is a highly effective technique when such obstacles to participation as illiteracy or language barriers between the community and outside stakeholders are present. Both of these are common scenarios in heritage management, especially in the rural developing world. Easily distinguishable symbols that vary in color, shape, size, and texture eliminate the need for complex written descriptions when discerning between different types of features. Participatory mapping activities have also proven to be a particularly effective technique for facilitating cooperation among multiple community members. The very act of capturing detailed local knowledge about all of the areas represented on a given map requires the input of the people who live, work, and play in each portion of that map (Flavelle, 2002). Stated simply, everyone has expert knowledge about their own personal part of the landscape.

Participatory mapping is not without its own potential weaknesses, among them questions about who actually participates in community settings where an equal voice in local governance may be lacking for some groups (Abbot *et al.*, 1998; Chambers, 2006), concerns that the exercise might unbalance long-standing political power structures within a community (Kyem, 2004; Chambers, 2006) and worry that confidential community information shared in a participatory process may be broadcast inappropriately (McCall, 2004). All of these issues must be carefully addressed in the planning of any participatory mapping activity, and as a result, there has been significant discussion about ethical participatory mapping practices over the past decade (Abbot *et al.,* 1998; Rambaldi *et al.,* 2006c).

Effective Participatory Mapping Methods

Participatory mapping practitioners have developed a range of methods that allow for different levels of sophistication in the spatial cognition of community members, different levels of access to technology on the part of communities and project facilitators, and differences in the overall complexity of the management situation. The simplest method is *ephemeral mapping*, which entails little more than the drawing of maps on the ground and the use of natural items such as leaves, pebbles, and sticks to represent different features of the landscape. *Sketch mapping* takes the process to paper but maintains simplicity by avoiding strict adherence to map scales and precise georeferencing (using a coordinate system to represent the exact location of a feature on the earth's surface). *Scale mapping* does adhere to map scales and

georeferencing which allows for easier comparisons to other maps, though this technique can require a somewhat higher level of cartographic experience. *Photomaps* are made on printouts of spatially-accurate, georeferenced aerial (or high resolution satellite) photographs. The information visible on the photograph can greatly aid the accuracy and completeness of the community-made map, however good photographs can be difficult to find and/or may be prohibitively expensive (Corbett *et al.,* 2006).

Participatory mapping can also utilize advanced geospatial technologies such as *Global Position Systems (GPS)* and *Geographic Information Systems (GIS)*. GPS is the satellite-based system that allows features to be located on a global coordinate system such as latitude and longitude with a high level of accuracy. While high-quality GPS units are increasingly affordable, their effective use requires practice and thus a greater investment in training time may be required if they are to be broadly used during a participatory mapping exercise. In many cases, GPS is used to supplement other mapping methods for features whose positional accuracy is especially important (such as boundary demarcations).

Geographic Information Systems (GIS) are a set of software-based tools that provide a highly efficient means to manage and display spatial information. Data obtained via the simpler mapping techniques describe above are often converted into electronic format and incorporated into a GIS system so that they can be compared with existing spatial data, subjected to a variety of spatial analysis techniques, and displayed in high-quality map outputs. GIS is an excellent tool for identifying complex relationships within spatial data, relationships that may not be otherwise easily recognizable. GIS typically requires a significant investment in software, computer hardware, and most importantly, advanced training in its use. As a result, most uses of GIS in participatory mapping applications incorporate (or originate from) organizations with existing GIS skills and infrastructure. Indeed, Participatory GIS (PGIS) and Public Participation GIS (PPGIS) are 'emergent practices' that specifically seek to apply GIS technologies to locally-driven community development situations (Rambaldi, *et al.,* 2006a). It is important to note, however, that while GIS may be the preferred tool to analyze the *results* of a participatory mapping exercise, it need not be used *during* the actual participatory mapping process undertaken within a given community.

Participatory 3-Dimensional Modeling (P3DM) is a technique that offers a good balance between the need to incorporate a great quantity of information with a high degree of spatial accuracy while avoiding the need to rely upon advanced technologies and individuals with extensive cartographic experience.

Developed within the past decade, the technique has been used almost exclusively in natural resource management and indigenous land rights applications. Recently, however, P3DM was introduced in a cultural heritage management endeavor in Fiji, and the results from this exercise suggest that it could be effectively utilized in this field, as well.

