

CHAPTER 33

FEEDING STRATEGIES IN RELATION TO ENVIRONMENTAL VARIATION – BACKGROUND

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HISTORICAL BACKGROUND

From their titles alone – emphasizing, as they do, group strategies, resource management practices, ecological diversity and individual selectivity – one might consider that the chapters in this section represent a sign of progress. The days when “poor soils” (Meggers, 1954), or “low meat resources” (Steward and Faron, 1959), were blamed for the presumed sparsely settled, nomadic and socially undifferentiated nature of Amazonian societies – and by extrapolation all tropical forest societies – are long past. Carneiro (1957, 1970) must take credit for first moving away from the “a-historical” and functionalist framework of his immediate predecessors, to the recognition that marked environmental and ethnographic differences on-the-ground require direct observation and quantification. He demonstrated that the Kuikuru could not only amass considerable surpluses of manioc flour if they needed to, but could also secure a protein-rich diet through fishing if they chose to relocate.

However, Carneiro’s discussions did not end the “protein as a limiting factor” argument, nor the assumption that the natural environment is externally defined and constraining. It was again necessary for Beckerman (1979) to argue against Gross’ (1975) insistence on low protein availability by showing that a wide array of aquatic mammals, reptiles and invertebrates (besides terrestrial mammals and fishes), together with wild, cultivated and fermented vegetable protein, were available in Amazonia (see Section 3). Beckerman further cautions (1979: 553) that “contemporary Amazonian populations can tell us rather little about the economic and demographic parameters of preconquest Amazonia because a spectacular demographic disaster has intervened”. Lathrap’s (1962, 1970) pioneering archaeological work proved this point. Not only did Amazonian groups have a long

prehistory of sedentary village life, but these processes of change and development had culminated, by the time of the European conquest, in densely populated and socially stratified riverine agricultural villages (Roosevelt, 1980; see Section 2). How these came to an end through the predatory practices and introduced diseases of the Europeans is now common knowledge (e.g. Hemming, 1978, 1987).

As in America, the choice of production systems and dietary strategies in the central African forest region is determined, not only by available resources but also by the social history of the African continent. Early human migration favoured the introduction of exotic food plants through traders and missionaries. Among these, the banana from Asia and manioc from America are the staple foods of present-day populations (Bahuchet, 1990). Although they are the descendants of the first inhabitants of the forest (Bahuchet, 1993, this volume), Pygmy groups found in Cameroon, the Central African Republic, Congo, Rwanda and Zaire, now live – and have done for some time – in contact with swidden agriculturalists. The Pygmies and neighbouring agriculturalists maintain complex relationships of exchange, particularly of foodstuffs. Each group practises more or less the same activities but at different levels. The colonial period, with all its background of enforced labour and its attendant infectious diseases, left a profound mark on central African economies (Demesse, 1978; Bahuchet and Guillaume, 1979), and also on health and demography. Today, the exploitation of the natural environment by forest peoples is undergoing major changes, mostly because of the introduction of cash crops.

THEMES COVERED

In an effort to understand the relationships between resources and procurement strategies, scholars have tended in the past to polarize their approaches to data gathering and interpretation. On the one hand, several anglophone scholars have tried to reduce the number of variables studied and concentrate on testing a few measurable dimensions. In contrast, most francophone scholars have emphasized the complex interactions that exist between “nature” and “culture”, and the impossibility of reducing multifactorial situations to uni-causal sequences. In the last ten years, their approaches have become closer and broader. All scholars have now come to appreciate the subtleties of the intense ethnological experience, as well as the scientific merit of gathering quantitative data and focusing on testable propositions.

The authors of the essays that follow explore group strategies, resource management practices, ecological diversity and individual selectivity from a consistently multi-factorial, and broadly comparative perspective, that gives due importance to culture as an integrative factor.

Models of variability

Beckerman (Chapter 34) usefully insists upon the need to recognize the existence of broad zones within tropical forests that demand different efforts and choices from their inhabitants. He sees these choices as best understood in the context of “optimal foraging strategies”. This approach is not unproblematic, however. In Chapter 35, P. Grenand takes a more qualified approach to the subject of “optimization”. The data presented show that there are distinct ways of optimizing the ratio of effort to yields by taking advantage of differing time/space circumstances. For example, the Wayāpi of Amazonia take advantage of both natural concentrations of fish (“simple optimization”), as well as multiple factors occurring simultaneously or throughout the year (“complex optimization”). Grenand’s chapter ends with the caveat about the creative role of culture in coping with environmental uncertainty and indeterminacy. Similarly, Dove (1993, this volume) shows that such optimization can work indirectly, through wild pigs adapting to cyclical fruit production of Dipterocarpaceae, and humans predated upon this fauna.

