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Conformity and Conflict
Readings in Cultural Anthropology

James Spradley David W. McCurdy

Fourteenth Edition

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The people of Itanaramí not only lived in the forest, they saw themselves as of it. The forest was basic to indigenous cosmology. The people referred to themselves as *ka'aguygua,* or "people of the forest." Villagers often named their children after the numerous forest songbirds, symbolizing their close personal ties to the environment.

Sustainable Production

Guaraní had lived in their present locale for centuries and had dwelled throughout the tropical forests of lowland South America for thousands of years. During all this time, they exploited flora, fauna, and soils of the forests without undermining the integrity of the forest ecosystem. In fact, Guaraní production seems to promote biodiversity.

The secret of their success was their production strategy. The Indians mixed agriculture with gathering, hunting, and fishing in a way that permitted the environment to recover. They even collected forest products for sale to outsiders, again without causing environmental damage. Guaraní farming was well suited to forest maintenance. Using a form of shifting agriculture called slash-and-burn farming, the Indians permitted the forest to recover from the damage of field clearing. The way Veraju, the tamoi of Itanaramí, and his wife, Kitu, farmed provides a typical example. When the family needed to prepare a new field, it was Veraju who did the heavy work. He cut the trees and undergrowth to make a half-acre clearing near his house. Then he, Kitu, and some of their five children burned the fallen trees and brush, creating an ash that provided a powerful fertilizer for the thin forest soils. When the field was prepared, Kitu used a digging stick fashioned from a sapling to poke small holes in the ground, and planted the staple Guaraní crops, beans and manioc root (from which tapioca is made). Interspersed with the basic staples, they added the slower-growing banana, sugar cane, and orange trees to round out their diet. When the crops matured, it was Kitu and her daughters who harvested them.

The secret to successful slash-and-burn agriculture is field "shifting" or rotation. Crops flourish the first year and are plentiful the next, but the sun and rain soon take their toll on the exposed soil. The thin loam layer, so typical of tropical forests, degenerates rapidly to sand and clay. Grasses, weeds, and insect pests, rare in the deep forest, eventually discover the vulnerable crops. By the third year, the poor soils are thick with weeds and grow only a sparse corn crop and few small manioc roots. Rather than replant a fourth time, Veraju and Kitu would clear a new field nearby where soils are naturally more fertile and the forest can be burned for additional ash fertilizer.

Although fallow, their old field was not abandoned. They returned periodically to dig some of the remaining manioc and, while there, tend a small area of banana trees or clear the weeds from around a young orange tree. If Veraju discovered a yerba plant taking root in the tangle of undergrowth he would cut back the surrounding brush and give it room to grow.

The surrounding forest quickly reclaims the old field; roots penetrate the opening from the forest edge and animals wander through it dropping seeds in their path. As the forest returns, the decaying matter once again strengthens the depleted soil. After several years the plot will be distinguished only as one of the citrus groves that are scattered throughout the unbroken forest. In this way, the forest produces a sustained yield without degrading the natural ecosystem.

More than protect the forest, Guaraní production increases the biodiversity of the system. As gardens revert to fallows, and regrowth turns into forest, some of the

species planted and tended by the Guaraní survive. The forest that regrows has plants that would have failed but for the attention of Kitu or Veraju.

The forest recovers sufficiently fast for the same plot to be cleared and replanted within ten or fifteen years. This "swidden" system results in the cyclic use of a large area of forest, with a part under cultivation and a much larger portion lying fallow in various stages of decomposition.

If farming formed the only subsistence base, the Guaraní would have had to clear much larger gardens. But they also turned to other forest resources—game, fish, and forest products—to meet their needs. Guaraní men often formed small groups to hunt large animals such as deer, tapir, and peccary with guns purchased from outsiders or with the more traditional bows and arrows they make themselves. A successful hunt provides enough meat to share liberally with friends. Men also trapped smaller mammals, such as armadillo and paca (a large rodent). They fashioned snares and deadfall traps from saplings, tree trunks, and cactus fiber twine. These were set near homesteads, along streams, and at the edges of gardens. Traps not only provided meat, but also killed animals that would otherwise eat the crops.

Fish also supplied protein for the Guaraní diet and reduced dependence on agricultural produce. Many rivers and streams flow near Itanaramí on flat bottomland. These watercourses meander in broad loops that may be cut off as the river or stream changes course during a flood. Meanders, called oxbows, make ideal fishing spots. In addition to hook and line, men captured the fish by using a poison extracted from the bark of the *timbo* vine. Floated over the surface of the water, the poison stuns the fish and allows them to be caught by hand.

