Cultural and Historical Geography of the Andes

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ABSTRACT
The contributions by geographers to the study of aboriginal and peasant cultures in the Andes have greatly increased in the 1980s, and their contributions have increasingly been welcomed by international development agencies. In the area of traditional agriculture, geographers have documented the adaptive potential of subsistence farmers, elucidated the relative efficiencies of alternative strategies, and identified the components of the strategically relevant environment. Major projects such as the Climate Impacts Project of the United Nations and the Colca valley project have been organized by geographers. Geographers have also contributed to the study of prehispanic agriculture, producing numerous studies of prehispanic raised fields, terraces, irrigation systems, sunken fields and embanked fields. Finally, geographers have contributed to the study of Andean ethnogeography, producing ethnic maps and contributing to the study of Andean material culture. It is likely that this success story will be continued into the 1990s, with perhaps an increased emphasis on using the vocabulary of social theory, political ecology and the new cultural geography.

ANDEANIST CULTURAL GEOGRAPHERS IN THE 1970s

When geographical research on aboriginal and peasant cultures were reviewed at the 1980 CLAG tenth anniversary meeting (Davidson 1981; Denevan 1981; Knapp 1981b; Kus 1981; Patrick 1981; Turner II 1981), the general format was not based on geographical regions but on themes. About 70 citations in the various papers in this session referred to the Andes or coastal South America.

To judge by the number of citations, geographical research on Andean aboriginal and peasant cultures in the 1970s was dominated by Dan Gade's work on the ethnobotany and ethnozoology of Peru and James Kus's work on prehistoric coastal Peruvian irrigation. There were also such particular contributions by United States geographers as David Basile (Ecuadorian agriculture), Don Hoy (population pressure), Greg Knapp and Norbert Psuty (coastal Peruvian agriculture), James Parsons and Bill Denevan (raised fields), Homer Aschmann (Guajiro Indians), Norman Stewart (Andean transhumance), and Stu White (Andean logging). To these can be added works by the British geographers Robin Donkin and David Preston.

At the 1980 meeting, Denevan noted the more diversified and theoretical approaches to traditional food production by geographers and the potential for geographers to participate in development initiatives which respected rather than tried to eliminate the small farmer. Patrick seconded this point of view, pointing out the significance of love of place and of agriculture as a way of life. Davidson emphasized the special significance of ethnic groups and their connection with the land. Knapp pointed out the universality of subsistence production in society and Kus and Turner called for more interdisciplinary research projects and syntheses.

To a considerable extent many of the potentials for cultural geography have been realized with new interdisciplinary projects, ethnic studies, and theoretically and methodologically innovative studies of agricultural landforms and strategies. Many geographers have continued to adhere to a perspective that values and respects rural Latin Americans, mistrusting socio-economic

transformations that result in a loss of cultural or ecological values. In addition, Carl Sauer's Andean letters were published in 1982 as a wonderful memorial to his one journey to the region (West 1982).

NEW CONTEXTS IN THE 1980S

During the 1980s, democratic regimes replaced dictatorial regimes in all the Andean countries (albeit very late in the decade for Chile), while the prospects for orthodox Marxist social revolutions became even dimmer. Despite (or rather because of) economic depressions and debt crises, intellectuals and regimes moved towards a more eclectic approach to problem solving, more receptive to the private sector and non-governmental organizations.

As urban migration continued without corresponding growth in urban per capita income, the urban bias in staple price policy became increasingly entrenched, contributing to rural malaise and outmigration and discouraging **[end p. 165]** agricultural modernization (Lawson and Brown 1988). The problems of the *status quo*, coupled with the absence of large coherent social classes capable of supporting a non-pluralist centralized state, resulted in new interests in decentralized solutions, the informal sector, ethnicity, and environmental and neighborhood issues. These in turn resulted in an unprecedented atmosphere of acceptance for the characteristic projects of cultural geographers; most of the geographers in this review essay participated in (or were drafted into) Andean and international development and institutional projects, with a surprising degree of freedom and opportunity to voice dissenting opinions and a surprising degree of welcome by diverse local institutions.

CULTURAL AND HISTORICAL GEOGRAPHY IN THE ANDES

In Peru, two externally-trained professional geographers have contributed to cultural and historical studies of that country: Dr. Hildegardo Córdova and Dr. Nicole Bernex de Falen, both now members of the faculty of the Catholic University in Lima. Peru has annual geography meetings and sponsored the first International Geographical Conference of the Americas, held in Lima in 1988, which included several subsequently published papers in cultural geography (Bernex de Falen 1989; Denevan 1987; Gade 1988; Knapp 1988d).

