

Andrea F. Schuman

Center for Scientific and Social Studies NOT FOR CITATION WITHOUT PERMISSION  
ctriples@aol.com

## **Punctuated Ethnography: Using Social Time to Plot Fieldwork Plans**

### **Abstract**

Time is a problem for ethnographic work, especially for those researchers who have academic responsibilities. Researchers may have multiple projects and other duties concurrently, making long term ethnography difficult to realize. There are alternatives, however. This paper illustrates, through the description of a project in process, how periodic (“punctuated”) fieldwork can be structured to capture the essence of social processes without long term residence in the community of interest. This method relies on the researcher’s sufficient understanding of the setting to plot a fieldwork schedule that coincides with important points in the social time(s) of the community.

Through presentation of research in the southern Mexican state of Quintana Roo, the strategy of punctuated ethnography is exemplified. The overarching concern of the project is socio ecological conflict. Relying on fieldwork periods conforming to the social time(s) of the actors, a methodological approach economical in its use of researcher time and faithful to the lived experience of the participants is developed.

**Key words:** ethnography, social time, socio ecological conflict

This paper takes as its central task the description of a robust methodological approach to a prospective longitudinal ethnographic study of a defined phenomenon of interest (socio ecological conflict) located in a defined spatiotemporal field (Southeastern Mexico). The approach is adaptable to other problems, spaces and places, consisting mainly in strategies to overcome the barriers to extended ethnographic work (time, money, other commitments) while preserving methodological rigor. Finding ways to overcome the reluctance of funding agencies to support long term projects in this neoliberal era that stresses cost effectiveness and efficiency above all measures of quality is critical to social scientists using these approaches.

The paper begins with discussion of important concepts and analytical frameworks that guide the author's work in this area, which are necessary for understanding the genesis of the methodological approach and for situating the study.

## **Conceptual Framework**

### **The socio ecological standpoint**

The socio ecological perspective involves analysis of interactions within social systems embedded in bio-geo-physical systems, a highly complex task that seeks to transcend the dualism of the person/nature opposition that has shaped western attitudes toward the physical environment. Examples of these attitudes may be seen in the instrumental view of nature as “natural resources” to be used to further human aims and in the frequent use of the term “opening up” in reference to the American westward expansion, which radically changed land use practices of Native Americans through the imposition of European practices and preferences (and the near extermination of the natives). Some authors note that this perspective has been derived from the Bible: Genesis 1:26 appears to give “man” dominion over “all the earth” (White, 1967, 1974; McKibben, 1990). Other authors locate the problem of the separation (and implied superiority) of human life from all that surrounds it in Cartesian dualism, expressed simply as the separation of mind and body, the spiritual and the material (Ibarra Garcia, 2016). Here the material world is “object” that the rational mind (“subject”) can manipulate and seek to control.

While a comparative analysis of different worldviews describing the relationship between humans and nature is outside of the scope of this paper, a brief look at indigenous American thought is pertinent because of the location of this study in Southeastern Mexico, in an area where Maya culture remains strong. Indigenous perspectives recognize that humanity is rooted in the natural world, dependent on all its components and in constant interaction with them. The concept of “buen vivir” (or “vivir bien”) grows out of indigenous Andean Aymara and Quechua thought and signifies, in capsule form, living well, in plenitude and harmony with other people and with nature (“El ser humano es tierra

que anda.” A human being is earth that walks. Huanacuni, 2010).<sup>1</sup> Both Ecuador and Bolivia and have included “living well” as a societal goal in their recently ratified constitutions (2008 and 2009, respectively). The Ecuadorian Constitution specifically grants rights to nature, the only Constitution in the world to do so (Gudynas, 2011).

North American native peoples also share many of these ways of experiencing the world, in contrast to Western notions, as the historian John Grim reminds us: “Native religious concerns connecting personal and social health to the well-being of non-human life have no parallel in Christianity” (2001, p. 115). This brief discussion is by no means comprehensive, but serves rather to provide “signposts” for further reading and to introduce relevant background. (For further detail, see Schuman and Cordova Dominguez, 2016, Choquehuanca, 2012, Acosta, 2010.)

