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Bungsud, Mäkägwaq Highlands
Mt. Mantalingahan, Palawan, 1972
[Photo by Nicole Revel]

UPDATE

AGROECOLOGY AS A PERSPECTIVE FOR THE FUTURE OF PALAWAN

Nicole Revel

Today, in the era of Anthropocene we are living in, we have started to be aware of the destruction wrought by intensive exploitation of soils. New perspectives are opening up and movements toward sustainable management practices are taking place in various parts of the world.

“Agroecology” is the name given to these new researches, attitudes and practices. It is a science more attentive to local knowledge and know-how. Innovations in agroecology could be a major shift in molding ecosystems empirically.

Since 1970, as a linguist-anthropologist, in a long-lasting collaboration with Pala’wan communities on the progressive slopes to Mount Mantalingahan, I have attempted to open access to their “lived presence in the world” (Ingold 1998) which, I think, could reveal several features of an ancient Austronesian world.

The approach I have chosen consists of biological, eco-techno symbolical, and ethical insight. A brief illustration of it is an article accessible in English on the 21st issue of the *Revue d’ethnoécologie* celebrating, in 2 volumes, the centennial of le *Journal de Botanique appliquée*, of the *Musée National d’Histoire Naturelle* (MNHN) de Paris:

Nicole Revel.

“The Pala’wan Highlanders and the World they live in:
A Weaving of Golden Threads”

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Which is also the text of my Distinguished Lecture delivered to the 40th UGAT Annual Conference, “Our interconnectedness: Doing Anthropology in a Time of Ecological Crisis”, held at Palawan State University, Puerto Princesa, Palawan, on 8-10 November 2018.

Mount Mantalingahan, which rises 2,085 meters above sea level, contains 149.193 hectares of forest, and comprises 10 percent of the totality of the main island, is the watershed of five municipalities: Quezon, Rizal, Bataraza, Brooke’s Point, Española). In 2009, with the support of Conservation International, over 120,000 hectares of this range was declared the *Mount Mantalingahan Protected Landscape*. It is the largest terrestrial protected area in the main island of Palawan.

“We live in a nature that was present before our species emerged. Humans never stop disrupting nature in order to invent it”, writes Serge Moscovici, in his *Essai sur l’histoire humaine de la nature* (1968).

It is considered that deforestation on earth began ten thousand years ago, when humans invented agriculture, planted the first cereals, domesticated animals, and became sedentary. Then, hunting and foraging stepped back, little by little.

However, in Southeast Asia, shifting cultivators were, at the same time, foragers, hunters with blowpipes, traps and snares, as are today the Pala’wan and the Batak of Northern Palawan (Novellino 2011), the Buhid of Mindoro (Gibson 2015), the Punang of Borneo (Selatto 1994) and some Orang Asli in the Malay Peninsula today (Forget et.al 2015).

In the last decades, scientific studies have revealed a new comprehension of the living organisms that coexist with us, as all species are integrated in vast ecosystems which they depend upon and where they play a specific role, each species forming a link in the food chain. However, the equilibrium in their coexistence is constantly moving as climate changes while reproduction and predation remain as everlasting process. (I refer the reader to *Chroniques du ciel et de la vie* by astro-physicist Hubert Reeves [2005:89-90])

As I have formerly shown, among the the Pala’wan, on this earth there are only ‘eaters’ and ‘eaten ones’ (Revel 1991 [Vol. II]Ch.1: *La chasse généralisée*). About the interdependence of the species and their interconnectedness, the highlanders know a lot. For them, flowers, birds, bees, and butterflies are connected in the making of honey. The loud communication between birds, monkeys, and humans, warning the hunter of the presence of a python in a tree; the spoken/sung messages between birds and humans; bird

flight trajectories as indicative ‘signals’ (*pägingdanan*) and ‘omens’, (*ngasa*), are perceived as addresses to the ‘genuine humans’, (*taw banar*), all these animals’ signals regulate their daily life. Reciprocally, people imitate the voices of the phenomena by music and human voice in a contemplative poetic dialogue.

Plants are associated as male versus female and are apprehended according to a kinship relationship in a given ecosystem. Other dual principles like large versus small, and hot versus cold, complement this classification, which partly presents the intense connectedness between animals, birds, insects, plants and several collective beings –*Taw* (Revel 1991[Vol I]).

Biologists and ecologists have observed that each living species modifies its environment and such activity affects the whole ecosystem in which it is integrated. The species that last, are those able to have an harmonious relationship with the other species in a given ecosystem.

The Pala’wan identify the qualities of the soils by shapes, colors, and textures, in relation to the cultivation of rice, other cereals (millet, sorghum, Job’s tears, corn), and tubers (taro, manioc, yams, sweet potatoes) as well as vegetables. They name twelve types of soils among which five are suitable for cereals and tubers which allow a yearly cycle of sustainability in relation to the alternation of the wet and the dry in a climate governed by monsoon winds.

We are now aware of the importance of biodiversity within the soil as represented by indigenous micro-organisms consisting of varied bacterias and fungi, the two main categories of micro-organisms. Tropical soils are deep and to assess the different qualities of soils is key to the highlander, and, surely, to the agronomist. For the good management of the fertility of the soil, agro-ecology has to consider the soil as a living organism, taking into account, not only, the obvious indicators above the ground - bees, ants, owls, bats, beetles - but, also, the microbial community below it.