The forest also supplied a variety of useful products for the Guaraní. They made houses from tree trunks and bamboo stalks; rhododendron vines secured thatched roofs. Villagers collected wild honey and fruit to add sweetness to their diets. If the manioc in the fields were insufficient, wild tubers provided a basic staple. Even several species of insect larva and ants were collected as tasty and nutritious supplements to the daily meal. Finally, the Indians knew about a wide variety of medicinal plants. They processed roots, leaves, flowers, and seeds to release powerful alkaloids, making teas and poultices for the sick and injured.

But the Guaraní were not isolated from commercial goods. Almost five hundred years ago, White traders entered the forests of the Guaraní and gave Indians access to world markets. The Guaraní continued to produce for most of their needs, but items such as machetes, hooks, soap, and salt were more easily bought than manufactured or collected. As they did with farming and hunting, Guaraní turned to the forest to meet such economic needs. They regularly collected two forest products, yerba maté and leaves from wild orange trees, which have an oil used in flavorings and perfumes, to raise the necessary funds.

It is important to note the special Guaraní knowledge and values associated with subsistence activities. Because they lived in the forest for such a long time, and because they would have nowhere to turn if their own resources disappeared, they relied on a special and complex knowledge of how the forest works and how it can be used.

For example, Guaraní, such as Veraju, distinguished among a variety of "ecozones," each with a unique combination of soil, flora, and fauna. They recognized obvious differences between the high forests on the hills, the deep swamps of river basins, and the grassy savannahs of the high plains. But they made more subtle distinctions within these larger regions. For example, they called the low scrub along rivers ca'ati. Flooded each year during the rainy season, this region supported bamboo groves that harbored small animals for trapping and provided

material for house construction. The forests immediately above the flood plain look like an extension of the *ca'ati*, but to the Guaraní they differed in important ways. This ecozone supported varieties of bamboo that were useless in house construction but that attracted larger animals, such as peccary, which they hunted. In all, the Guaraní distinguished among nine resource zones, each with distinctive soils, flora, fauna, and uses. These subtle distinctions among ecozones enabled the Guaraní to use the forest to its best benefit. By shifting their subsistence efforts from one zone to another, just as they shifted their fields from one spot to the next, the Guaraní assured that the forest environment, with its rich variety of life, would always be able to renew itself.

Rather than undermine the stability of the forest, Guaraní production has increased biodiversity by fostering the growth of useful plants. The evidence is subtle but ubiquitous. The species of bamboo used for arrows and the palms valued for bow staves are more common in forests near Guaraní communities and, even in the most distant areas, citrus groves and yerba trees signal the existence of long-forgotten gardens. Research shows that this form of subtle agroforestry has increased the biodiversity of forests throughout lowland Latin America. Anthropologists have come to understand that all of these primordial forests have experienced the gentle hand of human intervention, enough to challenge our belief that any ecosystem is truly "natural."

The Impact of Unsustainable Development

In the last few years, intensive commercial development has come to the region in which Itanaramí lies. Paraguay's deforestation rates are among the highest in the world, raising the specter of complete ecological destruction. White *colonos* (settlers), armed with chain saws and earthmovers, attack the trees. They vandalize the land without awareness of the carefully integrated ecozones. As the trees fall, the forest products, such as yerba maté, are destroyed. So are the mammals and fish, the bamboo and the rhododendron vines, the honey and the fruits, and the fallow fields. As these resources disappear, so does the economy of the once self-sufficient Guaraní. Without their traditional mode of subsistence, it has become impossible to maintain their kin-organized society, the influence of the tamoi, and the willingness to share. Indian communities are destroyed by poverty and disease, and the members who remain join the legions of poor laborers who form the lowest class of the national society. In short, the Guaraní lose their ability to survive as an independent ethnic group.

Recent intensive development began near Itanaramí with a road that colonists cut through the jungle to the village. Through this gash in the forest moved logging trucks, bulldozers, farm equipment, and buses. Accompanying the machinery of development were farmers, ranchers, and speculators, hoping to make a quick profit from the verdant land. They descended from their vehicles onto the muddy streets of a newly built frontier town. They cleared land for general stores and bars, which were soon filled with merchandise and warm beer. By day, the air in the town was fouled by truck noise and exhaust fumes; by night it was infused with the glare of electric lights and the noise of blaring tape players.

