THE AMAZON VALLEY AND HUMAN KIND:
A MEDITATION ON RAPACITY

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As readers of newspapers and watchers of TV most of you will, over the past quarter of a century, have gotten a notion at least of the scandalous side of the Brazilian government's massive effort to integrate the Amazon Valley with its peoples and resources into the Brazilian national economy. The hastily-planned construction of several thousands of miles of trans-Amazonian highway through the rainforest from east to west and north to south, the settlement of hundreds of thousands of hungry peasants from other parts of the country along those highways without support services of any kind, the wholesale giveaway of vast tracts of land for exploitation by the American tycoon D.K. Ludwig and by the King Ranch, the Georgia Pacific Corporation, U.S. & Bethlehem Steel and the Volkswagen Corporation among many others; the resulting accelerated destruction of the world's largest forest reserve; the opening of giant gold mines with their armies of half-naked, mud-covered workers so unforgettably photographed by Sebastião Salgado, the recent murders of the rubber tappers' union leader Chico Mendes and other resistance leaders; and above all, the relentless ethnocidal and even genocidal pressure on the Yanoama and others among the few remaining Native American peoples of the region; all of these have received worldwide publicity. Dimensions of the region's problems can also be deduced from the treatment of Amazonian subjects in films such as "Fitzcarraldo" & "Burden of Dreams," or "At Play in the Fields of the Lord."

The world's largest wilderness, containing a third of all the world's forests and perhaps a fifth of its fresh water supply at any given moment in time, has by now been thrown wide open to capitalist development. This has been done, primarily by the Brazilian government, in the hope that Brazilian and multinational corporations in search of profit would lead the way to corralling the Amazon's vast resources into the government's effort to fazer o Brasil grande, as they used to say in the days of the military dictatorship -- that is to realize the country's vast potential and establish it as a great world power, if possible by the end of the 20th century. Something similar(without the world power dimension) has been

underway on a smaller scale in the Amazonian territories of Brazil's neighbors Bolivia, Peru, Ecuador, Colombia, Venezuela, Guyana, Suriname and French Guiana -- with the result that the Amazon Valley as a whole (like the tropical forest regions of Central America, and of island Southeast Asia and central Africa) is an increasingly stressed region and one viewed by ecologists and environmental activists around the world as a region in serious crisis. This is, then, an extreme case study which is useful as such for the harsh light it can shed on the general question of capitalist development and its implications for the relationship between humanity & nature everywhere.

The background for today's brutal assault on Amazonia lies deep in the past, as I will try to show in a moment. The current round of activity may be traced to the spirited but largely unsuccessful effort of the U.S. and its allies to mobilize tropical production for World War II, which was followed by the establishment of a short-lived international agency that was to supervise the integrated development of the Amazon valley, and then by a series of ineffective programs through which the Brazilian "populist" governments of the1950's and early 60's tried to do the job alone. Then, following the U.S.-sponsored military coup of 1964, the twenty-year Brazilian dictatorship made Amazonian development one of its top priorities. That campaign was directed through a powerful new agency called SUDAM and its well-endowed research division the INPA. They studied the natural and human resources of Amazonia, provided credits to entrepreneurs through a regional development bank, and attracted private capital into the region by means of an ingenious system of tax relief for any Brazilians who invested there. When I was in Belém and Manaus in 1970 doing research for my dissertation, I was impressed by the fact that people from all walks of life were at pains to let me know that in their opinion the generals were the first government in the history of the country which had ever really "done anything" for Amazonia.

Now I am not a specialist in 20th-century economic development, but a historian who has been interested in the changing social and economic arrangements in the Amazon region over the past four centuries, and particularly in the colonial period. My information about what is going on today comes mostly from the newspapers and popular magazines. But over the past twenty years, the more I have read about the past and present together of this fascinating region, the more I have been struck by the significance of Amazonian history as a paradigm for the entire history of the unhealthy and dysfunctional,

still very threatening relationship between the world and the imperialist West. The lessons that I am culling from this study seem to me to be applicable, broadly speaking, to discussions around the world about the whole relationship between humanity and nature on the one hand, and between capital and the state and nature on the other.