Recent theoretical conceptualizations of the human-environment nexus frequently employ the frame of “social metabolism,” which the Mexican ethno-ecologist Victor Toledo attributes to Karl Marx in its first usage (Toledo, 2013). This term refers to the ways in which social life interacts with the environment, forming a totality, primarily through the exchange of materials and energy (Martinez-Alier, 2009). This interaction is iterative, with five phases: appropriation, transformation, circulation, consumption and excretion (the return of the remains of the item or process to nature). These processes take place in specific times and spaces, and can be studied at different temporal and spatial scales (historical/national, seasonal/city, annual /farm, for example). Clearly, the intensity of each of these stages will also differ: a campesino harvesting fruit from the forest (“appropriation”) for personal use (“consumption”) or to sell in the local market (“circulation”) will leave behind (“excrete”) much less potentially damaging waste than an industrialized farm producing sorghum as one ingredient to be ground for animal feed (“transformation”), which depends on high levels of pesticide and chemical fertilizer use (leaving harmful excretions).

Other relevant dimensions of ecosystem analysis are what are usually called “ecosystem services” (formerly environmental services). The Millennium Assessment

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<sup>1</sup> This is a phrase taken from a song by the indigenous Argentine singer who adopted the name Atahualpa Yupanqui (1908-1992).

Reports (MAR), sponsored by the United Nations and developed between 2001 and 2005 by more than 1,300 “experts” worldwide, synthesize the knowledge then available about ecosystem services and their relation to human wellbeing. While retaining the dualistic stance in describing human/ecosystem interaction and implying, through the use of the word “services,” that human concerns are central and that these services can be monetized, like any other service, this schema is useful when thinking in a reciprocal mode.

Summarizing the discussion of ecosystem services in the MAR, at the base of the operation of the other three are “supporting services.” These include such processes as water cycling, photosynthesis, biomass production and nutrient cycling. Provisioning services include aspects of an ecosystem that provide usable resources for living beings, such as food, fibre, fresh water and fuel. Regulating services affect a wide variety of processes, and include waste disposal and water treatment, climate regulation and pollination. Finally, cultural services important to people that relate to ecosystems include aesthetic aspects of landscapes and spiritual importance ascribed to landscape features, the recreational possibilities of different natural areas and the generation of knowledge systems based in particular ecological communities. These are explanatory examples and are certainly not exhaustive. They can function as diagnostic categories in attempts at remediation or provide anticipatory guidance about likely outcomes when change is contemplated, and they serve as interpretive frames for the study described here.

### **The Phenomenon of Interest**

In Latin America, socio ecological conflict is present from the northern Mexican border to the Southern Cone. These conflicts occur when changes in an ecosystem result in degradation, intruding on the population in interaction with this system through alterations, restrictions, and prohibitions affecting their lifeways and livelihoods. Commonly, these degrading changes are brought about by the incursion of extractive industries (mining, oil and gas), industrial agriculture and tourism or real estate development, as well as other infrastructure development, such as large dams, wind farms or highway construction. These may affect the quality and quantity of water, the use and quality of the land and the maintenance of livelihood strategies of the residents of the territory in question. For

communities that are largely self-sufficient through their relationship with resources within their territories, these invasions may signal total destruction.

Many instances of socio-ecological conflict begin when different levels of intensity and scale begin to inhabit neighboring territories, or when the need of capital for new strategies of accumulation involve a change in the scalar properties of a territory. This later process often generates conflict, as the more powerful interests of capital (aided by the neoliberal state) overwhelm those of the inhabitants of the territory and its prior uses. The mechanisms for this are many, including expropriation, subversion of community cohesion, displacement through material and symbolic destruction, the privatization and mercantilization of public goods and violation of human rights, including incarceration, “disappearance” or assassination of peaceful protestors. The geographer David Harvey has written of “accumulation by dispossession” (2004), which he sees as the dominant characteristic of capitalism today; these strategies would provide examples of this type of accumulation, in the identification and appropriation of new opportunities to “put to work” an accumulation of capital with few outlets in the previously dominant areas of investment.

