As an ethnologist, taking the Santo 2006 expedition as a subject of study was an excellent opportunity to penetrate the core of some of the major contemporary scientific, political and economic challenges linked to the exploration and conservation of biological diversity. It also gave me the chance to examine several new research ideas from an ethno-anthropological standpoint.

The conservation of biodiversity and its scientific exploration were new for me and I had never performed any field studies in this research area. At the time, my vision of this theme was narrow and limited and grounded only on what I had read. My position was that of an ethnologist landing on unchartered shores, albeit Parisian and in spite of the fact that I travelled by high-speed train and underground network rather than in a dugout canoe.

In order to study the 2006 Santo expedition at the invitation of Philippe Bouchet back in March 2005, I made several methodological choices that I was never entirely satisfied with. However, the subject of my study did not lend itself easily to ethnography owing to the way it spread out in space and time. The Santo expedition involved networks of individuals, institutions and objects, scattered across many different countries and progressively woven around a joint objective: to establish a biodiversity inventory for the island of Santo. It took close to two years to set up the expedition. The preparation work entailed discussions, meetings, lunches, e-mail exchanges, the writing of various texts (statements of intent, preliminary project description, project description, etc.), telephone calls, trips, ground-breaking missions to Vanuatu, etc. The question facing me was how to apply ethnography to such a multitude of individual events. This was obviously impossible. I therefore decided to follow, record and transcribe the following events:

- The ten preparatory meetings taking place between April 2005 and June 2006;
- Two post-expedition meetings;
- Seven interviews with the expedition’s organisers and staff in charge of Corporate Affairs Development at the French Natural History Museum in 2005;
- Informal discussions with the members of the expedition’s steering committee;
- An eight-day ground-breaking mission carried out by Philippe Bouchet and Hervé Le Guyader in Vanuatu in October/November 2005;
- Two of the expedition’s modules over a four-week period: the Marine module, and a small group of three entomologists and a botanist from the Forests Mountains and Rivers module.

Finally, I was allowed access to all of Philippe Bouchet’s e-mail exchanges in 2005 concerning the setting up of the expedition. All of this provided me with some extremely rich, although disparate, material. Furthermore, the decision to systematically record and transcribe the meetings proved to be very time-consuming. However, proceeding somewhat like an entomologist collecting whatever insects may come across her path, being unsure which group or family to specialise in, I collected all kinds of ethnographic data before I could actually decide upon a specific research topic. I first had to build up a general culture and understanding of this naturalist expedition, along with its challenges, objectives, operating conditions and various other dimensions (scientific, legal, political, financial, logistical, etc.).

The main difficulty facing ethnologists when they commence work in a new research field is that of defining the actual topic, in other words picking the “right questions” to explore. As Olivier Schwartz points out in his paper “L’empirisme irréductible” (Postface to Nels Anderson’s Le Hobo; Nathan, 1993):

“But what do you look out for when there is too much material, or it seems too “common” at first glance to be able to get anything from it? As we all know, the official epistemological tradition has a ready-made answer to this question: you can’t have good observation if you don’t first define the subject, if you don’t establish a corpus of hypotheses all converging towards a problem to be explored. Of course, we can disagree and say that such a model does not tie in with a real ethnographic situation. Whoever decides to embark on a study of this kind does not do so from scratch, but it’s quite possible for the initial questioning to be extremely confused, and even remain so for quite some time. The first objective of the study is not to answer questions but to discover the questions to be explored and this simple discovery operation requires time: time to understand where, in the
I thus explored several research ideas at the same time and have briefly summed these up below:

- The links between science and money and more especially between scientific exploration of biodiversity and corporate foundation sponsoring;
- The links between science and politics, with a particular focus on the profession of biologist in the international context of the post Convention on Biological Diversity;
- The building of scientific knowledge on biological diversity.

The Santo 2006 expedition questions the links between sciences and societies, and does so in an international context where access to biodiversity and the sharing of the benefits stemming from its use were profoundly modified by the Convention on Biological Diversity signed in 1992. Owing to its size, the expedition went some way to laying bare certain social dynamics and some of the imbrications that are ever present in scientific research but less visible in small-scale field work.

The first, but by no means the least, of these imbrications are those between science and money. The fact that the expedition was mostly financed by private funds is interesting in itself for several reasons. The privatisation of financing for such a scientific expedition does not point to a lack of means in French public research but more to the priorities of this research. And, clearly, in spite of the discourse held by policy-makers, the financial priorities do not lie in the exploration and knowledge of the diversity of living species.