What I want to do here first is offer a few remarks about the Amazon Valley as a realm of nature, and about the natural history of human beings within it, and then review for you some episodes from the history of so-called "developmentalism" in Amazonia as a way of raising questions about the present. At the end, I will offer some suggestions about how I think the relationship between humanity and Amazonia might have been conducted at every stage, and how it ought to develop in the future. These, I believe, have some applicability to our relationship with nature in every corner of the planet.

Ever since Europeans first contemplated the Amazon Valley in the 16th century, a vigorous debate has been underway between them about whether the region is a Paradise or a Green Hell. There was more plant growth and fish and game there than the white men had ever seen before; but then the land was so plagued with mosquitos, alligators and horrendous serpents that it sometimes seemed to them to be no more than an endless stinking swamp. The truth, of course, is that Amazonia has always been both Paradise and Hell -- or perhaps that it was a Paradise to start with, and has been turned progressively into a Hell by the actions of outsiders. But whichever interpretation they have preferred, visitors have never ceased to be amazed by the size of the South American rain forest and by its apparent indestructibility. More than any other habitat in our hemisphere, with the possible exceptions of the tundras and the high Andean páramos, Amazonia has been a region imposing its own terms on humanity rather than having terms imposed on it. The notion that anyone might really "conquer" the Valley has never enjoyed currency among those who have actually spent their lives working to wrest some semblance of a living from it -- at least not at any period before the present. The river and the rainforest have seemed to be both tough and changeless to all.

In view of all this, it is startling to discover that from the biologists' point of view, the Amazon Valley is an exceptionally delicate ecosystem. Indeed it is so fragile, or so it now appears, that there are serious and well-informed people who doubt that if present trends continue, the rainforest can survive much beyond the turn of the 21st century. One key to this anomaly is that with localized exceptions, the soils of

exuberantly green Amazonia are acidic and poor in nutrients. The few soluble minerals available over most of the region are kept permanently above ground in the biomass or fauna and flora, by a complex series of interactions which includes holding up a leaf canopy to protect the soil from the direct action of the sun and rain. As everyone probably knows by now, when this lush forest growth is cut and burned and the land is planted to crops, there are good harvests for a year or two -- but quickly thereafter the soil turns into a sterile hardpan or laterite. This, if it is not immediately adjacent to still-standing forest which in a few years' time can reclaim it, will soon be covered with a wiry savannah grass which makes at best a poor pasture for cattle. Any large-scale cutting of tropical rainforest will therefore lead inevitably to the exposure and rapid destruction of the soil; and on such exposed soil the constant leaching of soil nutrients by the rain will make fertilization for agricultural purposes uneconomical.

Another line of argument for the fragility of the rain forest ecosystem is the notion that the extraordinary proliferation of species which it contains, and the sparse dispersal of individuals of each species, constitute a necessary condition for these species' survival. There are more species of plants, animals and insects per square mile in Amazonia than anywhere else on earth, coexisting year in and year out in a stable climate which provides ample sunlight, warmth and water for maximum growth in all seasons. Because of the poverty of the soil, these plants and animals must rely on each other more than they do elsewhere -- and the incredible complexity of their interreliance over large areas makes the system even more vulnerable to the changes imposed by human beings than the less complex ecosystems of the temperate zones have proved to be. The trees and animals of the natural forest have always been difficult to harvest on a commercial scale in Amazonia, because they are too widely scattered for easy access. But when they are pruned out and crowded in the interest of efficient exploitation, for example by the establishment of a rubber plantation or a cacao orchard, the elimination of some species will lead to the proliferation of others -- in practice, especially of voracious insects. This, in turn, can lead to the commercially desirable species being wiped out altogether.