The forest, as we know it, is the fruit of the very long-term shaping by the people who inhabit it, which includes clearing it by fire, and selecting what plants to retain, protect or conserve. Thanks to the work of prehistorians and archeologists, we know that, during the Paleolithic period, burning was already practiced in order to leave a field fallow to favor useful plants (palms and tubers in particular) and to attract animals (Xhauflair & Sémah 2015).

In tropical regions, a healthy forest needs heterogeneity. Sometimes, a bit of perturbation – a limited fire or a limited storm – can be good. Investigations in Ecology have shown that, an ecosystem is relatively stable and its capacity to recover after a trauma depends upon the intensity of the aggression:

compare, for example, with the impact of a drastic plantation of palm oil (as can be observed in the Punang area, the former rice granary of Palawan), or, a mine (as in Biron on the West coast, north of Quezon). We know that the recovery of these two places closely depends upon the number of living species present in the soil, for, they are all in a relationship of inter-dependance.

Biodiversity, agriculture, food, and health

The Pala'wan notion of '*milieu*' ('humans' lived place'), emerges out of a reciprocity between persons and their environment. The Highlanders apprehend the many threads weaving between 'all that is', the co-presence and the tight relationship between natural objects and the four collective beings, the interlocking between nature and culture, as subjectively seen and structured by the values, categories and symbols immanent to in their culture (Geertz 1973; Ingold 2003, 2000). The world the Pala'wan inhabit, think about, take care of, valorize, and love as their own – *Dunya* ', the Earth, and *Käkätangan*, the *damar* forest, in particular, were 'given by The Weaver', *bingäy ät Näs salad*, thousands of years ago (Revel 1991[Vol.II]:Ch.2&3).

In today's world, agriculture has to shift from over-production, linked to the use of fossil fuels that are incompatible with sustainable development, to a more harmonious agronomy in the various ecosystems of each bio-geographic region. The answer is local and the implementation has to remain local.

In this respect the Pala'wan ethos of non-excess in extraction, combined with the complexity of the ecosystem of an upland field or garden, *uma*, consisting of cereals-tubers-vegetables, provide us a traditional model of subsistence and food security, on a small scale, all of which, we can learn from and, perhaps, apply, on another scale or level. As a healthy forest is, in tropical regions, necessarily diverse, the swidden, which somehow reflects the complexity of a forest, clearly represents a model of fertility for agroecology.

We are now aware of the dialogue between plants and micro-organisms, whose symbiosis consists of the plants releasing sugars via their roots to attract and promote the microbial community, which, in turn, will convert insoluble nutrients into soluble ones, thereby, allowing the plants to absorb them. Without this process the plants would be starved. Thus, the role of plant distribution and the simultaneous functions of competition and cooperation between them, should be carefully observed and understood.

Agroecology can imitate nature and imagine new technologies. However an absolute mimetism of nature can be misleading. Theory and Empiricism are

to be equally valued in innovations, so that, ecological knowledge, traditional knowledge and high technology can be combined.

Ecological engineering is centered on life. It is an attempt to reconcile Humans and Nature by rehabilitating ecosystems, creating new ecosystems, setting in motion the laws that govern the organization and the dynamics of natural systems.

In order to be in a resilient milieu, it is necessary to maximize biological diversity there by using local species in their heterogeneity. In other words, 'the more diversity, the more stability'.

As human activities are quite rapid and extensive in their impact on the environment compared to other species, Luc Abbadie underlines: "We have to anticipate the consequences of our acts".¹ In order to do so, allow me to remind us of an important principle cited in the *United Nations Charter of Environment* (1994), the Precautionary Principle, that applies to innovations and their impact on the environment: to be vigilant, and to continue research in order to verify if innovations are beneficial to both humans and the environment (Reeves 2005:111-112).

According to several studies including her own, as Padma Perez has concluded: "the vision of a harmonious intertwining of the discourses and practices of agents of conservation with those of indigenous peoples and their environments" is dissolved (2018:265).

Let us think of a future where Indigenous Peoples are less vulnerable and their aspirations for a better life – better food, better health, better income – will be listened to (Altieri [1971]2002). Let us hope they will be involved in innovations at the local and the national levels. Then Indigenous People's knowledge and knowhow will contribute to a better management of natural resources in their homeland.

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Nicole Revel is Emeritus Research Director at Centre National Recherche Scientifique (CNRS). She has continually returned to do fieldwork in Palawan over the years 1970-2015. As a linguistic anthropologist, she applied Structural Analysis and Pragmatics, while following the developments of multimedia technology. She has recorded and analysed the language, knowledge of nature, worldview and oral traditions of the highlanders of Palawan, in recognition of which she was also awarded the Doctor of Philosophy in Humanities, honoris causa by the Ateneo de Manila University. Currently, she is a member of the Eco-Anthropology and Ethnobiology Unit at Musée de l'Homme (MNHN), Paris.

Email: nicole.revel@mnhn.fr