Peru, of course, possesses an outstanding community of historians, archaeologists, anthropologists and technical experts dedicated to the study of the country's culture and agriculture. During the last decade the reviews *Revista Andina, Allpanchis, Histórica, and Antropológica*, among others, have published relevant articles.

In Ecuador, geographers have traditionally been attracted to the Panamerican Center for Geographical Investigations and Studies (CEPEIGE), strategically located in the same building as the Military Geographic Institute (IGM) and the Panamerican Institute for Geography and History (IPGH). Cultural publications have been facilitated by the Salesian Fathers and their press, Abya Yala, which publishes the magazine *Hombre y Ambiente: El Punto de Vista Indígena.* An important event was a meeting in 1986 associated with the anniversary of the La Condamine expedition to Ecuador, which was specifically oriented to geographical topics (Comité Editorial

de Cultura 1986). Geography is well represented in the country's premier university.

The Americanist Congress in 1987 drew many cultural geographers to Bogotá, Colombia, in sessions with papers that have been subsequently published (Denevan, Mathewson, and Knapp 1987).

In Argentina, cultural geography has been supported by Alfredo Bolsi (Maeder and Bolsi 1980, 1982), but otherwise cultural and historical geography is relatively little pursued in the southern Andes (Reboratti 1982), although relevant works by non-geographers exist.

OTHER STUDY CENTERS

French geographers such as Pierre Gondard (Gondard 1986; Gondard and López 1983) and Olivier Dollfus (Dollfus 1981) have contributed to the study of Andean culture and history, often sharing their research with local colleagues. In Britain, David Preston (Preston 1984) and Richard Smith (Smith 1987) have made the University of Leeds their country's center of Andean cultural-geographical research. Shozo Masuda, Izumi Misada, and their Japanese colleagues have made the Japanese National Museum of Ethnology (Osaka) and University of Tokyo major centers of Andean cultural research.

In the United States, the major center of Andeanist cultural and historical geography has been the University of Wisconsin campuses at Madison and Milwaukee; the University of Illinois (anthropology rather than geography) has been an outlier of this complex. Other centers of Andeanist cultural and historical geography have included Syracuse University and also the anthropology department at Cornell and the University of Texas at Austin. The University of California at Berkeley, previously a major center of this focus, now seems likely to be moving in a different direction. North Carolina has been a waystation for geographers for this focus but does not have a continuing commitment.

RESEARCH THEMES

In 1980, the major themes of cultural geographic research were defined as traditional food production (shifting cultivation, cultivated plants, house gardens, intensive agriculture, subsistence complexes, agricultural change, ecological zonation, diet, perception, resource management and viability of traditional systems), pre-hispanic agriculture and ethnogeography (including cultural history). It can be said that all of these themes have continued to be explored, in many cases with unprecedented rigor.

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TRADITIONAL FOOD PRODUCTION

In the 1980s, studies of traditional food production have tended to have a historical and archaeological focus as well. Any division is somewhat arbitrary, but studies with contemporary components are included here.

Such a processual study of the processes of adaptation has tended to mean a focus on the component strategies of subsistence, identifying the salient modifications of the landscape and their efficiencies and functions (Denevan 1980a, 1980b, 1982-1983; Turner and Denevan 1985).

Northern highland Ecuador has constituted a notable laboratory for the study of traditional subsistence strategies. Knapp's dissertation research in 1980-1981 (Knapp 1984) concerned the documentation of the relative efficiencies of traditional agricultural practices, coupled with the exploration of the economic rationality of Andean land use, past and present. Subsequent research in Ecuador in 1984-1987 has resulted in the refinement of the models and incorporation of new data (Knapp 1991).

The French geographer Pierre Gondard (1984) has greatly contributed to the understanding of contemporary Ecuadorian rural strategies, through long term field work and his association with French and Ecuadorian resource agencies.

Research by Patricia Mothes (1986, 1987) in northern highland Ecuador for the first time described in detail the functioning and history of a particular Andean irrigation canal. This study, and a parallel regional survey of other traditional canals in the vicinity (Knapp 1986, 1987c), suggested that traditional highland canals in cemented volcanic ash are efficient and appropriate technical means of irrigation and soil fertility improvement.