To evoke the marvellous complexity of Amazonian nature and the delicacy of its ecological balance is not to suggest that human beings cannot live in Amazonia and even thrive there. Nor is it to suggest that by means of technological ingenuity cannot overcome the many problems that humanity still

faces in its effort to carve out a sustainable livelihood in the tropical forest. Very large numbers of Native American people lived in the valley before the arrival of the Europeans -- some of them sparsely settled in the gallery forests and along the sterile silt-free "black" rivers which rise in them, and some of them densely settled on the narrow strips of alluvial land which lie along the silt-bearing rivers rising in the Andes. The peoples of the gloomy terra firme lived by hunting and gathering, and by farming on ever-shifting tiny plots slashed and burned out of the forest. The peoples of the teeming, annually flooded várzeas could do all of that, while at the same time producing much greater quantities of food to feed more people by farming alluvial mudflats and exploiting the giant fish, turtle and manatee of their rivers as well.

Both of these groups became very skilled at living in the Amazonian environment. They utilized resources efficiently, and they fed themselves and produced goods for a wide-ranging trade without destroying the rain-forest -- even though they had lived there and wandered all over the region for perhaps as many as 20,000 years. But these peoples stayed spread out; they used only hand tools; they faced the environment directly as individuals and small communities; they limited the growth of their population; they were satisfied with production for local and regional consumption rather than for long-distance export; and above all, rather than trying to control the natural environment (or believing that they could or ought to control it), they used their intelligences to figure out how to live comfortably within that environment and as part of it.

By patient experimentation, these peoples learned a great deal. For example, the várzea dwellers used to hunt giant turtles in the dry season and keep them in huge pens built on high land so as to be able to eat them during the lean months of the flood. They would bury a cache of the manioc tubers they harvested just before each flood, so as to have food to eat while the new crop was maturing in the following year. In the absence of salt, they learned how to smoke meat slowly so that it would keep for a month or more even in the Amazonian heat. They acquired a vast knowledge of the chemical and medicinal properties of forest plants. They wove cloth of tree-cotton; they invented the mosquito netting and discovered the uses of raw rubber. They oculd bring down a bird at a hundred yards with a dart from an enormous blowgun, and so on.

Down to the mid-19th century, the survival in Amazonia even of the most ethnocentric of European outsiders required adapting to that traditional way of life, or living directly off the work of others who knew it. A folk culture blending European with Indian ideas and techniques evolved slowly -- especially among the racially mixed caboclo people, the regional peasantry, whose numbers grew slowly along the main river transport routes. The creation of this folk culture was no "triumph of civilization;" symbolically, the language of colonial Amazonia society was the Tupían lingua geral spoken in the Catholic missions rather than Portuguese. The wealthiest people in the colony were obliged to travel in Indian canoes, sleep in Indian hammocks and eat their bits of meat or fish with handfuls of farinha de mandioca, the staple foodstuff made by Indian women from the tubers of the poisonous manioc plant. They lived pretty much as the natives did. Whatever the missionaries and government functionaries might try to put across, it was clear to everybody on the scene that men and women from elsewhere had first to adapt to Amazonia, and that only then could they try to figure out how to work a few European amenities into their way of life.

Nevertheless, for two centuries before the 19th century, Amazonia existed as a European colony. It was a miserably poor colony, one whose Native American slave labor force was chronically subject to devastation by European epidemics, while being ground down by malnutrition and by the harsh conditions of forced labor. This required a relentless recruitment of new Indian slaves, people from every accessible area in the Valley, to replace those who died after a year or two of servitude to the Europeans. And the Indian slave trade in turn was responsible for the complete depopulation of the várzeas of the main stream and several of the larger tributaries by the middle of the 18th century. A peculiar feature of this life-destroying process in Amazonia was that in a sense it was all to no purpose. No one managed to build a great fortune there in colonial times; and the revenues from the colony's trade were never sufficient even to pay the costs of its administration.

Because of its colonial status, however, the Amazon valley was subjected time and time again to the outlandish schemes of development planners from Europe, men determined to extract wealth from the region for the benefit of the Portuguese state and of the colonial ruling class. The first such plan, inspired by the early prosperity of coastal Brazil, was that Amazonia should become a great sugar plantation.

