

## Chapter 8

# Towards a 'Common Logic of Procurement': Unravelling the Foraging-Farming Interface on Palawan Island (The Philippines)

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The distinction between 'pristine foragers' and 'pure horticulturists' has often overshadowed the crucial and combined role of hunting, gathering and horticulture in societies whose techno-economic standing is still perceived as ambiguous (Fox 1969; Dunn 1975; Bender 1978; Barnard 1983; Bettinger 1991; Bird-David 1992; Guddemi 1992; Ellen 1994; Spielmann & Eder 1994). After Murdock's (1967) attempt to classify human subsistence activities, terms such as hunting, foraging, gathering and collecting have been given a wide range of meanings. The last two are often used as synonymous, although collecting is generally associated with non-human primates (Teleki 1975). Commonly, analytical approaches to indigenous food-seeking practices have also focused on the pattern of procurement (technical factors) or on what they happen to yield. Attempts to label peoples' livelihood into rigid categories, often perceived as opposed to one another, have also been unconvincing. For instance, Ingold (1996b, 20) has rightly argued that collection, defined in opposition to production, 'comes to mean finding things: picking up one's supplies, as it were ready-made, from the environment'. In reality,

neither production nor collection offers an adequate conceptualization of what people are doing in their activities of livelihood. Rather, we are dealing with processes of growth, in which human beings, animals and plants come into being, each in relation to the others, within a continuous field of relationships (Ingold 1996b, 20).

On the one hand, conventional Western explanations of hunting and gathering and farming have placed emphasis on techno-economic criteria at the expense of ideology. On the other, in recent years, the study of technology and techniques (Ingold 1993a) has yielded new theories and perspectives which also argue for a reassessment of traditional subsistence practices. For instance, it has been argued that the domains of

technical and symbolic are not separate, but rather consubstantial and that, in non-industrial societies, technical relations are social (Gibson 1993; Ingold 1993a,b; Reynolds 1993). Moreover, it has been proposed that technologies, even the most sophisticated ones, involve many arbitrary decisions and choices that are not determined by direct material or physical constraints but, instead, are expression of higher-level systems of meaning within society (Lemonnier 1992). In short, technology is not just tool-use, and tool-use is not just for subsistence activities (Gell 1996).

Other attempts to interpret modes of subsistence have placed emphasis on the way in which people come to apprehend their environment through hunting-gathering and farming. Drawing on her field study on the Nayaka of India, Bird-David (1990, 189) has argued that hunter-gatherers 'view their environment as giving, and their economic system is characterized by modes of distribution and property relations that are constructed in terms of giving, as within a family'. Conversely, neighbouring horticulturists view their relationship with the environment in terms of reciprocity, as between kin, in other words 'nature' is reciprocating as an ancestor. Thus she summarizes these distinctive views in two metaphors: 'environment is parent' (the hunter-gatherers view), and 'nature is ancestor' (the cultivators' view).

As I will attempt to demonstrate in this chapter, for the Batak of Palawan (the Philippines), foraging and farming are embedded in similar modes of social exchange and deeply rooted in common foundation myths and, thus, are underlined by the same metaphysical presuppositions. In relation to this, I shall examine and compare some identifiable characteristics of tool behaviour and techniques in rice planting and honey harvesting. Specifically, I will assess the way in which techno-symbolic devices (*tabug tabug* in Batak language) – which, here, I will refer to as 'tool-signs'

– are employed by the Batak to expand communication with the mystical 'Masters of Resources', as well as to produce changes in the environment. To do so, I will look at what the Batak themselves say (i.e. their cognitive choices) about the use of certain objects in the context of rice cultivation and honey gathering. In both foraging and farming, Batak attitude is not that of somebody seeking mastery over nature, but is characterized by the necessity of keeping in constant consultation with the mystical gamekeepers and with other non-human agents who are in charge of both domesticates and wild resources, such as rice and bees. Batak have no words for 'hunter', 'farmer', 'fisherman' etc. but only generic terms referring to various food-seeking activities. Batak hunting-gathering and farming categories completely overlap with each other, especially with reference to the way in which people define different stages of rice growth. Their attempts to transfer and disseminate genetic resources apply equally to domesticates and non-domesticates; people have played a very important role in the enhancement of both foraging and farming opportunities in their own territory. In short, categories like 'foraging' and 'farming' offer an inadequate understanding of what Batak are doing in their livelihood practices: foraging and farming are part and parcel of a 'common logic of procurement' whose key notions are not 'production' *vis-à-vis* 'collection' but rather 'concentration' and 'dispersal'.

#### The Batak of Palawan

The Batak are found scattered in the north-central portion of Palawan Island, in the Philippines. They have a heterogeneous mode of food procurement, mainly centred on swidden cultivation integrated with hunting, gathering and commercial collection of non-timber forest products. My provisional census in 2005 indicates that there are only 155 individuals with two Batak parents within a population of less than 300 people, scattered in different local groups. I first visited the Batak in 1986 and, since then, have returned to Palawan fifteen times, spending a total period of seven years with them. The present study concerns the Batak living in the territorial jurisdiction of Tanabag in the north-central portion of the island, and now settled in the village of Kalakuasan. The community consists of about 30 families, and a total population of roughly 130 members. The Batak are believed to descend from the first wave of Australoid populations which crossed the land bridges connecting the Philippine Archipelago with the mainland of Asia, and who are generically labelled Negritos (Headland & Reid 1989, 46; see also Bellwood 1985, 113).

There has been much discussion as to whether Negrito populations such as the Batak, as well as other hunter-gatherers, have been able to survive, at any stage in their history, without access to cultivated food. According to Bailey *et al.* (1989, 67), hunter-gatherers are either dependent on agricultural products or occupy forest habitats that have been 'modified by shifting cultivation or invasion of introduced species'. Hence, they concluded that: 'convincing ethnographic evidence is lacking that foraging peoples lived in tropical rainforest without reliance upon their own or neighbouring peoples' cultivated foods'. Headland and Reid (1989) have also suggested that Negritos first moved into the ever-wet rainforest only after they had acquired at least seasonal access to cultivated foods. Until then, Headland (1987) maintains that Negritos most probably occupied only the margins of the rainforest, the coastal zone and more open areas of monsoon forest. As noted by Sather (1995, 231): 'Headland's thesis rests upon a view of the ever-wet rainforest as an inhospitable habitat incapable of supporting population of independent foragers'. This view has been contested by Endicott and Bellwood (1991) who use both ethnographic and archaeological data to argue that self-sufficient foraging is not only possible but has occurred both in the prehistoric past and more recently among contemporary Batak Negrito communities living in the ever-wet rainforest of the Malay peninsula (see also Endicott 1984). Also, the Bailey and Headland hypothesis does not take into account the fact that many foragers, pushed inland in recent times, also used productive habitats such as coral reefs and mangroves during much of their history. The ability to use diversified food zones, coupled with a low demography, may have allowed the ancestors of the Batak to live without reliance on cultivated food for thousands of years.