In addition to the Ecuadorian irrigation research just cited, numerous other studies of highland Andean irrigation have been published in the 1980s (Antúñez de Mayolo 1986; Gelles 1986; Sherbondy 1986).

In July, 1984, the Colca valley Abandoned Terrace Project was initiated under the leadership of William Denevan. Participants came to include historians, anthropologists, archaeologists, a palynologist, and several geographers. The results of this project were published in a preliminary report (Denevan 1986b) and a second volume publishing further analysis of the data (Denevan 1988c). Especially important is Denevan's review (Denevan 1988d) of the now voluminous literature on the Colca Valley. In a brief discussion of project results, Denevan (Denevan 1988a) suggests that the first irrigated terraces were built as a response to a climatically dry period, and remained in use as long as demographic pressure, market opportunities and crop choice made them attractive. Other articles by geographers in these volumes address the 1931 Shipee-Johnson expedition (Denevan 1988b), contemporary agriculture and cattle in Achoma (Mahaffey and Webber 1988; Webber 1988), agriculture in Coporaque (Córdova Aguilar, Gonzalez Ilizarbe and Guevara Tello 1986) and other topics (Denevan 1986c; Denevan and Hartwig 1986; Denevan, Treacy and Sandor 1986). Results of this project have also been published elsewhere (Denevan 1985, 1986a, 1987, 1988e).

The late John Treacy's dissertation on terracing and irrigation in the Colca valley of southern Peru (Treacy 1989b) corresponds with the mainstream concerns of geographical cultural ecology. This study relates terrace use and disuse to factors of population density and intensification, trade and social factors. In particular, it asserts that terracing *per se* is processually insignificant except as a byproduct of irrigation. Treacy's other work in the Colca valley is also a notable

memorial of a life tragically cut short (Treacy 1986, 1987a, 1987b, 1988a, 1988b, 1989a; Treacy and Denevan 1986; Waugh and Treacy 1986). Anthropologist David Guillet's article on Colca terracing and accompanying commentaries in *Current Anthropology* is also noteworthy (Guillet 1987).

Another major family of projects involved the Paucartambo valley of southern Peru. Karl Zimmerer's dissertation attains a new level of sophistication in the study of crop varieties in the Andes (Zimmerer 1988), suggesting that pools of local diversity are preserved not for functional ecological reasons but rather through historical and topographical accidents. Zimmerer has also attempted to relate the concepts of 1980s social theory to Andean cultural geography (Zimmerer 1991).

Wayne Bernhardson has published the results of his extensive research on herding on the Chile-Bolivia border (Bernhardson 1985a, 1985b, 1986). In Colombia, the late Robert Eidt studied rural society and land use change (Eidt 1981).

Robert Kent has worked on the specific problem of the Africanized honeybee in Peru, which he has found to have had no significant effects on apiary practice or location (Kent 1983). Subsequent articles have explored further aspects of beekeeping in Peru (Kent 1986, 1988, 1989).

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Chrisoph Stadel (1985, 1986, 1989) has studied how traditional farmers in the central highlands of Ecuador cope with stress, including altitude-related factors. Hildegardo Córdova Aguilar's study of northern highland Peru (Córdova Aguilar 1982) suggested that road building of itself is not enough to stimulate development, but that true development requires an overall improvement in the conditions of life.

The ecological anthropologist Enrique Mayer has produced interesting studies on land use in the Mantaro valley and (together with César Fonseca) in the Cañete valley of central Peru. His article of 1985 explores the use of the concept of "production zone" to encapsulate the coincidence of social and ecological factors in land management (Mayer 1985).

In coastal Peru, ethnographic work to illuminate the themes of traditional agricultural technology has been collected in an edited volume (Browman 1987), but geographers have tended to neglect this topic, as opposed to their active work on archaeological problems.

TRADITIONAL FOOD DISTRIBUTION AND PREPARATION AND NONAGRICULTURAL RESOURCES

Some geographical studies have moved beyond food production to food distribution (Greenow and Muñiz 1988; Stadel and Moya 1988) and food preparation. Anthropologist Mary Weismantel has produced an innovative study of Ecuadorian Indian cuisine as a communication system (Weismantel 1988), a point of view which has been partly contested by the geographer Schroeder (Schroeder 1990). The prehistoric context of food and nutrition has been explored by the

Peruvian geographer Antúñez de Mayolo (Antúñez de Mayolo 1981).