### **Context of the Study**

The municipality<sup>2</sup> that is the focus of this research, which is on-going at the time of this writing, is located in the southern part of the Mexican state of Quintana Roo near the border with Belize. At the northern coastal point of the state is the resort city of Cancun, which garners more income than any other Mexican tourist development (up to one fourth of the total, according to Padilla, 2015). Since the carving of Cancun from sparsely populated jungle in the 1970’s, tourism development has steadily crept down the coast, with considerable negative impact on socio ecological systems (Padilla, 2015; Vargas Martínez, Castillo Nechar and Viesca González, 2013). These impacts include the serious deterioration of the lagoon system Nichupté (in the center of the original hotel zone of Cancun) as a result of black water discharge, garbage dumping and forest fires (Conanp, 2015). Continuing down the coast, in 2015 Playa del Carmen had three of the six most contaminated beaches in Mexico (El Expreso, 4/7/15) and at the time of this writing the bay

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<sup>2</sup> “municipio” in Mexico is akin to a county in the US, made up of a “cabecera” or head locality and multiple “comisarias” or residential localities of various sizes

of Akumal was experiencing high levels of contamination and associated algal blooms. Hyper-development, inadequate policies and disregard of rules that do exist by governments, developers and property owners is at the root of this situation, resulting in multiple examples of what many have called “ecocide.” (Hossay, 2006; Toledo, 2015).

Originally founded in prehispanic times by the Maya Itzaes, the municipality of Bacalar became independent of Othón P. Blanco, home of the state’s capital, Chetumal, in 2011. Within the boundaries of Bacalar are varied ecological configurations and various human adaptations to them. The administrative center is the city of Bacalar, with about 11,000 residents. The rest of the territory is made up of 57 rural settlements ranging from a few families to an upper limit of 2500 people. Total population in 2015 was registered as 39,111, in an area of approximately 7 thousand square kilometres (INEGI, 2015).

Bacalar is a municipality divided, with its center dominated by the tourism industry organized around the lagoon. It has been designated a “Pueblo Mágico” under a federal government program, which entitles it to receive funds to improve municipal infrastructure and image. The principal attraction is the lagoon itself, which is known as the “Lagoon of the Seven Colors,” because of the changing tonalities of the water in different locations and at different times of the day. At 42 kilometers long and only 4 kilometers wide at the widest point, the lagoon is one of a very few fresh water bodies on the surface of the Yucatán Peninsula. It is fed by several large subterranean sinkholes known in the peninsula as “cenotes.” The area has no large tourist developments and depends on small hotels and cabins to house visitors; it also receives day trippers from Chetumal and other more tourist intensive areas.

The lagoon and its surroundings have considerable scientific importance. The municipality is home to part of the “Selva Maya,” (Mayan jungle), the second largest (after Amazonia) extension of tropical forest in the world (Perera, 1993). It encompasses parts of Chiapas, the Guatemalan Peten, Campeche, Quintana Roo and Belize. The lagoon itself is one of the few places in the world where living stromatolites exist, and these are of exceptional size and form (Gischler, Gibson, and Oschmann 2008). Stromatolites are a form of microbiolite that represent the earliest known form of life on Earth. The University of Surrey in the United Kingdom is monitoring the health of the wetlands between the

lagoon and the Bay of Chetumal by satellite, considering the area in need of “...immediate intervention to preserve its important ecosystem” (Eurekalert, 2015). Data from this effort will also support the pending RAMSAR (International Convention on Wetlands) application submitted by the Mexican government for this area.

Rural areas of the municipality are primarily agricultural, with small stores and eateries and artisanal production of embroidered goods and other handicrafts providing options for employment. The area is particularly interesting because of the variety of origins of its population. Until its 1974 recognition as a state, Quintana Roo was a very thinly populated federal territory. In order to attract the necessary numbers to petition for statehood, the administration offered land in the form of communal ejido grants to people from other states, who usually came in groups that settled together. Apart from the Maya people occupying the region for centuries, if not millennia, there were people from nearby Yucatan, Campeche and Tabasco as well as from relatively distant Michoacan, all looking to improve their lot in part through the much larger land grants given in Quintana Roo than in other states (C. Manuel Chi Lopez, personal communication, 2015). Later immigration into what is now the Bacalar municipality came in the form of Guatemalan refugees in the 1980’s, who were relocated by the Mexican government from Chiapas, where they had fled from violence in their own country. Most are now naturalized Mexican citizens. Most recently, groups of Mennonites from Belize and northern Mexico have acquired land in the area. This cultural diversity manifests itself in agricultural practices as well as in almost every other sphere of life.

