



Robert Mcc. Netting

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By Olga F. Linares

WITH THE DEATH OF Robert McC. Netting on February 4, 1995, at the age of sixty, anthropology lost one of its most respected members. A distinguished cultural ecologist, Netting conducted lifelong studies of the vital relationships linking peoples' social institutions, individual behaviors, and collective beliefs to their production practices. Focusing on the effects of population growth on land tenure and agricultural use, Netting championed the cause of the small-holder--the peasant farmer who intensifies production on a small plot of land by using household labor to achieve an energy-efficient, low-input, successful adaptation. Managing the household patrimony wisely and sustainably, smallholders can achieve yearlong use of their land with minimal ecological damage. They can make a decent and honorable living in farming without experiencing the marked instabilities and inequalities that plague capitalistic (or for that matter also collectivistic) export-oriented farming enterprises elsewhere in the world.

Born in Racine, Wisconsin, on October 14, 1934, Netting received his undergraduate training at Yale University. He graduated in 1957 (summa cum laude and a member of the Phi Beta Kappa Society) with a B.A. in English. His background in the humanities served him well. Netting was highly literate; a skillful and engaging writer, his lucid prose was devoid of the turgid constructions marring so much of social science writing today.

For graduate studies Netting went to Chicago, where he obtained his M.A. in anthropology in 1959 and his Ph.D. in 1963. In the summer of 1958 he conducted fieldwork in the Ft. Berthold Reservation in North Dakota. There he investigated sources of conflict in Indian voluntary organizations for his M.A. thesis. For his Ph.D. dissertation research Netting spent eighteen months from 1960 to 1962 studying the agrarian practices of the Kofyar, a people living in the hilly escarpments of the Jos Plateau in northern Nigeria. Netting's Kofyar study, published in 1968, was to become a classic monograph on the cultural ecology of intensive cultivators. Time and again, Netting was to return to this part of West Africa: he visited the Kofyar for nine months in 1966-67, for six months in 1984, for one month in 1992, and for three months in 1994. More recently he collaborated with M. P. and G. D. Stone in the publication of much of the quantitative data gathered these past few years on Kofyar demography, expansion, and cash cropping.

In addition to his African research, Netting carried out protracted field studies among Alpine villagers in the Törbel community of Valais, Switzerland. The fourteen months he spent in Törbel in 1970 and 1971, followed by two months in 1974 and 1977, resulted in numerous publications, including his famous book, *Balancing on an Alp* (1981). This is a superb analysis of the historical demography and intensive land use of a European agricultural and herding community.

The consummate teacher--beloved by his students, admired by his colleagues--Netting's first full-time academic appointment was in the anthropology department of the University of Pennsylvania. At Penn he served as assistant professor from 1963 to 1968 and as associate professor from 1968 to 1972. He and I first met in Philadelphia in 1966. Fresh from the field, where I had been

studying the agrarian practices of the Jola of Casamance, Senegal, Netting received me with characteristic grace: "Finally, a colleague who is also working on intensive farmers." With this remark he promptly placed my research in comparative perspective, making me feel appreciated and welcomed. In the years that followed I learned as much from his lectures on cultural ecology in the introductory course that we taught together at Penn as did his students. It was a great loss to the department when Netting left in 1972 for the University of Arizona.

With the exception of 1994, which he spent as a research scholar at the Institute for Advanced Studies at Indiana University, and extended periods in the field or shorter summer consultant jobs, Netting served continuously as professor of anthropology at the University of Arizona. Since 1991, in fact, he was regent's professor in that distinguished department.

Netting's honors were multiple: Guggenheim fellow (1970-71), fellow at the Center for Advanced Study in the Behavioral Sciences (1986-87), the Heizer Prize for the best journal article on ethnohistory (1987), and the Wenner Social and Behavioral Sciences Research Institute Best Book Award (1994) for *Smallholders*. He also performed important services for the profession: editor of the University of Arizona Press's *Studies in Human Ecology* since 1984; member of the AAA Executive Board (1981-84), including chairman of its Committee on Scientific Communication (1983-84); and president of the International Association for the Study of Common Property (1991-92). In April 1993 Netting was elected to the National Academy of Sciences.