Landed estates were set up; thousands of Native Amazonians were enslaved and put to work on them; and a great many lives were lost before it was grudgingly acknowledged that the soils were too poor, and the problems of marketing were too great for any successful development of commercial agriculture. Sugar planting continued for two more centuries, as did the violent recruitment of Indians to do the work, but after the first decades the main product of this industry was a white-lightning rum which had been found useful for distracting the hunger and dulling the sensibilities of Indian workmen.

Then came the extractive economy, which was pioneered by Jesuit missionaries and then reorganized in the late18th century for direct administration by the State. The base for this activity was in a few dozen closely supervised settlements of so-called "domestic Indians" engaged in subsistence agriculture, from which canoe crews went off on annual expeditions up the river to harvest the wild stands of cacao, vanilla & sarsaparilla. These collecting crews were so heedless in their exploitation of the "precious drugs" of the forest, that before long the most accessible regions had ceased to produce for them. Trees had been cut down recklessly, or stripped of all their bark to get a quick cargo; shipments to Europe were so notorious for their adulteration with green or rotted fruit and bark, that before long they had few takers. By the early19th century the extractive economy languished, and there were few places where the forest's products could still be gathered on a commercial basis.

Alongside the extractive economy there developed a system for the commercialization of turtle oil, which the Native Amazonians had learned to extract from the eggs laid by the huge river turtles on certain favored beaches each year. Responding to the market for cooking and lamp oil in Belém and the other Amazonian towns, and a smaller market for the preserved meat of turtles, gangs of hunters employed by the state or by private entrepreneurs bloodied the beaches in an annual orgy of death during a period of several decades -- until the Amazonian turtle went the way of the sperm whale and grew too scarce for large-scale exploitation. Warnings of the danger of over-exploiting all of these resources were issued by sharp-minded observers of the colonial economy from time to time beginning in the 17th century; but as things went in those days (and as they still go today), such sober counsellors could never prevail over the ambitions of missionaries, entrepreneurs or public functionaries bent on exploiting the abundant resources of Amazonia for short-term profit.

An especially odd episode in the early history of developmentalism in Amazonia was an effort to raise indigo and produce its brilliant blue dye for export to Europe, which was launched in the 1780's on the upper Rio Negro some 500 miles above Manaus near the modern border with Venezuela. This remote area had already been seriously depopulated by the Indian slave trade, and possessed soils which were if anything even less well suited to permanent cultivation than those in much of the rest of the Amazon Valley. But an energetic governor, a man much admired at the time for his vision and devotion to the interests of the state (though cordially hated by the working people on whom fell the implementation of his projects), learned that the wild grass from which this expensive dyestuff was made had been found growing in that God-forsaken place. So he moved Heaven and earth to transport the necessary vats and other equipment to the spot, and provide land and technical assistance to the aspiring planters. Indians were corralled into work gangs; trees were cut and fields staked out and planted; an indigo manufactory was installed; and a year later a few pounds of somewhat defective dye were sent off to Lisbon for approval. Production increased slowly but steadily for a very few years; but within a decade, the old story had repeated itself. The land gave out; the plantations were abandoned; production plummeted; and the surviving Indian workers faded back into the forest.

The same development-minded governor, undaunted, then had a small herd of European-style cattle transported by canoe up the Amazon and Negro, and with great difficulty through the rapids of the Rio Branco to the savannahs of the Brazil-Guyana frontier region, in hopes of setting up prosperous ranches there -- in country which had also been cleared of people by the slave trade only a few years before. The scrawny beasts found a propitious ecological niche for themselves and multiplied vastly; but since for another century and a half there was no way to market their meat or their hides or tallow, the cattle went wild and the remaining Indians and caboclos would simply hunt them like wild game. Here once more, an outsider's confident project for "development" came to nothing.