### **Methodological Antecedents**

The methodology developed for the study described here has perhaps its deepest roots in the Chicago School of sociology (roughly 1917-1945). Those researchers (for example, Robert Park, Edward Hughes, Lewis Wirth) sought to make sense of the “natural ecology” of an urban environment undergoing rapid change, and sought to do so through becoming part of (experiencing) a range of physical locations and social addresses within that urban geography. Their generation of ecological models and descriptions of social worlds resonates today in the work of many contemporary social scientists concerned with

socio ecological conflicts and their just resolution; with the possibility of a reversion of corporate driven consumerism and its destructive devouring of resources and with many other aspects of the multifaceted crisis now facing the planet. The Chicago School (or what is often described by this name) used the words “ecology” and “ecological” in regard to human action as a simile, however. As Roderick McKenzie stated: “The human community may be considered as an ecological product, that is, as the outcome of competitive and accommodative processes which gives spatial and temporal distribution to human aggregations and cultural achievements” (1925). As described previously in this paper, the ecological approach to understanding “the human community” has evolved past similes to become an operational method that takes into account transactions between different aspects of a socio ecological system. This research, while not employing a strict audit approach as some environmental economists do, considers the different ways in which “human aggregations” interact with each other and with the material environment to be an important focus of analysis.

Other US American sociologists who have worked with concepts central to the methodology employed in this study are Sorokin and Merton, whose early paper (1937) on “social time” (as opposed to astronomical or calendrical time) remains highly relevant. “The need for social collaboration is at the root of social systems of time” (p. 615). Earlier (1912), Durkheim proposed that the concept of time itself derives from the “rhythm of collective life” (p. 19, note 2). An activity based phenomenon, social time is social motion. In a simplistic summary of the concept of social time, we can say that it is how we experience our everyday lives, patterned by the rhythms of recurrent activities that, though we can relate them to clock time or calendrical time, take precedence in our consciousness over these formal, agreed upon conventions. Social time is lived in collectivities, although the individuals that form them may not share the same physical space at any given moment. For the individual, the two dimensions of time most relevant to the formation of self-concept and agency are epochal time, the recognition of one’s place in a grand historical narrative, and temporality, which allows us to keep in mind the past, present and future at one time, taking experience of the past and projecting it through the present to affect the shape of the future.

Among the Latin American social scientists who have influenced the design of this study is the Colombian sociologist Orlando Fals Borda (1925-2008). Fals Borda worked from the beginning of his career as a researcher to close the gap between researcher and “researched,” and is considered one of the founders of Participatory Action Research (IAP in Spanish- Investigación Acción Participativa). His work sought not only to understand the challenges of the popular sectors in Colombia, but to bring this understanding to action with affected people to change concrete situations. In his approach to engaging with people of different class and social backgrounds and material circumstances, as well as in his analysis strategies, he aimed to be “thinking-feeling” (sentipensante). This orientation anticipates current efforts to develop “epistemologies of the South” (Santos, 2009) and intercultural dialogue in general.

The Uruguayan socio ecologist Eduardo Gudynas has been a consistent and insistent voice over the last thirty years for a reconceptualization of the relationship between humankind and the natural environment. He has done extensive work on the concept of “buen vivir” and the possibilities for the realization of the visions that make up this complex concept (2015, 2011 and many others). He is as well a persistent voice opposing the “neo extractivism” prevalent in Latin America, the return to reliance on export of primary products as the major economic strategy of many governments in the region. His work informs many aspects of this project.

## **Punctuated Ethnography**

### **Preparation**

**Site identification and document review.** A researcher who has an interest in ethnographic study, with its primary methods of observation and participant observation (being with) and both informal and more structured types of interviews (in dialog with), has to commit to extensive fieldwork in the community of interest. In the case of this study, I had an interest in a particular phenomenon of importance in Latin America: socio ecological conflict. The occurrence of these disturbances, which have been defined above, has increased since the advent of neoliberal globalization and the growth of transnational corporations (Renfrew, 2011, Escobar, 2006). My interest went (and continues to go) beyond observing and classifying, to accompanying and acting with community members.

In this instance, then, the first task was to identify a locality likely to experience these types of conflicts and to work out a rationale for their study, as it was not practical for me to relocate for an extended period of time.