At the November 1994 meetings of the American Anthropological Association, Netting complained to his friends of a persistent backache. Shortly after, in December, his condition was diagnosed as bone marrow cancer. The treatment he underwent lowered his defenses, and a few months later he died of valley fever, a lung infection common in the southwestern United States. A person of great personal integrity, compassion, and commitment, he is survived by his wife, Rhonda Gillett-Netting, an accomplished biological anthropologist in her own right, and five children: Robert F., Jessa F., and Laurel M. from a previous marriage and the twins, Piers and Juliet, born after he died. His mother, Martha M. Netting, and brother, the Rev. William J., also mourn their loss.

Netting will always be remembered for his prodigious scholarship. His field research was informed by past theoretical problems and future orientations. His methodology was sound and appropriate. The seminal articles, meticulous monographs, and important theoretical works he produced shaped the course of ecological anthropology from the 1970s onward. They brought him international fame and a wide readership. His publications and the field studies upon which they are based merit detailed consideration.

EARLY WORKS

Netting's early work is decidedly empirical in focus, comparative in execution, and functionalist in orientation. In the 1960s he undertook research among the Kofyar of northern Nigeria with a clear problem in mind. Could the ecological approach that Julian Steward pioneered in his 1938 study of mobile hunting societies in the Great Basin of the southwestern United States be profitable when applied to agricultural peoples, he asked? What reformulations and refinements of Steward's theory would be necessary to accommodate the sedentary, intensive cultivators of the hilly Nigerian escarpment? At his return from the field Netting wrote two papers answering these questions (full references are given in the Selected Bibliography). In "Trial Model of Cultural Ecology" (1965,1) Netting argues that social and cultural factors, and not only biological and physical factors (i.e., Steward's "relevant environmental features"), must be included in the definition of effective environment. The innermost core of Netting's functionalist model is taken up by what he calls "social instrumentalities"--namely, demography, productive groups, and rights in resources--precisely those aspects of social organization that have direct adaptive significance. In a second article published the same year (1965,2) Netting illustrates further what he means by "social instrumentality." He uses the example of the small independent family among the Kofyar, an institution admirably adapted to the labor needs of intensive agriculture in small parcels of land. He contrasts it with the extended family of the neighboring Chokfem people, who are better adapted to shifting cultivation on dispersed lands. Here we see Netting's early interest in the functional links that relate household composition and labor requirements to the ways in which land is put to productive use.

Netting's first book, *Hill Farmers of Nigeria* (1968), is a more complete analysis of the intensive ways in which the Kofyar manage their homestead gardens on hilly slopes by terracing and fertilizing. In this highly readable description of Kofyar ecology and agrarian economy Netting demonstrates that population density, division of labor, and rights to land and labor are functionally interrelated with crucial aspects of the ecosystem. In addition to making cross-cultural comparisons and correlations he marshals an impressive amount of quantitative data on farm size, labor composition, and yields to test culture-environment relationships. Netting further compares the social institutions of Kofyar hill farmers with those of their lowland bush relatives who migrated to the lowlands in large numbers after the 1950s. Their enlarged extended households are better suited to the production of commercial crops under a system of shifting cultivation. Intricate feedback mechanisms between population density, land availability, and household structures have facilitated adjustment and adaptation among these migrants. According to Netting these are widespread phenomena. In another landmark article (1969,2) he compares Kofyar adaptation to that of the Igbo of eastern Nigeria. He concludes that in both cases the emergence of polygynous extended families and communal tenure is directly related to the easing of population pressure, as more cultivable land became available. Hence, population pressure becomes the critical variable, the mechanism that sets in motion related technological and social variables.