It is difficult to establish at which point in time the Batak or their ancestors moved from an economy solely devoted to hunting and gathering to a more diversified livelihood strategy that also included agriculture. Eder, drawing on previous ethnographic material (Marche 1883; Miller 1905; Venturello 1907; Warren 1964), believes that by the end of the nineteenth century the Batak had a mainly hunting and gathering economy, integrated with other peripheral activities. External migration to the Tanabag area seems to have begun around the latter part of the nineteenth century. According to Eder, by this time, many Cuyonon people had left their home island of Cuyo (northern Palawan) in search of fertile lands for rice cultivation; they 'traveled by sailboat to Palawan each January to make their swiddens on rich, virgin forest soils, returning home

in September with the newly harvested rice' (1987, 46). These migrations did not have a major impact on the Batak lifestyle but – according to Eder – it was through these contacts that people began to engage in rice farming. Thus 'a case can be made that rice may have been acquired by the Batak in the latter part of the nineteenth century' (Eder 1987, 46).

Before the 1960s, the Tanabag Batak still used lowland areas extensively. Here edible wild tubers were abundant, and there was a good availability of swidden land with fertile soil. In the coastal forest, wild pigs were easily pushed towards the sea and speared in the water. The nearby coral reefs and mangroves provided additional sources of protein. According to elders, wild honey was collected and stored for several months to support them during seasonal food-shortages. Domesticated root crops and dry swidden upland rice sustained the people during their commercial gathering of rattan and resin from *Agathis philippinensis* trees, which they bartered with non-indigenous lowlanders (Novellino 2010).

During the early 1960s, due to the increasing immigrant pressure in the coastal areas, the Batak were forced to abandon their lowland settlements and retreat into the interior. The fragmentation of the Batak population has been one of the major elements causing the progressive decline of social networks and exchange between local groups. Today, because of the lack of suitable partners, Batak are forced to inter-marry with non-Bataks. Mixed marriages and Batak assimilation into Tagbanua and Filipino settlements have all contributed to the severance of social ties, with evident repercussions on individuals' ability to organize collective actions (Novellino 2007). Today, Batak are the victims of debt bondage, patronage, land encroachment, government measures for environmental protection, culturally unsound NGO projects and various forms of exploitation.

#### Batak farming

There are six stages in the swidden cycle: underbrush cutting, felling the forest, burning the dead vegetation, planting or sowing the seeds, weeding the field and harvesting. Swiddens are burned in March at the peak of the dry season, and planting begins in April. Harvesting takes place in mid-August and often continues through October.

The conversion of forest (*talun*) into swidden (*uma*), through slash-and-burn cultivation, is certainly the most radical form of environmental modification of which the Batak are capable. The forest is believed to be the domain of a large number of *panya'en* (powerful non-human spirits; see below). Therefore,

before clearing a forest plot, various entities need to be consulted and propitiated. According to my Batak collaborators, after trees have been felled, the swidden begins to be occupied or visited by different super-human agencies. Special offerings may be performed to establish a friendly relationship with the 'newcomers'. Therefore, the replacement of forest with swiddens does not necessarily imply the transformation of an 'untamed nature' into a domestic domain (i.e. the switch from 'supernatural' to human sovereignty). On the contrary, Batak practices seem to indicate that changes in the landscape activate new patterns of interactions, since the entities inhabiting the tree canopy are different from those occupying or visiting the swiddens. However, different entities can co-habit and share overlapping domains. Ultimately, the swidden becomes imbued with all social relationships that have characterized its existence from tree felling, to cultivation and final regression to its original state (the forest).

At the time of my arrival, in the late 1980s, a considerable diversity of traditional rice landraces and other crops could still be found in Batak swiddens. Since then drastic environmental changes, the reduction of their traditional territory and adverse meteorological phenomena such as El Niño and La Niña have badly affected Batak farming practices, with declining yields per unit of land and labour. About eleven varieties of sweet potatoes, nine of *Colocasia esculenta*, seven of cassava and of domestic *Dioscorea*, three types of maize, two types of millet and sorghum were available in the Tanabag community. In addition to these, the people still planted at least nine different aromatic plants used by women for personal beautification, most of these belonging to the Lamiaceae family. Batak rice fields were intercropped with various cultivars, some of which become productive after rice harvest. *Colocasia*, *Dioscorea*, *kalabasa* (*Cucurbita maxima*), as well as ginger, *luya* in Batak (*Zingiber officinale*) would thrive particularly well at the base of stumps, dead logs and fallen tree branches, where soil has a good moisture content and is rich in ashes. Root crops were either planted after underbrush clearing before burning the field (a practice locally known as *pagara'*), or after the burning of the dead vegetation (a technique called *padalus*). Cassava was planted around the margins of the field and in the swiddens, about twenty days after rice planting. Maize and upland rice were planted almost at the same time, the former maturing in about three months. Poaceae such as *Andropogon sorghum* and *Sorghum vulgare* were planted concurrently with rice, forming individual patches across the agricultural field, or broken lines around its edges. *Setaria italica* (Italian millet) was sown at

least one week before rice. Beans and squash were harvested in the month of November until March. A few sugar cane plants (*Saccharum officinarum*) were planted at the edge of the rice field during and after rice planting, or around the swidden house, especially during the rainy months. Sweet potatoes were usually planted in the centre of the rice field or, most commonly, were introduced into the swidden after re-clearing it in October (Novellino 2007). This practice is locally known as *dab-dab*. Sweet potatoes were also harvested in December, when tree cutting begins, and represented an essential caloric intake when men were busy cutting trees for the next planting season (cf. Cadelina 1985, 69). Coconut palms, bananas, fruit trees such as papaya, leguminous plants such as *Cajanus cajan*, and *Capsicum frutescens* were also grown in suitable locations inside or around the field, or in the immediate vicinity of the swidden house.

#### Hunting and gathering

The Batak recognize and utilize at least twenty wild plant species with edible leaves, about thirty species (mainly trees), with edible fruits and eight named species of edible wild tubers such as those known in Batak as *Abagan* (*Dioscorea luzonensis*) and *Kudut* (*Dioscorea hispida*). The latter is toxic and needs to be processed before being eaten. Mushrooms represent an additional source of food, especially during the rainy season, and the people can identify at least fourteen edible species. The Batak have traditionally harvested wild palms for their edible hearts. *Calamus* spp. and *Daemonorops* spp. yield very little, but *Arenga* spp. and *Oncosperma* spp. might provide up to two to three kilos from each plant. Products like resin from *Agathis philippinensis* (*bagtik*), rattan canes (semi-woody climbers of *Calamus*, *Daemonorops* and *Korthalsia* species) and wild honey are also gathered and sold for cash.

Commonly, the Batak also hunt and forage for seven species of mammal, two species of reptile, one amphibian, fifteen or more species of fish, four molluscs, three crustaceans, more than seven types of birds, and two types of honey. Wild pig (*Sus barbatus palaivanensis*) is the preferred game. It is killed by means of spring traps, hunted with dogs and spears, hand-made guns and bow and arrows (although this hunting technique has now been abandoned). Traditional collective hunting of wild pigs (*sagbai*) has also disappeared. Fishing with hook and line and collection of fresh-water molluscs are women's activities, but stunning fish with vegetable poison involves all members of the household, and often the whole community.



Figure 8.1. A Batak approaching a beehive on a tree canopy. (Photograph: Dario Novellino.)