The fact that corporate foundations were willing to sponsor an expedition like the Santo 2006 expedition reflects several trends underlying the contemporary capitalist economy:

- On the one hand, a renewed interest in philanthropy and corporate sponsorship since the early 1980s, a process that some sociologists link to the financiering of the capitalist economy since that period;
- And, on the other hand, the appearance and development of socially and environmentally responsible companies, or companies which at least claim to be so.

Lastly, the private funding of this scientific expedition did not generate any controversies over, or criticism of the scientific quality, integrity or independence of the research being carried out. In a country like France, where the link between the private and public sectors, notably in the field of research, leads to much controversy, the tranquil atmosphere surrounding the Santo expedition might be interpreted as the sign of a significant change in our relationship to money, private corporations, science and the capitalist economy. For an ethnologist, these links between private funding, scientific exploration and conservation of biodiversity represent an especially new and interesting avenue to be explored.

The second imbrication uncovered through the Santo expedition is that of science and politics. The expedition was organised by western biologists, i.e. French, in a country that gained independence in 1980 after being a French-British condominium. Furthermore, Vanuatu is considered one of the poorest on the planet (according to UN indicators, Vanuatu is listed as one of the twenty-seven “Least Advanced Countries”). These factors lend themselves to a macro-political interpretation in terms of the North’s domination over the South. This is something that it is difficult to ignore especially given that the current international context, in terms of access to biodiversity and the sharing of the benefits stemming from the use of biological resources, is tending to instil a particularly pernicious climate with respect to bioprospecting and biopiracy.

This geopolitical context means that, at worst, western biologists are suspected of coming to southern countries to pillage their biodiversity in order to draw illegal financial profit from it and, at best, of coming to study this biodiversity in order to fulfil their scientific objectives without providing the host countries and their local populations with sufficient compensation. The Santo expedition did not escape either of these suspicions.

The first criticism that emerged focused on the expedition's ethnological module and, in particular, its ethno-pharmacological and ethno-botanical objectives to study Santo inhabitants’ uses and representations of biodiversity. As the expedition was being set up, these aspects sowed confusion and put a strain on the relations between the organisers and some members of the Vanuatu government. Worried of being suspected of bioprospecting and not wishing this to jeopardise the whole naturalist expedition, the organisers decided to completely abandon the ethno-pharmacological aspects and other research questions relating to the use of biodiversity by the local populations.

Yet, this part of the expedition might have generated economic value from the island’s biodiversity, which is something that would have certainly interested Vanuatu. It would also have made it possible to go further in the famous “sharing of the benefits” stemming from the use of its genetic resources, as outlined in article 15 of the CBD. All of this
would have been possible without discrediting the integrity of Santo's scientists. However, although the Santo expedition organisers wanted to abide by the CBD down to the smallest detail, especially in terms of sharing the benefits with the host country and its local population, the monetary and non-monetary compensations offered by the expedition were judged differently by different observers.

What were these compensations?
First, there was the renovation of a ship, the *Euphrosyne*, belonging to the Vanuatu Maritime College. The restoration work accounted for 10% of the expedition's total operating budget (i.e. 105,000 €). The inhabitants of Santo and the northern islands of Vanuatu (especially Torres) should draw long-term benefits from the ship as it transports persons and goods, but also benefits in the form of training. The Maritime College promised to send annual reports to the Santo organisers to keep them informed of the *Euphrosyne's* activity.

Then there was the fairly considerable redistribution of money in the different parts of the island where the members of the expedition worked. This money was spent in exchange for guides, porters, cooks and accommodation, but also for local purchase of various products, especially food.

Finally, there was the training side of the expedition. This consisted in associating Vanuatu students with the different groups of scientists on the expedition. In the marine module, they were mainly involved in sorting activities. And with the group of entomologists and the botanist that I followed, two local students participated in the sampling work, which was mainly botany.

Some considered that the trade-offs were insufficient and that the Santo expedition should also have generated local economic development or collaborated with development professionals. For these people it would therefore seem that scientific research cannot (or can no longer) find legitimacy in the pursuance of academic scientific objectives alone. For it to be legitimate, it should also be useful socially, economically, medically, etc. For others, including myself, scientific research such as that implemented through the Santo expedition is legitimate in itself: producing knowledge about nature and/or knowledge about human culture are legitimate goals in themselves.