Giacomo Rambaldi, a leading P3DM expert and one of the first lead facilitators during the Fiji project, describes the technique as follows:

> Participatory 3-D Modeling integrates people's knowledge and spatial information (contour lines) to produce stand-alone scale relief models that have proved to be user-friendly and relatively accurate data storage and analysis devices and at the same time excellent communication media (2002, p. 1-2).

The fundamental idea behind P3DM is that most people, especially those without training in maps and map-reading, have greater success undertaking a mapping activity when they can see the area in question in all three dimensions rather than by using two dimensional planimetric or topographic maps or aerial/satellite photographs. By providing a "bird's eye view" of their local landscape, it is easy for people to visualize the location of specific features and their relationships and to represent them using simple tools such as pins, yarn, and paint. Depending on its size (often a meter or more per side), a 3-D model allows groups of people to work simultaneously, which enhances the sense of collaboration between participants and ultimately results in a more accurate, detailed map.

While P3DM doesn't require high-tech tools and extensive training, it does require a fairly significant amount of preparatory work and the workshops themselves are typically multi-day affairs. In general, the steps associated with P3DM are as follows:

1. Identify the study area, solicit representatives from all potential stakeholder groups, and build strong institutional support for the workshop.
2. Construct the blank 3-D relief model of the study area using simple supplies such as plywood and carton board.
3. Engage participants to develop a simple but complete map key that associates real-world features with the simple symbols used for their representation on the model.
4. Facilitate participants' depiction of their local spatial knowledge on the blank model (also known as 'transposing mental maps').
5. Abstract data from the model so that it may be utilized by external entities such as government agencies, heritage management experts, and intergovernmental/non-governmental organizations.
6. Officially transfer ownership of the finished model from workshop facilitators to the community.
7. Synthesize data abstracted from the model with other spatial and non-spatial data relevant to the resource management problem.
8. Field-verify critical features identified on the model by participants.

Participatory 3-Dimensional Modeling: Guiding Principles and Applications, produced by the Association of Southeast Asian Nations (ASEAN) Regional Centre for Biodiversity Conservation, provides a detailed, step-by-step description of P3DM best practices and is an excellent resource for anyone considering a participatory mapping exercise as part of their heritage management work; see Rambaldi and Callosa-Tarr, (2002).

Participatory Mapping and Cultural Heritage in Practice

In 2005, the Fijian island of Ovalau was selected as a pilot project for the introduction of P3DM in the South Pacific region. Home to approximately 8600 people scattered amongst 27 villages, Ovalau's singular ecological and cultural heritage make it a potential World Heritage Site and thus an ideal case study (Rambaldi, *et al.,* 2006b). The participatory mapping workshop was designed to contribute local knowledge to the development of the Ovalau Resource Management Plan. Though the specific goal of the project was to, "support community-based biodiversity conservation as the basis for ensuring food security and sustainable livelihoods," (Rupeni, *et al.,* 2005: pg. 8) specific provision was made for the identification of both tangible and intangible cultural heritage values.

Once the 3-D model of the Ovalau was created, participants were invited to complete 'mental transects' in which paths were "walked" across the virtual island using a stick, with relevant information about the natural and cultural landscape discussed and documented along the way. Rambaldi, *et al.* describes the mapping of specific cultural heritage assets:

> On the mental transect walks, participants described cultural heritage sites including old villages and fortifications, hunting caves and fields, old burial grounds, and natural features associated with historic events, myths and rituals. They also mentioned less location-specific legends associated with resource management practices (2006b: 31).

The entire Ovalau P3DM exercise lasted eleven days, five of which were spent in the 'transposing mental maps' phase. In total, 82 community participants representing 24 of the island's villages contributed to the map, which ultimately depicted 79 natural features and 83 'places of cultural heritage significance' (Rambaldi, *et al.,* 2006b). That so many cultural features were identified is significant and illustrative of the value of participatory mapping in heritage management; Rupeni, *et al.,* note that only 30 prehistoric sites had previously been documented by the Fiji Museum. The new cultural heritage knowledge produced during the course of the workshop, "offer[s] the residents of Ovalau Island a unique chance to document both [the] content and distribution of the island's intangible cultural heritage" (Rupeni, *et al.,* 2005, pg. 35).

A similar workshop has been proposed by the author of this paper for the Town of Luang Prabang World Heritage Site in Laos. UNESCO describes Luang Prabang as, "an outstanding example of the fusion of traditional architecture and Lao urban structures with those built by the European colonial authorities in the 19th and 20th centuries." Built upon the banks of the Mekong River, the town is the country's second largest and one of its most popular tourist destinations. Inscribed in 1995, the World Heritage Site includes not only Luang Prabang itself, but also an area surrounding the village of Ban Xieng Mene on the opposite river bank.