The most popular honey-producing bee is locally known as *putiukan* (*Apis dorsata*). *Niguan* is a smaller honeybee (probably *Apis florea* or *Apis indic*) building hives in tree trunks (see Novellino 2002). Small varieties of bees, such as *antuti*, build very small nests containing a negligible quantity of honey. The gathering of *putiukan* beehives is risky and requires considerable skill. The basic equipment consists of a rope, a smoking torch of dried leaves or of other materials, and a bush-knife. The gatherer climbs the vines encircling the trunk, until he reaches the canopy (Fig. 8.1). The bees are driven away by smoking the nest. Then the hive is cut and wrapped up in leaves, placed in a container and lowered down with a rope. The honey from the small *niguan* bees is harvested by enlarging the hole found in the tree trunk, either by means of an axe or a bush-knife. Honey collection is seasonal, and particularly productive between March and May. This period coincides with the worst months of food scarcity (the people are waiting for the new rice harvest and the cassava supply is nearly or entirely exhausted).

#### Resource management and the 'construction' of personhood

People's construction of personhood has practical bearing for Batak understanding of the perceived relationship between humans, animals and plants and, generally, for the way in which natural resources

should be managed and apprehended. Aside from humans, the qualification *taw* (person) is attributed to various superhuman agents that are being addressed by Batak in their rituals (e.g. the Master of Bees, the Master of Rice, the Master of Monitor Lizards, etc.); these and other benevolent beings such as the shamans' spirit-guides are also generally referred as *Divata*. On other occasions they are also addressed as 'grandparents' (*Apo*) and 'grandmothers' (*Bayi*). For instance, the name of the Master of Honey is *Ungaiv*; however, he is commonly addressed as *Apota* (our Grandfather). Batak also use the inclusive term *panya'en* to define all powerful non-human beings, both those which are malevolent and aggressive and those which are perceived as benevolent and helpful. All entities classified by Batak as *taw* (Masters of Animals and Plants, spirit-guides and *Divata*) are said to possess a human consciousness and, thus, the ability to interpret peoples' actions and respond to them accordingly.

Often, the Batak associate the notion of *kiaruwa* (soul/life-force) with all living things. In this case, *kiaruwa* is the vital principle enlivening plants and animals and everything seen as animate. On another level, *kiaruwa* is described as the intangible miniature of the body that retains the same features as the physical body; it is the source of consciousness, volition and agency. (In the same way for the Chewong of Malaysia the word soul, *rawai*, covers at least three meanings including the principle of life in people and animals, the principle of human thought and action – regarded as distinct from the body – and the spiritual as opposed to the physical part of the person: Howell 1989, 127). The most common Batak metaphor to describe *kiaruwa* is of a knife filling its sheath (the body). The implicit meaning here is that a sheath is only suited for one particular knife for which it is made. In the same way, the body and the soul are specific to each other, take on attributes of each other. Consciousness is a quality of the human *kiaruwa* and 'animal thinking' (*isip it ayep*) is said to be different from the conscious thinking of *taw*. Furthermore, Batak do not attribute the faculty of thinking to plants or to other 'living things' (e.g. certain stones, corals, etc.). These, however, are said to share 'vital breath' (*giinawan*) with humans and animals. As we shall see, amongst all plants, only rice has a human consciousness and it is regarded as *taw*, because, according to the Batak, it originates from a human sacrifice. In contemporary Batak society shamanism is the prerogative of male specialists known as *babalian*. Shamans contact spirits during trance, predict future events and are said to possess the gift of clairvoyance. They administer therapeutic remedies and supervise collective subsistence practices, as well as farming rituals

and other ceremonies to re-establish cosmological balance. Batak emic theories suggest that, behind their physical appearance (the body) and – at the level of the *kiaruwa* – both humans and certain non-human agents (as long as they are persons – *taw*) can simultaneously apprehend different realms, and thus share similar points of view on what each realm affords. In this respect, their role as managers of resources is of great relevance (cf. Dolmatoff 1976; Novellino 2003, 2009). Bari and Padaw are the only two shamans left and they are well respected by the Batak population.

The way in which Batak view the management of their environment is closely related to the idea that natural resources need to be constantly negotiated with those super-human beings (i.e. gamekeepers) who have control over them. To cite an example, during collective fish-stunning with a poisonous vine, a specific elder is in charge of co-ordinating all members of the fishing group (Novellino 2003). Then, certain super-human beings and various entities are invited to take part in the fishing. That same night, the shaman, accompanied by his assistants, will spend several hours on the river shores, chanting and falling into trance. During his 'out-of-body' experience, the shaman claims to be able to see the quantity and the type of fish in the river and also to establish contacts with the Masters of such resources. The shamans' landscape coincides with, but also transcends, the tangible landscape. The *kiaruwa* of the shaman can locate precious resources that the naked eye cannot detect. It flies and sees the world from above, or dives into rivers and sees the world from below. He may share a vantage point with birds and fish, and thus perceive the landscape from different perspectives. The relationships between shamans and those super-human entities in charge of certain resources is perceived by Batak as an interaction between resource managers. These resource managers are all shamans in their own right. Thus access to the most important resources (honey, wild pigs, medicinal plants, fish, rice, etc.) needs to be negotiated with them. This negotiation, on the part of the Batak, also includes offerings (*sagda*) consisting of pieces of tobacco, areca nuts, beads, etc. This is clearly explained by Pawat (a shaman assistant):

Let's say that I own an animal, I am in charge of a chicken – I mean the chicken is mine, I am the one taking care of it. If somebody likes my chicken, they must look for me, for the person in charge – they cannot just take it without asking me. It is the same for the wild pigs. We cannot just take them unless they are given to us. We should make an offering (*sagda*) to *Kiudalan* and *Napantaran*; they are the masters in charge of forest pigs.



Figure 8.2. Shamans dancing on the seashore 'to catch' the Master of Bees after his underwater journey from gunay. (Photograph: Dario Novellino.)

Interestingly enough, Batak do not necessarily attribute the exhaustion of certain resources to climatic or other external factors. Emphasis is placed, instead, on the social dynamics which have led to environmental damage. This is blamed not so much on people's inadequate technologies or destructive subsistence practices, but rather on their incapacity to maintain appropriate relationships with non-human agents, as well as with fellow community members.

#### Evidence of a 'common logic of procurement'

The Batak have a very complex and detailed mythology dealing with rice. Numerous legends trace the origin of rice way back to people's remote past. It would be hard to believe that rice is a recent introduction, especially if one considers that the Batak name and recognize about 72 landraces of upland rice, of which 44 are said to be *dati* (old) and *tunay* (original) to the area; 21 are considered relatively new, and at least seven have been acquired very recently. In addition to this, the people have a complex nomenclature related to the different stages of rice growth and its morphological characteristics. It is also notable that,

in Batak mythology, the foundation myths of honey gathering and rice planting are closely related and the presence of bees is perceived as indispensable to the maturation of rice seeds. The propitiation of a plentiful harvest, for both rice and honey, takes place at the same time in March, during a ceremony known as *lambay*. In the Batak world-view and in Batak practices, hunting-gathering and farming are not only intrinsically complementary but indivisible parts of a 'common logic of procurement' that expresses a clear contiguity between the ecological and socio-economic aspects of Batak life.