Netting's writings about the Kofyar covered many aspects of their life besides agriculture. He wrote wonderful pieces on the social value of drinking beer, on the politics of gender and domesticity, and on warfare. On the latter theme he emphasized the causal links between war and shifts in settlements, including their abandonment. Tsetse fly infestations increase as bush takes over unused land, and deaths lower population densities.

Already engaged in the study of Törbel (see below), Netting found time to write a useful little book explaining his own anthropological perspective. *Cultural Ecology* (1977) is a clear exposition of the theoretical underpinnings and methodological commitments of what Netting calls an ecological "way of seeing." Hunter-gatherers, northwest coast fishermen, East African cattle-raising peoples, and subsistence farmers are analyzed with an eye to exposing the complex, reciprocal interactions that underlie subsistence technologies and local ecosystems. For this task a comparative historical approach and a cross-cultural

perspective are essential.

HISTORICAL ECOLOGY: THE TÖRBEL YEARS

Feeling the need for more complete historical records than were available for northern Nigeria on long-term relationships between demographic fluctuations, land tenure regimes, and ecological adaptations, Netting undertook research during the early 1970s on the German-speaking Alpine community of Törbel in the Vispertal of the Valais canton of southern Switzerland. The Törbel inhabitants practice an intensive, largely self-sufficient, mixed farming and herding economy. Starting in 1972, Netting published a series of important articles covering land-use practices, including the intricate irrigation system, forms of communal tenure, and the marriage system of these remarkable Swiss alpine villagers. His most salient contribution was in the analysis of historical records on household structure and migration in this largely endogamous community. Census data contained in enumerator's books listed village residents by household and covered several periods during the nineteenth century. Netting copied, cross-checked, and subjected the data--with the help of Walter Elias and Larry Manire--to computer analysis using software developed by the Cambridge Center for the Study of Population and Social Structure.

In the fifty years encompassed by the censuses of 1829 and 1880 three-fourths of Törbel's households continued to encompass four to eight members, with the modal number being four or five. There were minor increases in the age of marriage, frequency of celibacy, and average life span of the parents. But the number of households remained fairly stable. The formation of new households was seriously constrained by the limit placed on resources--namely, meadows, gardens, grain fields, and water to irrigate them. Households with extended family units that included maiden aunts, or celibate uncles became more common through time; but when emigration and wage labor opportunities presented themselves, households contracted in size. The ideal continued to be the nuclear household, well adapted to a relatively static agrarian economy. Within relatively narrow boundaries, therefore, the household serves as the main institution through which individuals responded to short-term social and economic changes.

In 1981 Netting's Alpine research was published by Cambridge University under the clever title, *Balancing on an Alp*, an allusion to the closed corporate nature of Törbel, a community in demographic and ecological equilibrium. The book assembled eight of his most important articles, appropriately revised, plus three new chapters that structure and relate the ecology and economy to the social organization. Rather than replacing each other, as scholars have assumed, in Törbel communal land tenure practices--held in the alpine grazing lands and in the irrigation system--coexisted for 300 years with private tenure practices exercised in the intensively cultivated agricultural plots. Discussion of population dynamics covers four chapters and is based on a staggering array of quantitative data forming the core of the book. The concluding chapters present a skillful analysis of the relationship between demographic trends and ecological processes. An outstanding work of "ecological anthropology," *Balancing on an Alp* is also a charming study of how Swiss peasants endured and even thrived in their special Alpine environment. The book has become a classic, referred to by economic historians and students of rural European life as often as by anthropologists and cultural ecologists.