In this light, Balée (1989) reminds us that optimal foraging strategists are still befuddled with the idea of total carrying capacity. Yet we must consider tropical forest peoples not only as resource users but also as resource managers and “improvers”.

Ecological diversity, seasonality and scarcity

The importance of seasonality in food supply (Gariné and Harrison, 1988), and of the various strategies that – within Amazonia – are built upon it (Hames and Vickers, 1983) have been widely emphasized. Sponsel and Loya (Chapter 36) deal with responses to ecological diversity in a more empirical fashion. By concentrating upon one community (the Curripaco of Venezuela), and one “difficult” ecosystem (the nutrient-poor blackwater rivers), they show the value of using mixed (hunting and fishing) opportunistic strategies, clever technologies and ecotonal contexts in order to stay alive and reproductive.

Ichikawa (Chapter 40) deals with the opposite problem, namely how do the Mbuti hunter-gatherers of northeast Zaire cope with a diverse and species-rich environment. The answer is that they do so by being highly selective in what they eat, when and how. We can infer from his chapter that in this society, food selectivity, totems and taboos may contribute to preserving biodiversity and avoid overexploitation of resources. In the same forest area, Takeda and Sato (Chapter 41) show that the multiple subsistence strategies of horticulturalists using a wide range of fishing

and hunting techniques in an opportunistic way, fulfill protein requirements efficiently. Similarly, the Ntomba living in the flooded forest of the Congo Basin have attuned fishing, hunting and insect-gathering practices to the bimodal occurrence of animal products. As a consequence, lean periods are very short (Pagezy, 1990).

Brosius (Chapter 43) highlights the differences in strategies and social organization between the Eastern and Western Penan in Borneo, even though both groups live by exploiting sago and by hunting.

Lizot (Chapter 39) makes the often neglected point that hunting and gathering among tropical forest peoples such as the Yanomami are often secondary, complementary activities. In an otherwise ancient, essentially agricultural economy, the institution called *wayumi* (an intermittent, food-procuring journey) lends flexibility at times of ecologically or socially induced food shortages.

Changes through time

Vickers (Chapter 38) examines how the Siona-Secoya Indians of Ecuador are “attempting to survive and adapt to new realities” by using considerable entrepreneurial skills. They have become involved in cash-cropping, lumbering, livestock raising, wage-labour and tourism, thus incorporating new income-earning activities while still achieving food security through their traditional system of shifting cultivation. How different their situation seems from that of the Onge described in Chapter 42 by Venkatesan! Centuries of colonial British and post-colonial exploitation, – culminating in forced resettlement in 1976 – have left this population of Little Andaman islanders dependent upon supplemental food, despite development efforts to improve their living conditions.

The power of culture to modify life options

Focusing upon a single resource complex, namely manioc cultivation, F. Grenand (Chapter 37) demonstrates the radically different patterns into which yield and income are structured by socio-political and historical circumstances. A cohesive Indian native society living on poor soils has the same prospects for success as a disorganized, intrusive *caboclo* society living in rich-soils. It all depends upon the concepts and actions that are brought to bear upon the task of exploiting a given ecological endowment.

Indeed, food-procurement strategies among forest dwellers are the product of a long period of *coevolutionary interactions* among humans and the plant and animal world. Regardless of place, one can speak of a “plural-strategy”

involving hunting, fishing and gathering, cultivating and trade. Through the centuries, humans have developed an impressive knowledge about edible species, their characteristics, their behaviours, and their socio-temporal dynamics. Similarly, they have gathered information on food-procuring technologies adjusted to seasonal displacements motivated by the demands of hunting, fishing, gathering and cultivation. One can label those strategies as “opportunistic”. In effect, the basic tendency is for the practices surrounding the food quest to be defined and elaborated according to socio-cultural values that are structured differently in various tropical forest societies.

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