#### *The cosmology of concentration and dispersal*

*Lambay* is the most important Batak annual ceremony to enhance the dispersal of rice seeds and bees from their cosmological place of concentration, and its name is associated with the notion of dispersal. In fact, in Batak language, the word *lambay* can be translated as 'to throw away' (disperse) while *lambayan* refers to the area where the actual ceremony takes place. The *lambay* ritual starts in Mardi, when honey gathering begins, followed by the burning of the new swiddens and, successively, by the planting of rice and other

crops in April. The blossoming of *banebegan* (*Pterocymbium tinctorium*) signals the arrival of the honey season, as well as the beginning of *lambay*. The ritual is based on two cycles over two years. The first cycle lasts seven days and the second cycle, performed on the following year, lasts fourteen days. The latter is more elaborated in terms of ritual performances and the construction of ceremonial objects.

Batak envisage a kind of cyclical system in which the seasonal production of honey and rice depends upon the flow of bees and of life-forces of rice (*kiaruwd it paray*) from *gunay gunay*, a mythical location found at the edge of the Universe. The *lambay* rite centres on the idea that through 'magical' practices – involving the use of ritual objects, bodily movements, words and musical sound – both bees and rice are dispersed from the cosmological location in which they are concentrated and thus become accessible to Batak population. All these 'magical' devices are referred to by Batak as *tabug tabug*, a local notion that I have associated with the analytical concept of 'tool-signs' (Novellino 2009).

In Batak language, *epet* could be translated as 'to hold' or 'to take care of'. The superhuman entities in charge of plants, animals, stones, etc. are generally referred as *taw magepet* (literally 'persons in charge'). The effectiveness of certain *tabug tabug* objects is directly attributed to the ability of *taw magepet* to interpret them and act on them accordingly. All entities classified by Batak as *taw* are said to share the same level (quality) of consciousness and, thus, the ability to interpret the tool-signs that people make. Consciousness, in turn, is a quality of the human 'soul' or life-force (*kiaruwd*), which holds the attributes of sentience, volition and speech.

According to the Batak, at the beginning of the *lambay* ritual, the 'Master of Bees' and his children (bees) leave the *gunay gunay* and, after a long underwater journey, reach the shores of the Batak territory (Fig. 8.2). Hence *lambay* activities begin downstream. By changing ritual locations from the coast to the hinterlands, the community intends to gather together different species of bees, making sure that these will follow people through the various ritual stages and locations.

One of the most important elements of the *lambay* is the construction of the *pansa pansa*, a miniature house where *Ungaw*, the Master of Bees, and *Baybay*, the Master of Rice (perceived as husband and wife), are believed to reside during certain stages of the ritual. On the last night, before vacating the ritual area, the shaman will perform the most challenging of all trans-journeys. According to the Batak, his life-force (*kiaruwd*) will travel all the way to the *gunay gunay*



Figure 8.3. A Batak girl harvesting upland rice. (Photograph: Dario Novellino.)

and it will remain there until he enters the granary of *Baybay* to collect some rice seeds.

Before abandoning the ritual area, each participant will engage in the construction of *tabug tabug* objects named *suway suway*. These are wooden sticks to which a fibre of rattan, or a strip of bark, is tied to form a semicircle, resembling the shape of a honeycomb. *Suway suway* are tied in the immediate proximity of people's temporary forest huts and are pointed towards the uplands (i.e. those locations where people engage in honey gathering). On this occasion, each male individual will build a small torch, generally made of dried *namuan* (*Artocarpus sericicarpus*) bark and, after lighting it with a piece of burning charcoal, he will proceed to waft smoke over the *suway suway*. The smoking of the *suway suway* is perceived as analogous to the action of smoking the real beehives in the forest (during honey gathering) and, thus, has the purpose of disorienting the bees, reducing their aggressiveness and taming them. The positioning of future beehives in the forest depends on how *suway suway* are pointed towards specific locations, away from lowland competitors and towards the places where Batak intend to engage in honey gathering.



Figure 8.4. A Batak elder inserting a dibble stick into the middle of a swidden field. (Photograph: Dario Novellino.)

According to informants, the way in which *suway suway* are positioned and inserted into the ground indicates to the Master of Bees the direction in which he should disperse his children (the bees). Furthermore, the smoking of *suway suway* is an additional 'sign' that people use to inform the Master of Bees that he should make his children (the bees) tame, i.e. less aggressive towards gatherers.

Although the *lambay* ritual is centred on both honey and rice, the majority of *tabug tabug* rice-related practices take place in the swidden; germination of rice seeds and the health of rice plants are said to depend on people's ability to concentrate the life-forces (*kiaruwd*) of rice in their swiddens. *Tabug tabug* activities, carried out in the middle of the field, are believed to be beneficial to the swidden as a whole. The seeds of the first seven ears harvested are said to constitute the *fundu* (reserve-stock) of the life-forces (*kiaruwd*) of rice, and will be mixed together with the seeds stored in the granary (Fig. 8.3). This is to ensure that all future seeds will be endowed with germinating power. The life-forces of all rice varieties are believed

to be stored in the *gunay gunay* and the Master of Rice is responsible for dispersing them upon people's request. Each seed, in turn, is also endowed with its own *kiaruwd* (life-force).

The middle of the swidden field has a special significance in Batak eco-cosmology and worldview. A Batak legend, in fact, attributes the origin of rice to a human sacrifice. There are various versions of this myth. The most popular one narrates that, a long time ago, humans only planted *kalabasa* (*Cucurbita maxima*). Then, one day, during a dream, a man received the order to kill his only child. In the same dream he also received instructions to cut and disperse the blood, and the various parts of the child's body, all over the swidden field. According to the narrator, after three days, the blood, skin and flesh of the sacrificed child transformed into the different varieties of rice, as well as into other crops. In addition to the *lambay*, before planting takes place, Batak practice additional ceremonies to call back the *kiaruwa'* (life force) of the child (i.e. of rice) who was killed by his father in legendary times.<sup>1</sup>

*Tabug tabug* employed in people's farming practices are as numerous as those used in the context of hunting and gathering. For instance, just after the planting of the first seeds, a ritual dibble stick is inserted and left in the ground (Fig. 8.4). According to Leon (a now deceased community elder) 'this is to ensure that future rice plants will grow straight and strong like the dibble stick. They will produce many spikes'. The position of the dibble stick is selected for what it does to rice plants (inducing them to be straight and strong). The material to make the ritual dibble stick is also chosen for what it does to the tool (making it durable). A hard wood having a particular texture and consistency reveals what it is, by being transformed into a dibble stick. In fact, hardness is a quality of the timber, but this quality is brought into the open when the wood is cut and carved into a tool. By being transformed into a tool, the raw material exposes its properties, and thus it is believed to influence rice growth (Novellino 2009).

Another example of the way in which Batak use *tabug tabug* objects to establish communication with superhuman beings, before burning a swidden Batak may call the attention of a powerful non-human agent, the Master of the Monitor Lizards, by drawing a figure representing a monitor lizard (*bayawak*) on a flat winnowing tray (Fig. 8.5). The people claim that this is done to request wind. Katibu (a Batak in his mid-thirties) confirms that the figure on the flat winnowing tray has *tabug tabug* properties, i.e. is a tool-sign addressed to the Master of the Monitor Lizards. He says:



You make the drawing of the *baymwak* on the tray so that the leader of these animals will be encouraged to produce wind. The life-force of the Master of the Monitor Lizards will be there [to assist you]. His name is *Kanunuluan*, the powerful shaman, the one in charge of all monitor lizards. He will produce a steady wind, like the breathing of the *bnyawnk*, so that our swidden will burn well, not too fast. The Master of the Monitor Lizards will blow on your fire. Indeed, he is a powerful shaman.