Finally, the third type of dynamics I wish to bring up here is specific to biological sciences, and to the extreme diversity, compartmenting and specialisation of the disciplines and knowledge produced about biological diversity. The primary objective of the Santo expedition was to produce naturalist scientific knowledge about the biodiversity compartments of this island. This objective belongs to a specific professional universe, that of biologists, even though to be fulfilled it required a plurality of commitments and social inscriptions going beyond the purely scientific sphere. To a certain extent, the Santo expedition constituted a "total social fact", in other words a complex system with multiple dimensions: political, legal, cultural, social, but also scientific, of course.

For these scientists, who are professional researchers, the living world and its diversity form the core of their work. Although the Santo expedition involved a fair number of enlightened amateurs, its objectives were embedded in professional logic specific to the scientists present. This of course entails significant differences compared with the rest of the population, differences in terms of the way biodiversity is addressed and understood, in terms of what it means and represents, and in terms of a personal commitment to a professional objective.

These professional scientists are indeed governed by logic specific to their work as taxonomists, classifiers, molecular biologists, invertebrate experts, entomologists, ecologists, etc. These disciplines follow their own operating rules and logic (such as the publication of results in specific journals with review boards), and have their own internal hierarchies, controversies, quarrels, etc. To properly describe and understand the scientific *modus operandi* of this expedition, it is thus necessary to plunge into the diversity of these biological disciplines and explore their logic.

Here again, it is the size of the expedition which, by bringing together in the same space-time over 150 researchers, so strongly and colourfully highlighted the internal splits, controversies and quarrels in biology. Indeed, for an ethnologist, the differences permeating the expedition were striking, revealing the extreme intra-specific diversity of *Homo sapiens biologicus*: invertebrate versus vertebrate experts, taxonomists versus molecular biologists; malacologists versus carcinologists; Coleoptera versus Orthoptera specialists; amateurs versus professionals; trappers versus hunters; divers versus dredge /trawl operators; fundamental researchers versus applied scientists; collective methods versus individualistic approaches, etc.

The most powerful opposition was undoubtedly between "old-fashioned taxonomists" and "trendy molecular biologists", in other words between Ancients and Moderns! The former were basically accused of being simple "stamp collectors", who were only looking to boost their figures, so to speak, in other words to collect and accumulate as many specimens and "new species for science" as possible. As for the latter, they were accused of being "young cretins", entirely incapable of recognising any species from a morphological point
of view, only interested in collecting “vulgar bits of tissues” to sequence and lacking any genuine interest in or curiosity about nature. Furthermore, their inability to recognise species made them entirely dependent on the “real taxonomists”, whom they liked to criticise so much. In spite of this reciprocal criticism, the Santo expedition actually managed to get them to work together...

These internal quarrels in biology in particular raise some interesting questions about the use of sensorial perception in the building of naturalist scientific knowledge (in the case of alpha-taxonomy) and the delegation of sophisticated technical instruments (in the case of molecular biology).

But they also point to what is considered by researchers as a major problem: the famous “Taxonomic Impediment”: “taxonomic expertise is first founded on long personal experience and accumulated knowledge”. Can we do without this first visual step in the process of building knowledge and understanding the living world? This indeed puts us before a choice of society or rather a choice of relations between science and society. Some criticise taxonomy for its social uselessness: given the alarming erosion of biodiversity, they claim that it is better to focus means and financial efforts on protecting specific spaces and specific species (strategies adopted by the main conservation NGOs, such as Conservation International with its hotspot approach, or WWF with its ecoregion approach). Others consider that this biodiversity needs to be documented before it disappears from the surface of the Earth, and hence vast collection and inventory campaigns need to be set up, like the Santo operation. For these people, it is a question of building up scientific knowledge about nature and understanding the evolution of the living world. These differences in opinion arise notably (but not only) from different conceptions of the role of science in our contemporary societies, as mentioned above; between a more utilitarian conception and a more encyclopaedic conception.

While the Santo expedition was above all designed to explore the biodiversity of the island of Santo, from an ethnological point of view it also made it possible to explore a certain number of social logics specific to our contemporary society and of which I have only briefly touched on here. In fine, the ethnography of the Santo expedition invites us to adopt an anthropological approach to thinking about the relations between nature and culture.