Through involvement in prior and on-going projects, I had become familiar with the formal Mexican planning process and the documents laying out plans and goals, particularly those concerning the Mexican south/southeast (SSE, comprising a mesoregion made up of two primary administrative regions). This mesoregion had become of particular interest to the Mexican government at the beginning of the “sexenio” (six year term- 2000-2006) of Vicente Fox, who announced the multinational Plan Puebla Panama, intended to aid in the development of nine Mexican states and the neighboring seven Central American nations into a block that could attract investment for growth. This plan accomplished little and quietly transformed into the Project for Mesoamerican Integration and Development, with a focus on infrastructure development in telecommunications, transport and oil and gas related installations.

Within Mexico itself, the planning process begins with a new President’s term, with the development of the National Development Plan. From that, and adhering to its values and goals, comes a cascade of sectoral, regional, state and local plans that are to guide government action for the six year term.

In my study of the Regional Plan for the Development of the South/Southeast, which has the stated aim of reducing disparities between the region and other regions of the country, especially in areas of health, education and income, I read of the plan to develop “new tourism poles,” including the area around the Laguna Bacalar. With the knowledge that mass tourism development had already sparked conflict in other parts of the peninsula, this was the impetus for my initial visit to the area to assess its potential as a site for the project I had in mind.

**Assessment visit.** In May 2015 I made the 4 to 5 hour trip from my home to Laguna Bacalar, accompanied by a friend who is not a social scientist. We planned a typical tourist experience, getting to know the region, taking a boat ride on the lagoon to see some of its unusual natural features, swimming both from the hotel dock and from the boat, and trying a range of local restaurants. Additionally, I had conversations and a semi

structured interview with some of the men giving tours on the water and their supervisor. It was not a particularly busy time of the tourist calendar, but we noticed and spoke informally with some international visitors. We also noticed some tell-tale agglomerations of bubbles at the shoreline every evening when the wind picked up, although nobody wanted to hear the word “pollution.” We were told by several local people that it was “natural.”

Returning home from this four-day visit, I reviewed my notes and found sufficient evidence of conflicting opinions, what appeared to be hiding of known problems and segmentation of the community that I decided to pursue an investigation into the dynamics of the region. Although we did not visit rural communities on this trip, I knew that the municipality was part of a geographic belt along the southern part of the peninsula, running through Yucatán, Campeche and Quintana Roo, that was home to the largest Mayan speaking population in Mexico. The municipality was part of the region where the rebellious Maya took refuge during and after the Caste War (1847-1901).<sup>3</sup> Knowing of both likely and already existent tensions and conflicts of interest made this a region I considered prone to socio ecological conflict.

### **Developing the research plan**

The plan called for a prospective study, as the elements of conflict were at that time emergent. The objective was not to try to provide a coherent multifaceted reading of a particular culture, as ethnography traditionally has been employed, but to develop a focused ethnography, proceeding from sensitizing questions as a guide for entry into the field. These sensitizing questions were akin to those any thoughtful person would have on entering a new socio ecological system with a particular interest in mind: What relationships exist in this field between the diverse groups of people inhabiting it? How are decisions made about matters that affect the group and its subgroups? What livelihood strategies do people pursue? How do these affect local ecologies and how do local ecologies limit or enrich these strategies?

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<sup>3</sup> The Caste War is the name given to the Maya uprising against the hegemonic European and European descended people that lasted more than a half century, with outbreaks and attacks continuing into the 1930's. At one point, the United Kingdom officially recognized the independent Maya state.

With these concerns in mind, I made a second visit in July of 2015 to begin fieldwork in earnest. Two key contacts that continue to be consultants/informants were made. The Municipal Ecologist was helpful in orienting me to the municipal territory and discussing current issues. The owner of the small hotel where I continue to stay is a rich source of information, as she has lived in the town for most of her life and, as she says "...my grandfather came from Belize and was one of the founders of Bacalar..." During this fieldwork period I also made my first visit to a rural community in the municipality, where the people and their descendants were immigrants from other states and were primarily engaged in cattle raising or other animal husbandry (pigs, tropical "hairless" sheep, chickens).

It was on my return to deskwork after this visit that I realized the divergences between the tourism dependent part of the municipality and the agricultural region were so strong as to make them virtually separate territories, with different and perhaps conflicting priorities, concerns, expectations and aspirations. I did not want to narrow the focus to the region of the lagoon, as the entire municipality has the potential to be affected by decisions made at the local, state and federal governmental levels and by the implantation of mega developments conceived by entrepreneurs with close relationships within these governmental structures.