Wild pigs and other common game have their own Masters. A wide array of *tabug tabug* hunting devices is employed by Batak to trap and hunt them. The Master of Wild Pigs is known as *Kiudalan*, from the word *kudnl* (fence). Generally, the Masters of Animals are described as having the same features of the species to which they belong, though they are endowed with special powers.

Many tools and items of daily use such as a backpack or bamboo tubes used for cooking fulfil strictly mundane tasks and are not necessarily attributed *tabug tabug* properties — as Ellen (1996) has cautioned, one should not assume uncritically that all technical activities necessarily imply practical social relations. Nevertheless, it is clear that *tabug tabug* objects such as the *suway suway*, the ritual dibble stick and the winnowing tray are 'polysemous objects' in which multiple qualities and meanings are 'layered and entangled together' (Tilley 2002, 28). These techno-symbolic devices (or tool-signs) are the means that people employ in their farming, foraging and hunting practices to bring about changes to their physical environment, as well as the means through which people communicate with their environment (cf. Lemonnier 1994; see also Gibson 1993; Ingold 2000; Leach 1976; Reynolds 1993). Borrowing Tambiah's (1968, 185) words, they are 'hard-worked tools for practical living'.

#### Finite resources

The ethnography presented so far suggests that, according to the Batak, resources such as rice and bees (but this applies also to wild pigs and all game, in general) are finite and prone to exhaustion (Novellino 2003). Most of my informants agree that, after being smoked, swarms will rebuild their hives on different branches. After the end of the honey season bees will return to *gunay gunay*, that is to the same cosmological location where rice seeds are also stored. The life-forces of all varieties of rice will also migrate to *gunay gunay* after the harvesting time. However, some of them will remain under the partial control of people and will, thus, be stored in their granaries. In addition to the *tabug tabug* practices described so far, the honey supply is also replenished through other shamanic practices. For instance, during the last day of *lambay*,



Figure 8.5. *The drawing of bayawak on a winnowing tray. (Photograph: Dario Novellino.)*

the two shamans will fill a small bottle with a portion of honey taken from the first harvested hive. According to the shaman Padaw, this is done '*para upeten*' (to hold) and '*para tanda'an*' (to get a signal). The honey contained in the bottle is the *fundu* (the reserve-stock), indicating the availability of this resource in the forest, and thus it allows shamans to take appropriate remedies for countering honey scarcity. If the level of honey in the bottle goes down, shamans may decide to perform additional *shamanic dances* (*tarek*) to 'add more honey' (*para magdugangan tarn*) in the environment. When dances begin, an assistant of the shaman takes a few drops of honey from the bottle, and places them in the palms of the shaman's hands. According to my informants, during trance the shaman will 'disperse' the honey in the surrounding forest. The action of dispersal is characterized by circular movements of the hands and arms carried out while dancing. According to Padaw, if there is enough honey in the bottle, there will be enough honey in the forest; a full bottle is a sign of great abundance.

In a similar way, the life-forces of rice are also perceived to be limited in number, and through witchcraft one may decide 'to steal' them from the neighbours' fields, thus attracting them to his own swidden. However, as a result, rice seeds found in the neighbour's field will either not germinate or be devoured by pests. Aside from being stored in its cosmological location, rice is also stored in people's granaries together with the seeds of the first seven ears harvested in the middle of the swidden field. The seven ears are said to represent the *fundu* (the reserve-stock) of the *kiaruwa* of rice, and this should not be used as food.

#### *Local categories and definitions*

The Batak, it is important to note, do not have any word for hunter, farmer, fisherman, etc. but only generic verbs<sup>8</sup> referring to various food-seeking activities such as *magsagiap* (searching for) and *maglugitem* (getting edible things from the forest). (NB: in my translations of Batak terms, I have compared my interpretations with the translations by Mayer & Rodda 1965.) Such terms do not specify the kind of technology employed nor the type of food that is sought. Specific food-seeking practices are also named individually (e.g. *ga'aret* (hunting for wild pigs); *magbila* (fishing with hook and line); *maglti'gu* (fishing with poisonous *magarrawa* vine); *maglebet* (honey gathering) etc.). Any attempt to freeze Batak identity into a particular 'style of livelihood' would be fraught with difficulties. The absence of categories such as 'hunter', 'farmer', 'fisherman', etc. is dependent on the idea that such activities are not social markers but rather part of a common 'mode of production' (Ellen 1994).

The 'common logic of procurement' is reflected in the overlapping of foraging and farming categories, and particularly in a number of expressions referring to rice growth. For instance, Batak do not discuss the growth of rice plants simply in morphological terms (e.g. the rice is tall, the rice is short, etc.) but in relation to the size and species of the animal that such plants could hide. The expression *pandakpan piak*, literally 'can catch a chick', refers to a particular phase of rice growth when plants are tall enough to hide a wild chick. According to one of my Batak female collaborators 'when rice is like this, you can grab the chick hidden below it, because the chick cannot see you'. Similarly, the next stage of rice growth is defined as *palebngan babuy*, literally 'causing the wild pig to bury under' and – as the same woman explained to me – 'the rice plants are now tall enough to hide a wild pig under them. So you'll be unable to see the pig'. To establish whether an animal is hidden inside the vegetation seems to be more of a hunter's concern

and yet, in this specific case, definitions related to such concerns have become a category for the classification of rice growth. The Batak traditionally do not raise domestic pigs and there is no doubt that when they refer to pigs hidden in the vegetation they are actually referring to the hunter's attempt to identify the location of wild pigs in the vegetation before shooting them with bow and arrows or throwing a spear at them.

*Inayap: the transferring and dispersal of 'domesticates' and 'non-domesticates'*

Another feature of the Batak 'common logic of procurement' is expressed through the way in which people intervene in the reproduction of both domestic and non-domesticated resources, transferring genetic material from one area to another. This is not limited to domesticated resources (rice, crops, dogs, chickens, etc.) being exchanged and donated between families and groups but also to non-domesticates (e.g. fish, fresh-water shells, and even earthworms used as fish bait). Batak intentional introduction of new breeds of dogs and chickens has led to interbreeding with animals of the same species previously raised by the community and to their dispersal amongst the various local groups. The introduction of different species and varieties of fresh-water molluscs has led to the 'concentration' of these species, at first in one particular location on the river and later in all stretches of the river. Certain varieties of fish found in the lower reaches of the river have been carried and released by the Batak in the upper reaches where none of these species had been previously found. The enhancement of certain resources (e.g. river molluscs and fish) has not only taken place near people's settlements but also in the hinterlands where Batak engage in the gathering of *Agathis* resin. An analysis of *inayap* practices suggests that Batak have actively fostered the biological diversity of both domesticated and wild resources. Those river valleys with the highest diversity of crops and foraging species are also those that have been populated by Batak local groups over long periods of time. Through the introduction of both domesticates and non-domesticates, Batak have enhanced foraging and farming opportunities in their own river valleys.