Geographers studying traditional resource utilization in the Andes have tended to focus on agriculture. Such rich topics as medicinal resource use, hunting, wild food gathering, ocean resource use and forestry have been neglected (although not entirely so by non-geographers). Other rich untapped resource frontiers include urban cultural biogeography, elite resource utilization and environmental perception.

TRADITIONAL PEOPLES AND THE ENVIRONMENT

The British geographer Martin Parry organized a study of the potential impacts of global climatic change on Ecuadorian highland agriculture. This project resulted in a number of English-language publications (Knapp 1988c, 1988e; Knapp and Cañadas 1988a, 1988b), as well as a special meeting organized in Ecuador in 1987 to promote its results. The project was notable for reflecting some of the methodology of cultural ecology, recommending attention to traditional and prehistoric adaptive strategies, and advising against certain kinds of outside intervention.

A study by Córdova and Bernex de Falen punctured some myths on the use of goats in this environment (Córdova Aguilar and Bernex de Falen 1984). Stuart White looked at the origins of wild vegetation patterns (White 1985). Javier Pulgar Vidal has continued to update his seminal cultural biogeography of the Andes (Pulgar Vidal 1987). Bernhardson looked at peasants and conservation in the south central Andes (Bernhardson 1986). In general, however, cultural geographers have neglected specifically environmental issues in the Andes in recent years, including themes of national parks, leaving the exploration of these matters to others.

PRE-HISPANIC AND COLONIAL AGRICULTURAL AND SETTLEMENT

For an overview of recent research on the prehistoric period, readers are referred to a review article by Keatinge (1988). Mathewson has discussed Humboldt as an early landscape archaeologist (Mathewson 1986).

Research on prehistoric coastal irrigation has continued (Benfer et al. 1987). Geographers have participated in significant debates concerning the functioning of the Chicama-Moche intervalley canal (Farrington 1980, 1983; Kus 1980, 1984), intravalley canal systems (Park 1983) and alternatives to canals such as the so-called sunken fields of Chilca Symposium (Knapp 1982, 1983; Smith 1983b).

A symposium concerning prehistoric land use in the Andes was convened at the 1985 Americanists' Congress in Bogotá, Colombia. This meeting was extraordinary in combining sessions devoted to previously undocumented regions, and has been published in almost its entirety (Denevan, Mathewson and Knapp 1987).

One section of this meeting was devoted to the Colca valley and has already been cited here, along with other key references of the Colca project. Another section was devoted to the Guayas basin of Ecuador. The major study of the "landscape ecology" of this basin is Kent Mathewson's

dissertation (Denevan, Mathewson and Whitten 1985; Mathewson 1987b), based on a field research project in the early 1980s (Mathewson 1982, 1985). Papers **[end p. 168]** in the Bogotá meeting contributed to this project (Mathewson 1987a; Muse and Quintero 1987; Parsons and Shlemon 1982, 1987).

The symposium participants also discussed raised field sites in lowland Colombia (Eidt 1984; Parsons 1985; Plazas and Falchetti 1981, 1987).

The Bogota meeting provided the opportunity to present research results on prehispanic raised and ditched fields in the northern Andes (Broadbent 1987; Knapp and Preston 1987) Prehispanic agricultural landforms in highland Ecuador and Colombia have been also subject to a number of other studies (Batchelor 1980; Gondard and López 1983; Knapp 1981a, 1988a, 1988b, n.d.; Knapp and Denevan 1985; Knapp and Ryder 1983, 1985; Preston 1984).

The meeting in Bogota provided the opportunity for the presentation of more recent research on raised fields around Lake Titicaca, following earlier work in the region by Denevan, Smith, Hamilton, and by archaeologist Lennon (Lennon 1982, 1983). Kay Candler and Clark Erickson, anthropologists strongly influenced by cultural geographers, have done much of the recent research (Erickson 1988). Erickson's work is unusual for rejecting the usual economic framework used to analyze the rationality of agricultural intensification, and for asserting that raised fields can be labor efficient. The agronomist Ignacio Garaycochea has also published reports on the rehabilitation of Titicaca raised fields (Garaycochea 1987). Smith has also studied raised field functions (Smith 1983a). More recently anthropologist Alan Kolata and his colleagues have begun publishing studies of raised fields on the Bolivian side of Lake Titicaca; some of these break new methodological ground in the study of agronomic functions (Kolata 1989). Raised fields have also been found on the Peruvian coast (Pozorski and Pozorski 1983).