The concept of social time, with its potential for uncovering separate but entwined logics for the two sectors, began to guide my thinking. Fieldwork would necessarily be intermittent, but it would be steered by the internal rhythms of each of the two sectors, as well as the patterned interactions between them. This provides a template for fieldwork periods based on the lived experience of the inhabitants of the municipality. Apart from the emblematic moments, I would program fieldwork twice a year at ordinary times, one emphasizing the routines of each sector. As in any qualitative study, these plans are subject to modification arising from findings generated by the ongoing data analysis and experiences in the field

### **Document Reviews**

As mentioned above, the Mexican planning process is a top down one, generating reams of paper from the federal to the local levels. I reviewed and analysed what appeared

to be the relevant ones from the national level, the meso regional, regional, state and local levels, paying especially close attention to goals related to agriculture and tourism. The most directly relevant were the Regional Plan for the Development of the South/Southeast, drawn up by the Secretariat of Agricultural, Territorial and Urban Development (SEDATU, by its initials in Spanish) and the Sectoral Program for Diversification and Comprehensive Development of Tourism of the state of Quintana Roo. Because each new government draws up its own plans, and the governor of Quintana Roo will be replaced in October 2016, it was possible to assess, to some extent, the progress toward meeting goals of this latter plan.

On-going document review has included twice weekly internet searches of the major news sources covering the state and of alternative news sources. As much of the media in Mexico is controlled by the leading political parties, alternative sources can be enlightening. The purpose of this monitoring strategy has not been to find the “truth,” but to keep abreast of issues of concern and the variety of ways of framing them in the communities of interest.

### **Plotting Fieldwork Times**

Following the logic of social time(s) as patterned, recurring activities of human collectivities, we can identify the relative importance of these in terms of the fulfilment of basic human needs, using either a survival criterion or a broader one that uses self-actualization dimensions as well (Max-Neef, 1993 [1986]), Maslow, 1968). In this study I use livelihood strategies as a stand-in for basic human needs, as it is the dynamic form of their fulfilment (or not), and then define periods of critical activity for the tourist dependent and agriculture dependent sectors of the municipality. The word “agriculture” is used here to represent the range of subsistence activities engaged in by rural residents, in the absence of a single word in English that subsumes these practices (conventional plant based agriculture, milpa production,<sup>4</sup> animal husbandry, beekeeping and the harvest of forest products). Additionally, I have identified important cultural/spiritual activities that take place annually in each sector, such as Carnival in February and the Fiesta Patronal de San

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<sup>4</sup> *Milpa* denotes the agricultural practices of indigenous Mexican groups in which corn is the principal crop, with a variety of other edibles intercropped, such as squash and beans.

Joaquín in August in the tourism sector and the annual seed swap of native maize varieties and the ch'a cháak, the ceremony summoning the rain in the rural sector. These periods of heightened activity punctuate the year for the residents of the municipality and define the fieldwork calendar. In this way critical periods are observed and experienced, documented in field notes and followed up with purposive conversation or semi structured interviews. All of this becomes text for analysis.

### **Current state of the project**

As of this writing (August 2016), the project has been operating for 15 months. During this time, five fieldwork visits of four to six days have taken place, allowing for observation and interviewing of people in both the tourist sector and the agricultural sector. The first visit after the assessment of suitability for investigating the phenomenon of interest was focused on cementing relationships with key informants (consolidating access to relevant sites and people) and getting to know the territory. This took place during the summer school vacation period in 2015, a point of heightened activity for the tourism sector. At this time of the year, it was also possible to discuss the prospects for the corn harvest with milpa farmers, as traditionally corn is sown in May and harvested in August. The next visit took place in October, with a focus on observing technical assistance provision by the state to cattle ranchers, and also on an emerging conflict between a group founded by wealthier property owners and the state over administrative issues. In 2016, fieldwork has taken place in March and June, the first during the two week “Semana Santa” vacation break, one of the peak tourist periods for the lagoon and the second in June, to visit four small settlements that exemplify aspects of the rural livelihood strategies and cultural diversity of the municipality: extensive mechanized agriculture using chemical fertilizer and pesticides (Mennonites), beekeeping by organic standards (Maya), the “village of cooperatives” developed by the former Guatemalan refugees and the home village of the regional collection of creole corn (maíz criollo), the native varieties improved only by farm site collection by the grower.