The word *inayap* can be glossed in various ways, including 'to copy', 'to imitate' and 'to borrow'. The notion of 'borrowing' is in line with the Batak concept that all resources, both domesticates and non-domesticates, are 'managed' either by humans or by super-human agents. Thus, one should be able to enter into negotiation with 'those who are in charge' before 'borrowing' the needed resource. A wild animal that has been hunted and killed is only 'borrowed',

in the sense that its life-force will ultimately return to its Master. Similarly, after rice harvesting, a certain number of rice life-forces will return to the residential abode of *Baybay* (the Master of Rice). In this respect rice is also perceived to be a 'borrowed' resource.

Cultural norms underlying *inayap* practices reflect the notion that specific individuals enter into a 'borrowing' relationship with the Masters of a certain resource. For instance, the persons responsible for having introduced shells and fish in one area are also those who should carry out the first collection/catch of the introduced species, after such animals have successfully reproduced. Before this happens, other community members should refrain from collecting them. The first collection signals the *sulang* (the end of the prohibition period) and this is done to ensure that the species introduced will become accessible to humans. The end of this period needs to be marked by the person who established the 'borrowing' relationship. Species introduced through *inayap* (either domestic or wild) are always associated with the action of those specific individuals responsible for their introduction, so the transferring of genetic resources is intrinsically linked to people's perception of the past, defining important episodes of their ethno-histories.

#### Discussion

In an interesting distinction between hunter-gatherers and farmers, Ingold argues that for hunter-gatherers tools are like words – 'they mediate relations between human subjects and the equally purposive non-human agencies with which they perceive themselves to be surrounded' (1993b, 440), whereas tools in the hands of herdsmen and farmers are used to establish various degrees of domination over the environment: they are 'instruments of control' (Ingold 1993b, 440). Such a distinction may apply to hunter-gatherers *vis-à-vis* large-scale farmers and herdsmen (e.g. those in industrialized societies), but Batak ethnography suggests that it would be quite difficult, if not impossible, to apply Ingold's distinction to small-scale societies of horticulturists and hunters-gatherers such as the Batak. The role of *tabug tabug* devices (e.g. *suway suzway*, the dibble stick, the winnowing tray, etc.) reveals that the latter cannot be situated within his epistemological distinction between 'instruments of control' and 'instruments of revelation'.<sup>2</sup> Through the use of tool-signs, Batak engage and apprehend both domestic and non-domestic resources in similar (if not identical) ways. *Tabug tabug* are perceived 'as having a material reality' (LeCron Foster 1994, 366), as apprehended through the senses (see Classen 1990; Howes 2003; Pandya

1990), and can be used to communicate with those superhuman beings in charge of both domesticates (e.g. rice) and wild resources (e.g. honey). They are a remarkable expression of the human capacity to condense different forms of sensory experiences into particular objects and to bridge the communication between human and super-human agents. In this respect, they are both technological devices and means for sensing and communicating with the world.

A plentiful harvest of honey and/or rice is perceived by the Batak to be a tangible sign that their mutual involvement with the mystical 'Masters of Resources' has been successful. One precondition for the use of certain categories of tool-signs such as the *smvay suway* and the winnowing tray is that they must be comprehensible to receivers (e.g. the Master of Bees, Master of the Monitor Lizard, etc.). Hence, receivers share with humans specific aspects of personhood, which allow them to understand what people do and what they ask for (cf. Howell 1989). Therefore Batak do not simply gather honey, hunt game and plant crops; rather they create certain conditions to enhance the favourable dispositions of various non-human agents towards them. Through their actions Batak become active agents for the promotion of an enabling environment; actions that will ensure the permanence of bees in their territory, the successful hunting of game, the germination of all crops in the swidden and people's various degrees of 'control' over selected resources.

Batak perception of the environment therefore overlaps with and incorporates some of the two metaphors proposed by Bird-David (1990): 'environment is parent' (the hunter-gatherers view) and 'nature is ancestor' (the agriculturalists' view); but it also goes beyond them. Their notion of resources being 'borrowed' from the super-human Masters is somewhat parallel to the borrowing which occurs between humans, and which imply some kind of 'kinship', 'gift-exchange' (through offerings) and 'reciprocity'. Both 'giving' and 'reciprocating' are common features of the perceived social negotiations taking place between the Batak and the Masters of Resources, leading to processes of 'concentration' and 'dispersal'. In Batak cosmology the environment is modelled after an idea of society which is itself based on the notion that humans and the majority of non-human beings, through their distinctive *kiaruwa*, are all endowed with the capacity to act as autonomous subjects with particular points of view. In fact, the notion of *kiaruwa* has introduced a distinctive perspective on the relation between person and environment (self and world): the common

denominator of many beings is not nature (physical substance) (cf. Descola 1986; Viveiros de Castro 1998) but rather this 'intangible essence' (*kiaruwa*) because of which many living entities are, and behave as, autonomous subjects. This concept is a reversal of Western ontology where nature (substance) enjoys the status of ontological supremacy and universality. For the Batak, to be and act as subject is not the sole prerogative of human beings, but is rather shared by super-humans agents and other entities holding distinctive points of view about the world.

As I emphasized at the beginning of this chapter, the human ability to communicate with animals and other entities is fully expressed when a shaman undergoes an 'out of body' experience. Behind their physical appearance (the body) and, at the level of the *kiaruwa*, both humans and certain super-human agents can simultaneously apprehend different ontological realms (the forest, the *gunay gunay*, the underwater, etc.) and thus share similar points of view on what each realm affords. When the *kiaruwa* is separated from the body, possibilities for co-apprehension increase, and humans can move and enter into dialogue with the Masters of Animals and other benevolent *panya'en* across different ontological realms. Co-apprehension, or mutual intelligibility between different species and entities, is also perceived by Batak as possible by virtue of common 'human origin' shared with certain animals and plants. Batak have several myths narrating how certain animals (e.g. a species of black snake) and plants (e.g. rice) have experienced the condition of being a human, or better, are 'ex-humans' (Viveiros de Castro 1998). This observation introduces an ontological argument which takes the form of asserting that there is no universal human ethic about the use and management of the environment. Here, the key point is that metaphysical presuppositions underlying Batak ways of apprehending the environment through hunting-gathering and farming are based on culturally specific notions of the interaction between humans, animals and mystical beings, whose incorporation in standardized categories such as production and collection would be untenable or at least problematic.

Lacking access to the cognitive schemes of Palaeolithic hunter-gatherers, we are unable to draw a parallel between the Batak 'common logic of procurement' and that of their prehistoric predecessors. However, Batak ways of dealing with rice, bees, other animals and plants appear to be pervaded by an 'anthropomorphic thinking' in Mithen's (1996, 185) sense of 'a seamless integration between social intelligence (thinking about people) and natural history

intelligence (thinking about animals)', a convergence of intelligences which he argues led the modern human mind to think about people as animals and animals as people. According to Mithen, the propensity to develop 'social relationships' with plants and animals is one of the fundamental 'pre-adaptations' of 'modern mind' which were critical to the origin of agriculture: 'in order to domesticate animals and plants, it was necessary for prehistoric minds to be able to think of them as beings with whom "social" relationships could be established' (Mithen 1996, 256). Such 'anthropomorphic thinking' is well expressed in the way in which Batak avoid making absolute distinctions between domestic and wild, viewing all animals and plants in the environment as being subject to various degrees of management. The distinction to be drawn here is between resources managed by humans on a temporary basis, and those managed by non-human entities on a permanent basis. We see this illustrated in the fact that success in rice planting and honey gathering is attributed by the Batak to their ability to establish successful negotiations with the mystical 'resource managers' or 'Masters'.