Many more such stories can be told about colonial Amazonia, all of them leading to the same conclusion: that plans for economic and social development dreamed up by outsiders on the basis of assumptions drawn from experience elsewhere, were certain to fail. Yet these experiences were not cumulative; decision-makers were seldom if ever influenced to any significant degree by lessons learned

from previous failures. At any moment from the 16th century to the present, of course, the place to begin thinking about how to increase the production of Amazonia would have been to ask questions of the ignorant but experienced folk who had somehow learned to survive there, and by so doing learn how things could and could not be done. But these were the last people to whom the missionaries, entrepreneurs or public officials of colonial times were likely to turn for advice; and that obvious step was never taken. By the time Brazil gained its independence in the 1820's, the Amazon region was in such economic doldrums that not even the visionaries of the new nation had much in the way of plans for it. What little economic infrastructure remained there was dealt a serious blow during the 1830's, when a region-wide popular uprising known as the Cabanagem was followed by a bloody repression. After that, it was a long time before production of any kind returned to the pre-independence level.

Then, late in the 19th century, the Amazon Valley lost its backwater quality, and the comparative autonomy of its historical experience, and was for the first time effectively plugged in to the world economy. Enterprise and labor were decisively reoriented toward the effort to supply natural rubber from the ubiquitous hevea brasiliensis tree, to the European and American markets. The small population of surviving Indians and caboclos were swamped by immigrants from the drought-stricken Northeast of Brazil, men who came to walk the lonely rubber-tappers' trails for a miserable pittance. Many or perhaps most of these men died on the trails within a few years of their arrival, offering up their lives to make fabulous fortunes for a few successful entrepreneurs. It was in those days, when the Amazon region was producing an important part of Brazil's total export earnings, that the region first began to be taken seriously by officials in Rio de Janeiro. Curiously, this revived interest did not at first produce any new wave of developmentalist projects. As long as the rubber boom lasted, riches enough were pouring forth from an only somewhat modified form of the traditional extractive system of exploitation. The government was therefore reluctant to rock the boat. Then, however, on the eve of World War I, the hevea tree was successfully transported to plantations in Southeast Asia, where labor was even cheaper than in Amazonia. The Brazilian boom collapsed, as the price of rubber plummeted from $3.00 to $.03 a pound in just two decades.

During the rubber years one curious new experiment in development had been attempted, one which ought to have taught the planners their lesson for once and for all. In the 1890's, a massive attempt was made to attract settlers to a stretch of forested land called the Bragantina, south and east of the mouth of the great river, where it was hoped that they might raise food crops to feed the fast-growing capital city of Belém do Pará (the center for rubber exports), as well as exportable surpluses of sugar, rice, coffee and cacao. Some thirty settlements were laid out on 12,000 square miles of land. which was divided up into lots big enough to provide each pioneer with a comfortable "family farm." Advertisements brought settlers from Europe as well as from the hungry Northeast of Brazil, all of whom were promised a grubstake which would carry them and their families until they could harvest a crop. In anticipation of a bustling trade in farm products from these homesteads, the state government of Pará then built a railroad at great expense, amid scandals of graft and incompetence. A few colonists actually came, and their numbers were subsequently increased by rounding up and loading any indigent Northeasterners found in Belém onto the train, and simply dumping them in the new towns. But the promised subsidies to farmers did not materialize; the forest was stubborn; the soils believed to be fertile proved barren; and within a few years the great experiment ground to a halt. The railroad lingered on, getting more and more rickety until it was finally closed for good in the 1960's. But none of the new towns of the Bragantina proved viable over the long run; and the only ones which survive today are those strung out along the new highway from Belém to São Luiz in Maranhão, which eke out a bare living by servicing the truck traffic. The European farmers who were with such great difficulty attracted to Amazonia (so, it was thought, that they might show the ignorant caboclos how to practice their superior methods of cultivation), for the most part either gave up and moved to Belém, or were obliged to imitate the old slash-and-burn practices of their caboclo neighbors in order to survive. The parallels between this boondoggle and the more recent schemes for settling hungry peasants along the Trans-Amazonian highway are astonishing; but this does not seem to have given the military bureaucrats of 1970's any pause.