## **Emerging Conflicts**

**Lagoon Region- Property rights and pollution.** Early in the study, the residents in the lagoon region were informed that the administration of the area was transferred to the Port Authority of Quintana Roo. The implications of this are still unclear, as regulations have not been released. Those most concerned were property holders on the shore of the lagoon, who feared there would be onerous taxes imposed. A pressure group was formed to try to protect the interests of this group, but its activities have been minimal recently as no new information has been disseminated and no changes have been implemented. It is not clear how this situation will affect ecosystem services or the social metabolism of the lagoon region, but it is clear that some of these properties are heavy contributors to the pollution of the lagoon, through inadequate waste disposal capacities (constituting, quite literally, excretions).

**Lagoon tourism.** The use of motorized launches to carry visitors to view the natural features of the lagoon increases greatly during peak periods for the region. This is generally due to incursions of outsiders. During the Semana Santa (Easter) visit, I saw three trailers capable of hauling six launches each, parked by the side of the road, empty. The addition of twenty-four motorized vehicles, in addition to the jet skis of wealthier visitors and part time residents, increases greatly both discharge of gasoline into the lagoon and air pollution. When interviewed on a non-peak day, the resident operators indicated a desire to obtain less polluting motors for their fleet, but lacked resources to do so completely. They also said they resented the appropriation of their means of subsistence by outsiders with no incentive to engage in ecologically sound practices.

**Genetically modified crops- Agricultural Region.** Beekeeping is the key livelihood strategy for many in the Maya communities. Buyers come from various places within Mexico and from the US and the European Union. Buyers from the EU, who pay the most, have to follow the EU policy of zero tolerance for evidence of pollen from genetically modified plants, which are supposedly outlawed in all but two Mexican states. Nevertheless, researchers at a nearby institution of higher education detected GMO crops in some of the Mennonite fields (Villanueva Gutierrez et al, 2014). Aside from the potential

harm to marketability of virtually their only source of cash, Maya farmers generally have very negative views on GMO foods, believing they will kill people who eat them.

The cultivation of GM soybeans leads to other problems. Large monocrop fields necessitate the clearing of forest and threaten wildlife and native plants through the disturbance or destruction of previously established ecosystems. Mennonite farmers have cleared forest to implant their extensive fields, to the point where several men were actually jailed after judicial process, a rare event for an environmental crime in the state.

This activity represents an appropriation of common resources without restitution (neither to the forest nor to neighbors) of regulating ecological services. Further, the use of GMO seeds directly threatens the livelihoods of Maya beekeepers, threatening their ability to meet basic needs.

**Development- Municipality as a whole.** Official tourism plans at all levels, from federal to regional to state, call for a diversification of tourism offerings beyond the dominant Mexican model of “sun and sand.” The development plans at the meso-regional and state levels follow this, while promoting (but not defining) “sustainable” tourism. Options such as adventure tourism are mentioned. The Municipality of Bacalar is explicitly identified as a new pole for development. This is without a doubt the greatest threat to this socio ecological system, which is probably still amenable to remediation without growth. As the current problems will demand sizeable investments to correct, new investment will likely come from the private sector, which has not shown responsibility in caring for the human or the natural aspects of the socio ecosystem of Quintana Roo. Additionally, the outgoing state government has left the residents with a large burden of debt.

People who have been dispossessed of their lands are generally poorly compensated and opportunities for employment in the tourism sector for them are poorly remunerated. Extra-legal strategies for implementing mega-developments are well practiced in the state, and the ties between political actors and entrepreneurs are close. The determination of current residents to defend their territorial integrity, livelihoods and values will undoubtedly lead to more visible clashes of interests in the future.

## **Conclusion**

The organizational plan that is at the base of this methodological proposal- punctuated ethnography- respects the complexity of temporalities at play in the municipality, not only in each of its sectors (lagoon and agricultural) but within each of them as well. The plan results in an economical use of researcher time and funding, and, with my continuing participation, the variety of temporal rhythms characterizing different social processes will become apparent through the analytic strategies adopted, which in turn are shaped by the emerging data. Knowledge of the historical trajectory of the region and participation in key events of its ever moving present, in a reflexive, “thinking-feeling” attitude, can help me to work with the residents to envision and enact a viable future for this socio ecological complex.

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