Not only is it the case that, for the Batak, categories such as domestic and wild, foraging and farming are part and parcel of unitary logic of procurement: 'production' itself is an alien notion. Notoriously, Engels referred to agriculture as a way of putting into existence (production) something which otherwise would have not existed, contrasting this activity with collection (what animals and 'primitive' people do): 'the most that the animal can achieve is to collect; man produces, he prepares the means of life ... which without him nature would not have produced' (Engels [1875] 1934, 308). This view has dominated, and continues to influence, Western thinking. Batak cosmology and practices tell us a different story: rice seeds, just like bees, are finite resources, already present in the environment and in their cosmological 'storehouses' (*gunay gunay*). For the Batak, the 'preparation of the means of life' (in Engels' words) has little to do with 'production' but depends rather on the quality of the social relationships established between people and other entities. Hunting-gathering and farming are inspired by a 'common logic of procurement' whose processes of concentration and dispersal involve different 'resource managers' (humans and super-humans) sharing 'consciousness' as a condition. In this light, is it still possible to sustain that for small-scale societies of horticulturists, foraging and farming are underlined by different metaphysical presuppositions? And where should the line be drawn between hunter-gatherers' and farmers' ideologies?

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Notes

1. There is an extensive literature on Southeast Asian notions of the sacredness of rice. Sather (1977), writing on Iban harvest rites, talks about aggregate 'souls of rice' (*semengat padi*) and of 'its animating spiritual personality'. He claims that rice is treated by the Iban with reverential respect, just like a human being. Other authors have also suggested that rice is perceived as having a life of its own, and a soul (Blagden 1897; Skeat 1900; Shaw 1911; Winstedt 1925; Hill 1951; Macdonald 1987; Endicott 1991; Revel 1990; Iskandar & Ellen 1999). The link between origin of agriculture and ritual killing is regarded by Eliade as a key feature of the mythology of many paleo-agricultural people (1964,46). Moreover, the analogy between plants and human bodies, and the correlation between sap and blood, canopy and hair, bark and skin, is common among different populations around the world. For instance, the Ankave of Papua New Guinea say that the *Areca* palm originated from the head of a decomposed body and the red pandanus from the blood of a mythical ancestor (Bonnemere 1998).
2. In a personal communication, Tim Ingold agrees with me that the distinction between tools as instruments of revelation (for hunters and gatherers) and of control (for herdsmen and farmers) is problematic, but adds: in speaking of instruments of control, I did not have in mind modern industrial agropastoralism. I was thinking of the "traditional" herding of animals like sheep, goats and reindeers, and of small-scale peasant agriculture. There is still a distinction on whether the purpose is to impose one's own intentions or to reveal the intentions of the other, but as your ethnography shows, this does not simply map onto a distinction between foraging and farming.

References

Bailey, R., G. Head, M. Jenike, B. Owen, R. Rechtman & E. Zechenter, 1989. Hunting and gathering in tropical rainforest: is it possible? *American Anthropology* 91, 59-82.

Barnard, A., 1983. Contemporary hunter-gatherers current theoretical issues in ecology and social organization. *Annual Review of Anthropology* 12,193-214.

Bellwood, P., 1985. *Prehistory of the Indo-Malaysian Archipelago*. London: Academic Press.

Bender, B., 1978. Gatherer-hunter to farmers: a social perspective. *World Archaeology* 10,204-22.

Bettinger, R.L., 1991. *Hunter-gatherers: Archaeological and Evolutionary Theory*. New York (NY): Plenum Press.

Bird-David, N., 1990. The giving environment: another perspective on the economic system of gatherer-hunters. *Current Anthropology* 31,189-96.

Bird-David, N., 1992. Beyond 'the hunting and gathering mode of subsistence': culture-sensitive observations on the Nayaka and other modern hunter-gatherers. *Man* (NS) 27,19-44.

Blagden, C.O., 1897. An account of the cultivation of rice in Malacca, *Journal of the Straits Branch of the Royal Asiatic Society* 29,1-12.

Bonnemere, P., 1998. Trees and people: some vital links: tree products and other agents in the life cycle of the Ankave-Anga of Papua New Guinea, in *The Social Life of Trees*, ed. L. Rival. Oxford: Berg, 113-31.

Cadelina, R.V., 1985. *In Time of Want and Plenty: the Batak Experience*. Dumaguete City: Silliman University.

Classen, C., 1990. Sweet colors, fragrant songs: sensory models of the Andes and the Amazon, *American Ethnologist* 17(4), 722-97.

Descola, P., 1986. *La nature domestique: symbolisme et praxis dans l'ecologie des Achuar*. Paris: Maison des Sciences de l'Homme.

Dolmatoff, R., 1976. Cosmology as ecological analysis: a view from the rain forest. *Man* (NS) 22, 307-19.

Dunn, F.L., 1975. *Rainforest Collectors and Traders: a Study of Resource Utilisation in Modern and Ancient Malaya*. (Monographs of the Malaysian Branch of the Royal Asiatic Society 5.) Kuala Lumpur: Perchetakan Mas.

Eder, J.F., 1987. *On the Road to Tribal Extinction: Depopulation, Deculturation, and Maladaptation among the Batak of the Philippines*. Berkeley (CA): University of California Press.

Eliade, M., 1964. *Shamanism: Archaic Techniques of Ecstasy*. Princeton (NJ): Princeton University Press

Ellen, R.F., 1994. Modes of subsistence: hunting gathering to agriculture and pastoralism, in *Companion Encyclopaedia of Anthropology, Humanity, Culture and Social Life*, ed. T. Ingold. London: Routledge, 197-225.

Ellen, R.F., 1996. Individual strategy and cultural regulation in Nuauulu hunting, in *Redefining Nature: Ecology, Culture and Domestication*, eds. R. Ellen & K. Fukui. Oxford: Berg, 597-635.

Endicott, K.M., 1984. The economy of the Batek of Malaysia: annual and historical perspectives. *Research in Economic Anthropology* 6, 29-52.

Endicott, K.M., 1991. *An Analysis of Malay Magic*. Singapore: Oxford University Press.

Endicott, K.M. & P. Bellwood, 1991. The possibility of independent foraging in the rain forest of Peninsular Malaysia. *Human Ecology* 19,151-86.

Engels, F., 1934. *Dialectics of Nature*. Moscow: Progress.

Fox, R., 1969. 'Professional primitives': hunters and gatherers of nuclear south Asia. *Man in India* 49,139-60.