Soon the settlers began to fell the forest creating fields for cotton, soybeans, and pasture. Survey teams cleared boundaries and drew maps. Lumber gangs camped in the forests, clear-cutting vast tracts of trees. Valuable timber was hauled off to new lumber mills; everything else was piled and burned. Massive bulldozers created

expanses of sunlight in the previously unbroken forest. Within months, grass, cotton, and soybeans sprouted in the exposed soils. Where once the land had been home for game, it now provided for cattle. Herds often clogged the roads, competing with trucks hauling cotton to market and busses loaded with new colonists. Settlers fenced in the fields and cut lanes through the remaining forest to mark off portions that would be private property (off-limits to Indians).

The road and fields reached Itanaramí in 1994. A cement bridge was built over the stream and chainsaws, logging trucks, and bulldozers assaulted the forests the Guaraní once used for gardens, farming, and hunting. The footpath that once carried Guaraní to the tamoi's house now carries their timber to market in Brazil. The families are left with barren house lots.

Moreover, by destroying the forest resources surrounding the Guaraní villages of the region, colonos set in motion a process that destroyed the native culture and society. Guaraní communities became islands surrounded by a sea of pastures and farm fields. Although the Indians held onto their gardens, they lost the forest resources needed to sustain their original mode of subsistence, which depended on hunting, fishing, and gathering in the forest as well as farming. These economic changes forced alterations in the Indian community.

First, without the forest to provide game, fish, and other products, the Guaraní became dependent on farming alone for their survival. Without wild foods, they had to plant more corn and beans. Without the forest production of yerba maté leaves to collect for sale, they were also forced to plant cash crops such as cotton and tobacco. These changes forced them to clear gardens that were over twice the size of their previous plots.

While the loss of the forest for hunting and gathering increased their dependence on agriculture, the fences and land titles of the new settlers reduced the land available to the Indians for cultivation. Families soon cleared the last of the remaining high forests that they controlled. Even the once forested stream banks were denuded.

After they had cleared their communities' high forest, Indian farmers were forced to replant fields without allowing sufficient fallow time for soils to rejuvenate. Crops suffered from lack of nutrients and yields declined despite additional effort devoted to clearing and weeding. Commercial crops, poorly suited to the forest soils, did even worse. As production suffered, the Indians cleared and farmed even larger areas. The resulting spiral of poor harvests and enlarged farms outstripped the soil's capacity to produce and the Guaraní's ability to care for the crops. Food in the Indian communities grew scarce. The diet was increasingly restricted to nonnutritious manioc as a dietary staple because it was the only plant that could survive in the exhausted soils.

The Guaraní felt the ecological decline in other ways. The loss of game and poor crop yields exacerbated health problems. Settlers brought new diseases such as colds and flu into the forest. The Guaraní have little inherited resistance to these illnesses and poor nutrition reduced their defenses even further. Disease not only sapped the adults' energy for farming and childcare, it increased death rates at all ages. Tuberculosis, which well-fed Guaraní had rarely contracted, became the major killer in the community.

The environmental destruction took a psychological toll as well. Guaraní began to fall into depression, get drunk on cheap cane liquor, and, all too often, commit suicide. A number of suicides were noted among the Guaraní in Brazil in the 1990s and subsequent research in Paraguay showed that indigenous peoples were killing themselves at almost fifty times the national average. The epidemic

hit 15- to 24-year-olds the hardest. These young people saw little future for themselves, their families, and their people.

Deforestation also disrupted social institutions. Without their subsistence base, many Guaraní needed additional cash to buy food and goods. Indian men were forced to seek work as farmhands, planting pastures and picking cotton on land where they once hunted. Women stayed at home to tend children and till the deteriorating soils of the family farms.

The search for wage labor eventually forced whole Guaraní families to move. Many jobs were available on the new farms that had replaced the forest. Entire families left home for hovels they constructed on the land of their employers. From independent farmers and gatherers, they became tenants of *patrones* (landowners). Patrones prohibited the Guaraní farmhands from planting gardens of their own, so the displaced Indians were forced to buy all their food, usually from the patrones themselves. Worse, patrones set their own inflated prices on the food and goods sold to Indians. Dependence on the patrones displaced the mutual interdependence of traditional Guaraní social organization.