A SYNTHESIS: THE LAST FEW YEARS

In 1993 Netting published *Smallholders, Householders*, an impressive scholarly work analyzing the role that farm families play in the ecology of intensive, permanent, and productive agriculture. The book documents the food-producing practices of small rural cultivators from the Far East, Southeast Asia, Africa, and Latin America. Their environmentally appropriate and efficient ways of mobilizing labor, reducing external inputs, and diminishing risk contrast with the wasteful procedures inherent in agribusiness and large-scale industrial farms. Under conditions of expanding population, changing agricultural technologies, and the penetration of a market economy the smallholder alternative has proven to be "economically efficient, environmentally sustainable, and socially integrative" (p. 27). Using the example of two systems he knew well--the Kofyar of northern Nigeria and the Swiss Alpine villagers of the Valais Canton--Netting outlines the common features of technology and knowledge they share that are essential characteristics of intensive farming practices everywhere. He then extends his sample to include Asian irrigated rice economies and intensively managed dooryard gardens to demonstrate that an intimate knowledge of the environment combined with a wide array of soil restoration, water control, and plant-management practices are employed to solve ecological and economic problems. The social unit that most effectively carries out these intensive tasks is the coresident household, with its bounded resources and acknowledged property rights, its committed labor force, and its clear production goals. Despite their demonstrated efficiency, households are not uniformly endowed. There are significant disparities between them in productive property and accumulated wealth. But these differences are not predetermined or fixed: they do not prevent deliberate mobility or the unintended consequences of reduction in size. Actually, economic disparity is lower in areas where population density is higher and land use most intensive. It is in sparsely populated hinterlands and agricultural frontiers where wealth is more polarized and poverty most paralyzing.

Consistent with previous writings, Netting finds in the theories of Ester Boserup, the Danish economist, the most intellectually satisfying reason for the smallholder way of life. Boserup was the first scholar to argue that a positive relationship exists between population density (and land scarcity) and intensive forms of agriculture. This is exactly the opposite of Malthus's argument that environmental potential and carrying capacity determine population densities. It is more compatible, however, with the microlevel analysis of the composition of peasant households by the Russian economist Chayanov. One of the great strengths of Netting's last book is that he shows where the theories of great economists such as Boserup, Malthus, Marx, and Chayanov are relevant, or where they go astray, in an effort to explain the logic and persistence of smallholder adaptations. In the complex world economy in which all farmers participate nowadays there is no imminent danger that the smallholders' way of life will disappear so long as their activities continue to make good economic sense.

CONCLUSION

Netting's life and work were characterized by integrity, intellect, and involvement. Ever so much the social scientist, he painstakingly gathered quantitative ethnographic data with which to test middle-range theories about the processes that relate social institutions to underlying forces in the environment. His focus on the role of households in the economy of intensive agriculture led him to discover systematic relationships between population dynamics, ecological change, and the form and function of rural family structures. His enduring contribution was to explore--systematically and quantitatively--the social and ecological consequences of long-term resource use.

Netting's respect for the inventiveness and tenacity of rural producers won him affection and respect. "The wonderful work he did for our community will forever remain a legacy that will not be forgotten" (letter of September 5, 1995, from J. Daduut of the Kofyar Federation to Rhonda Gillett-Netting). "Professor Netting was loved by the people of Törbel--there remains nothing but to think of this man, who was such a devoted friend to our simple mountain folk, with thankful high esteem . . ." (letter by R. Wyss of Törbel to Rhonda Gillett-Netting).

I SHOULD LIKE TO thank Rhonda Gillett-Netting for her kindness in sharing with me essential documents on her husband. These included an up-to-date CV, published newspaper articles on Bob, letters from friends in the field, and a memorial article (B. J. McCay. Robert McC. Netting and Human Ecology: An Appreciation. *Hum. Ecol.* 24(1996):125-35). Two additional forthcoming pieces by Richard Wilk and Priscilla Stone, both devoted students of Netting, also were helpful. The review essay by J. Martinez-Alier, "In Praise of Smallholders" (prepared for the Conference on Agrarian Questions, Wageningen, 1995) is critical of Netting's work but not unfairly so. Although I consulted several reviews of Netting's publications, the assessment here of his work is solely my own.

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