Gell, A., 1996. Vogel's net: traps as artworks and artworks

- as traps. *Journal of Material Culture* 1, 5-28.
- Gibson, K.R., 1993. Tool use, language and social behaviour in relationship to information processing capacities, in *Tools, Language and Cognition in Human Evolution*, eds. K.R Gibson & T. Ingold. Cambridge: Cambridge University Press, 251-78.
- Guddemi, P., 1992. When horticulturists are like hunter-gatherer: the Sawiyano of Papua New Guinea. *Ethnology* 31, 303-14.
- Headland, T.N., 1987. The wild yam question: how well could independent hunter-gatherers live in a tropical rainforest ecosystem. *Human Ecology* 15,463-92.
- Headland, T.N. & L. Reid, 1989. Hunter-gatherers and their neighbours from prehistory to the present. *Current Anthropology* 30,43-51.
- Hill, A.H., 1951. Kelantan padi planting. *Journal of the Malayan Branch of the Royal Asiatic Society* 24(1), 56-76.
- Howell, S., 1989. *Society and Cosmos: Chetuong of Peninsular Malaysia*. Chicago (IL): University of Chicago Press.
- Howes, D., 2003. *Sensual Relations: Engaging the Senses in Culture and Social Theory*. Ann Arbor (MI): University of Michigan Press.
- Ingold, T., 1993a. Tools, techniques and technology, in *Tools, Language and Cognition in Human Evolution*, eds. K.R Gibson & T. Ingold. Cambridge: Cambridge University Press, 337-45.
- Ingold, T., 1993b. Tool-use, sociality and intelligence, in *Tools, Language and Cognition in Human Evolution*, eds. K.R Gibson & T. Ingold. Cambridge: Cambridge University Press, 429-45.
- Ingold, T., 1996b. Growing plants and raising animals: an anthropological perspective on domestication, in *The Origin and Spread of Agriculture and Pastoralism*, ed. D.R. Harvis. London: UCL Press, 12-24.
- Ingold, T., 2000. A circumpolar night's dream, in *The Perception of the Environment: Essays on Livelihood, Dwelling and Skill*, ed. T. Ingold. London & New York (NY): Routledge, 89-110.
- Iskandar, J. & R. Ellen, 1999. *In situ* conservation of rice landraces among the Baduy of west Java. *Journal of Ethnobiology* 19(1), 97-125.
- Leach, E.R., 1976. *Culture and Communication: the Logic by Which Symbols are Connected*, eds. J. Goody & G. Hawthorn. Cambridge: Cambridge University Press.
- LeCron Foster, M., 1994. Symbolism: the foundation of culture, in *Companion Encyclopaedia of Anthropology, Humanity, Culture and Social Life*, ed.T. Ingold. London: Routledge, 366-95.
- Lemonnier, P., 1992. *Elements for an Anthropology of Technology*. (Anthropology Paper 88.) Ann Arbor (MI): University of Michigan.
- Lemonnier, P., 1994. Introduction, in *Technological Choices: Transformation in Material Cultures since the Neolithic*, ed. P. Lemonnier. London: Routledge, 1-35.
- Macdonald, C., 1987. Le champ, le del, la mer et la maison (Philippines), in *De la voûte céleste au terroir, du jardin au foyer: mosaïque sociographique*, eds. B. Koechlin et al. Paris: Éditions de l'École des Hautes Études en Sciences Sociales, 65-79.
- Marche, A., 1970 [1883]. *Luzon and Palawan*. Manila: Filipiniana Book Guild.
- Mayer, A., & R. Rodda, 1965. *Batak-English Dictionary*. Manila: Summer Institute of Linguistics, Philippine branch.
- Miller, E.Y., 1905. *The Batak of Palawan, the Philippines*. Department of the Interior, Ethnological Survey Publication 2, 179-89.
- Mithen, S., 1996. *The Prehistory of the Mind*. London: Thames and Hudson.
- Murdock, G.P., 1967. Ethnographic atlas: a summary. *Ethnology* 6,109-236.
- Novellino, D., 2002. The relevance of myths and worldviews in Palawan classification, perceptions and management of honey bees, in *Ethnobiology and Biocultural Diversity: Proceedings of the 7th International Congress of Ethnobiology*, eds. J.R. Stepp, F.S. Wyndham & R.K. Zarger. Athens (GA): University of Georgia Press, 189-206.
- Novellino, D., 2003. Contrasting landscapes, conflicting ontologies: assessing environmental conservation on Palawan Island (the Philippines), in *Ethnographies of Conservation: Environmentalism and the Distribution of Privilege*, eds. D. Anderson & E. Berglund. London: Berghahn, 171-88.
- Novellino, D., 2007. Cycles of politics and cycles of nature: permanent crisis in the uplands of Palawan (the Philippines), in *Modern Crises and Traditional Strategies: Local Ecological Knowledge in Island Southeast Asia*, ed. R. Ellen. London & New York (NY): Berghahn, 185-219..
- Novellino, D., 2009. From impregnation to attunement: a sensory view of how magic works, *Journal of the Royal Anthropological Institute (JRAI)* (N.S.) 15, 755-76.
- Novellino, D., 2010. From indigenous customary practices to policy interventions: the ecological and socio-cultural underpinnings of the non-timber forest trade on Palawan Island, the Philippines, in *Wild Product Governance: Finding Policies that Work for Non-timber Forest Products*, eds. S.A. Laird, R.J. McLain & R.P. Wynberg. London & Washington (DC): Earthscan, 183-97.
- Pandya, V., 1990. Movement and space: Andamanese cartography. *American Ethnologist* 17(4), 775-97.
- Revel, N., 1990. *Fleurs de paroles: histoire naturelle Palawan*. Paris: Editions Peeters.
- Reynolds, P.C., 1993. The complementation theory of language and tool use, in *Tools, Language and Cognition in Human Evolution*, eds. K.R. Gibson & T. Ingold. Cambridge: Cambridge University Press, 407-27.
- Sather, C., 1977. Nanchang Padi: symbolism of Saribas Iban first rites of harvest, *Journal of the Malaysian Branch of the Royal Asiatic Society* 50(2), 150-70.
- Sather, C., 1995. Sea nomads and rainforest hunter-gatherers: foraging adaptations in the Indo-Malaysian Archipelago, in *The Austronesians: Historical and Comparative Perspectives*, eds. P. Bellwood, J.J. Fox & D. Tryon. Canberra: Department of Anthropology, The Australian National University, 229-68.
- Shaw, G.E., 1911. *Papers on Malay Subjects. Malay Industries*, part 3: *Rice Planting*. Kuala Lumpur: Federated Malay States Government Press.
- Skeat, W.W., 1900. *Malay Magic: an Introduction to the Folklore*

Towards a 'Common Logic of Procurement'

- and Popular Religion of the Malay Peninsular*. London: Macmillan.
- Spielmann, K.A. & J.F. Eder, 1994. Hunters and farmers: then and now. *Annual Review of Anthropology* 23, 303-23.
- Tambiah, S.J., 1968. The magical power of words. *Man* (N.S.) 3(2), 175-208.
- Teleki, G., 1975. Primate subsistence patterns: Collector-predators and gather-hunters. *Journal of Human Evolution* 4, 125-84.
- Tilley, C., 2002. Metaphor, materiality and interpretation, in *The Material Culture Reader*, ed. V. Buchli. Oxford: Berg, 23-55.
- Venturello, M.H., 1907. Manners and customs of the Tagbanuas and other tribes of the Island of Palawan, Philippines, trans. E.Y. Miller. *Smithsonian Miscellaneous Collections* 48, 514-58.
- Viveiros de Castro, E., 1998. Cosmological deixis and Amerindian perspectivism. *Journal of the Royal Anthropological Institute* (NS) 4, 469-88.
- Warren, C.P., 1964. *The Batak of Palawan: a Culture in Transition*. (Research Series no. 3, Philippine Studies Program.) Chicago (IL): University of Chicago.
- Winstedt, R., 1982 [1925]. *The Malay Magician*. Kuala Lumpur: Oxford University Press.