As individuals and families left the Guaraní villages in search of work on surrounding farms and ranches, tamoi leaders lost influence. It became impossible to gather disparate relatives and friends for religious ritual. The distances were too great for the elders' nieces and nephews to seek out counsel and medicines. Moreover, the diseases and problems suffered by the Guaraní were increasingly caused by people and powers outside the forest. The tamoi could neither control nor explain the changing world.

Finally, as the forest disappeared, so did its power to symbolize Guaraní entity. No longer did young Indians see themselves as "people of the forest." Increasingly, they called themselves *indios*, the pejorative slur used by their non-Indian neighbors.

Today, many of the Guaraní of eastern Paraguay remain in small but impoverished communities in the midst of a frontier society based on soybean farming and cattle ranching. The households that previously were isolated individual plots are now concentrated in one small area without forest for farming or privacy. The traditional tamoi continue to be the center of the social and religious life of the community, but no longer exert influence over village decisions, which are increasingly dominated by affairs external to the local community.

Development and Ecology

Some people might argue that the Guaraní need to learn from their new neighbors, that they need to change their traditional ways and adopt the economy and culture of the more modern, prosperous society. The problems the Guaraní suffer, they claim, are a result of their traditional economy and culture. Change might be painful for today's Indians, but will provide unequaled opportunity for their descendants.

Unfortunately, this argument ignores the fact that recent development is destroying the resources on which the new fanning and ranching depend. The long-run implications of forest clearing are disastrous, not simply for the Guaraní and other Indians, but for settlers and developers as well. The tropical forest ecosystem is extremely fragile. When the vegetable cover is destroyed, the soil quickly disappears. Erosion clogs rivers with silt and the soils left behind are baked to a hardpan on which few plants can survive. Rainwater previously captured by foliage and soil is quickly lost to runoff, drying the winds that feed the regional rain systems. Although first harvests in

frontier areas seem bountiful, long-term farming and ranching are unprofitable as the soils, deprived of moisture and the rejuvenating forces of the original forest, are reduced to a "red desert."

Returning to Itanaramí today, one notices that many of the fields first cleared by ranchers in 1996 have already been abandoned. And even worse, leaving the cleared land fallow does not restore it. Once destroyed, the forest plants cannot reclaim the huge expanses of hardpan left by unsustainable development.

Nor have developers been interested in husbanding the land. The colonos who clear the forests are concerned with short-term profit. Entrepreneurs and peasant farmers maximize immediate returns on their labor and investment, unaware of the environmental costs that subsidize their earnings. When the trees and soils of one area are exhausted, the farmers, ranchers, and loggers move farther into the virgin forest in search of new resources. The process creates a wave of development that leaves destruction in its wake. Unlike the Guaraní who have developed sustainable systems, developers do not stay and contend with the environmental destruction caused by their activities.

Indigenous Models for Sustainable Development

Rather than the Guaraní learning to adapt to our models of development, perhaps we need to take a lesson from indigenous peoples. If we hope to survive in the rain forest, we must learn from the people who have not only survived, but prospered commercially in this fragile environment. International agencies and national governments have begun to recognize that our development strategies are doomed to failure. Although deforestation continues unchecked in many regions of the Amazon Basin, forest conservation programs are using the experience of indigenous people to promote sustainable development in the forest.

Such is the case in Paraguay where a program is being implemented to preserve the remaining tropical forests. Groups like the Guaraní of Itanaramí, so recently threatened by encroaching development, are providing a model for newcomers to earn a profit from the natural resources, while protecting the existing environment. The natural forests of some of the Guaraní are the last remaining undisturbed subtropical forest in eastern Paraguay. With the help of Nature Conservancy, an area of 280 square miles has been set aside as a biosphere reserve. Although small, the program is attempting to protect a much larger buffer zone around the reserve by promoting rational land use by colonists. Aided by anthropologists who have made detailed studies of Indian commercial harvesting, planners are integrating the Indians' own models of agro-forestry into new production strategies for colonos. Guaraní techniques of commercial extraction have been of special interest, particularly the harvest of yerba maté, as it will economically outperform destructive farming in the long run. Teams of planners are teaching newcomers to tend and harvest their own tree crops. Far from being backward and inefficient, the mixed horticultural subsistence strategies of indigenous forest groups have turned out to be the most practical way to manage the fragile tropical forest environment.