The 1980s have been a transitional time for the study of the cultural geography of the colonial period. Robert West and James Parsons were noteworthy for their past studies of this topic, but have been active in other directions during the 1980s.

Source documents for colonial geography were studied by Edwards (Edwards 1980) and Robinson (Robinson 1988).

Noble David Cook studied the demographic collapse of colonial Peru (Cook 1982). The reconstruction of colonial Andean settlement patterns and agricultural strategies has been the subject of excellent studies by Dan Gade (Gade and Escobar 1982) and by a younger generation of ethnohistorians who have often worked closely with geographers and pursued geographical topics (Caillavet 1981; Caillavet 1983; Ramón Valarezo 1986; Salomon 1986; Salomon and Grosboll 1986).

Nineteenth and early twentieth century historical geography of the Andes has been especially neglected, except insofar as these periods have been included in other studies.

HISTORICAL AND CONTEMPORARY ETHNOGEOGRAPHY

Dan Gade has continued his outstanding life project to contribute to an elucidation of the components of the folk culture of the Andes (Gade 1983, 1987, 1988). Taken together his research has defined and provided stringent goals for Andeanist cultural geography for numerous younger schools. Much of his work can be considered as "ethnogeography," the geographical equivalent to ethnohistory.

White's dissertation (White 1981) provides a narrative of highland Peruvian Indian life as unitary, complete and valuable in its own right; his innovative use of fiction in a dissertation is noteworthy. White spent three years in a small community; his mastery of local language and mores is unmatched among Andeanist geographers; and his dissertation may well prove prophetic as geographers move towards an increasing appreciation of culture as a system of meaning as well as a system of survival.

Faron has pointed out that the words "peasant" or "*campesino*" mean little in a context where ethnicity dominates (Faron 1985). Indeed, as Stutzman has noted (Stutzman 1981), ethnicity functions in the Andes as a counter-cultural force, not so much opposition to the state as an alternative to the state.

At a somewhat larger scale, the peculiar secret of Andean ethnogeography has been the lack of any consensus on the salient ethnic groups and the absence of ethnic maps of the region. Censuses are surprisingly poor sources of ethnic information. Some countries (Chile, Argentina) have not asked ethnic questions on major national censuses; others (Bolivia, Ecuador, Colombia) have rarely asked such questions, and they published the results with questionable adequacy and quality. In this context, Diez Astete, Mayer and Knapp have attempted to use available **[end p. 169]** information to provide maps or estimates of relevant Andean ethnic groups (Diez Astete 1986; Knapp 1987a, 1987b, 1988d, 1989; Mayer and Masferrer 1979). An attempt to undertake a cultural atlas of Argentina exists as a prospectus (Latour de Botas and Quereilhac de Kussrow 1984).

In the late 1970s, Norman Whitten assembled an outstanding group of contributors to a volume discussing ethnicity in Ecuador (Whitten 1981). The geographer Ray Bromley contributed an article on marketing and ethnicity to this volume (Bromley 1981).

A number of interesting Andean cultural topics have been explored primarily by anthropologists, with little participation by geographers. These include the history of hunting, crop plants and domesticated animals; the role of disasters and hazards in molding cultural history; the history of the spatial organization of the Andes as a cultural product; the history of coast-highland interactions; and the cultural and ecological discussions of state and chiefdom formation and expansion.

PROSPECT

There might be a tendency for studies to shift outside of Peru as research conditions in that country become more difficult. Ecuador and Bolivia seem to the most immediate beneficiaries of this shift, as projects in Venezuela, Colombia, Chile and Argentina are still scarce.

Since Andeanist geography has been productive, influential and successful in illuminating Andean lifeways, there may seem to be little need to substantially alter the theoretical frameworks informing this research. To a remarkable extent, the geographers cited in this survey respect each other's work and have avoided splitting into divergent theoretical camps. Social theory and political economy have been salient sources of ideas and terms, but without crowding out detailed research on regional environmental and cultural history and locally specific adaptive strategies.

There is no question that gender issues will be increasingly important. Recent work by geographers has reflected a sympathy and appreciation for women's unique and historically ignored cultural contributions to the Andes (Mothes 1986, 1987; Schroeder 1990).

Apart from the satisfaction that "one of our own" has mastered a powerful new vocabulary, new influences are unlikely to change the direction already established of sound field work coupled with a basic predisposition towards valorizing the means and goals of specific local Andean peoples.

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