Because there are no bridges across the Mekong, Ban Xieng Mene has heretofore avoided the tourism development that has occurred in Luang Prabang. The village sits between a pair of forested hills and is home to several Buddhist temples and other features of cultural and historical significance. As international tourist visits to Luang Prabang rapidly increase (from approximately 20,000 in 1995 to over 130,000 in 2005, with continued high rates of growth expected for the foreseeable future), tourism and development pressure is starting to occur in Ban Xieng Mene. While tourism is a key component of the local economy, the development that accompanies it is often inappropriate and damaging to heritage resources. Of particular concern to Ban Xieng Mene is proposed urban development in the valley immediately west of the village, which would radically alter the quiet, rural character of the community.

In response to the threats from inappropriate development, population growth, and over-visitation potentially facing Ban Xieng Mene (and the World Heritage Site as a whole), UNESCO and other stakeholder agencies have proposed a series of steps to identify and preserve the heritage values of the community. In keeping with UNESCO's directive to emphasize community participation in heritage site management, a participatory mapping workshop will be a central component of this effort. The key objectives of the workshop are to identify the cultural heritage resources of Ban Xieng Mene, to empower the community to manage these resources sustainably, and to develop an appropriate, sustainable tourism economy based on these heritage resources.

P3DM is seen as the preferred mapping technique for Ban Xieng Mene for a number of reasons. The hills that rise above the village are an essential part of its identity and thus a 3-D model of the local landscape is likely to be the most effective means for residents to visualize and describe their knowledge of heritage features. Most residents live an agrarian, subsistence lifestyle and are not likely to have had much previous interaction with maps and mapping techniques. Access to technology is limited and simple tools are required while at the same time the knowledge that can be obtained from the community is expected to be both extensive and complex. Finally, collaboration and consensus between residents are seen by external stakeholders as essential prerequisites for any successful project in the community. (Note: the participatory mapping workshop was initially planned for July of 2008; however it has been postponed due to administrative difficulties on the part of several external stakeholders. The community is very eager to get the project under way and it is hoped that the necessary institutional support will be in place in the near future).

Final Considerations

Participatory mapping potentially offers an inclusive means by which the community can catalog its heritage resources and determine their value. Accomplishing these goals is an important first step in the preservation and sustainable development of those resources for their (and our) benefit. These techniques, P3DM in particular, can assist heritage experts in obtaining a more holistic understanding of cultural heritage while expanding opportunities for cultural members to participate in their own heritage management. Communicating local knowledge on a map is a logical process for most humans and may be the only efficient way of transferring such knowledge when illiteracy and/or language differences create obstacles to communication between local residents and outside experts. And, as Rambaldi, *et al.* describes, "the three-dimensional nature of relief models enhances discovery learning through sensorial (visual and tactile) experiences. This stimulates confrontational feedback which in turn promotes debate and learning," (2006b, pg. 32).

The process described here relies on careful planning and strong community and institutional support. When these characteristics are present, the likelihood of success is great. When they are absent, the likeli-

hood of failure is almost certain. Enough P3DM exercises have been undertaken in support of indigenous rights and natural resources management applications to clearly demonstrate that the technique works. All indications suggest that the same will be true for cultural heritage management as well. The next step, then, is for an increasing number of heritage experts to utilize this technique in their own cultural heritage projects and for the results of these mapping exercises, whether successful or not, to be broadcast throughout the field. In this way, P3DM (and inclusive heritage management as a whole) can be continually refined so that it meets the needs of everyone concerned with preserving and interpreting their – our – cultural heritage.

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Jeff La Frenierre is currently a graduate student in the Department of Geography at the University of Denver. His research centers on the use of maps and mapping techniques in rural community development in Southeast Asia. Jeff has provided GIS (Geographic Information Systems) analysis for the UNESCO Office of the Regional Advisor for Culture in Asia and the Pacific in Bangkok, Thailand, in support for a proposed World Heritage Site at the Plain of Jars, Lao PDR and, as a member of Engineers Without Borders, has participated in community water development projects in Lao PDR, Thailand, and Ecuador. He is currently investigating the burden of fetching water and ways of mapping the human energy expenditure associated with fetching water in order to better define whether a community has reasonable access to improved water sources.