Another saga of determined but ill-conceived developmentalism in Amazonia was Henry Ford's well-publicized experiment with rubber planting at Fordlandia on the lower river Tapajós, in the late 1920's. This was country which had been densely populated before the Europeans arrived, but which, despite its

comparatively rich soils, had been very sparsely settled since that time. Land was acquired and a labor force assembled with high wages for the time and place. A team of modern scientists and plantation managers set out their trees in neat rows like those of the Malayan rubber plantations, only to discover that any such concentration in Amazonia could only lead to uncontrollable crop blights. Ford pulled out after a decade of vain efforts to set that situation right; then the Brazilian government took over the project, and continued for a few years to look for blight-resistant varieties of rubber trees until it was obliged by high costs and low production to give up the effort as well.

From from the end of the rubber boom to the present, the Amazon Valley has been an embarrassment to Brazil -- a chronically impoverished and underdeveloped, vast region whose population suffers from severe malnutrition and from what is probably the widest and most stubborn array of public health problems in the Western Hemisphere. A region whose own educated and technically skilled people, and whose meager resources of capital, have tended to migrate to the dynamic south of Brazil rather than remaining to help solve the many problems that face them at home. A region whose development has increasingly seemed indispensable to Brazilian governments of whatever ideological orientation, and which has at the same time been the object of continuous scheming and plotting by foreigners. Twenty years ago, the folks at the Hudson Institute think tank in New York dreamed up an outlandish plan for turning the entire heartland of South America into a freshwater sea in the interests of development!

Many of those who have been scheming up schemes for the future of Amazonia in recent times, Brazilians included, are people who have never been to the region and have no sense at all of its reality. None of them, as far as one can tell, has any understanding at all of the course of its history. Some have travelled to Amazonia briefly by airplane, and found themselves impressed by its enormity and its apparent biological vitality, and by the probability that incalculable mineral resources lie beneath its troublesome soil. The American billionaire D.K. Ludwig bought an entire river valley from the military dictatorship of Brazil some twenty years ago, and invested hundreds of millions of dollars in pulling up its forests to make newsprint on papermill ships especially constructed for the purpose in Japan. This Jarí project turned hundreds of square miles of forest into pastures for cattle and built the world's largest system of rice paddies

before it finally went broke. To the modern planners and developers like Ludwig and his colleagues, the Amazon Valley has not looked at all like the "fragile ecosystem" of the environmentalist discourse. Rather, it has loomed large like a vast untapped and therefore intolerable resource, a challenge to the science, technology and organizational ability commanded by Western capitalists. To the anti-popular governments of the countries surrounding the Amazon rim, and to the foreign investors on whom these governments rely for development capital, the region has continued to prove irresistable.

Contemporary South American governments contemplating what looks to them like the Amazonian "vacuum" have given expression to other concerns as well. Among these are the following:

l) the wild doctrine of "geopolitics," inherited from German strategists of the 19th century, according to which any sparsely populated area is an open invitation to foreign invasion;

2) the need of military governments for giant projects in which the military with its manpower and organization can make themselves indispensable, however costly and inappropriate to the country's needs, and around which they can thereby mobilize popular support; and

3) the need of landed oligarchies for a viable-sounding alternative to land reform -- in this case, a frontier to which land-hungry peasants might be shipped to relieve pressures for a reform of land tenure in the heartlands. All of these motivations have blended into the world-wide ideology of developmentalism to produce the Brazilian, Bolivian, Peruvian, Ecuadorian, Colombian and Venezuelan drang nach amazonien of our times.

But there is another key feature of Amazonian developmentalism today, one which seems to me to have especially ominous implications for the future: Since the triumph of liberalism and positivism in the19th century, and despite brief flirtations with a populist mode of politics, all South American governments have been characterized in practice if not actually in theory, by a deep-running attitude of contempt and distrust towards their own people. This ruling-class attitude (not altogether different from that of the business and political elites of the United States towards the majority of our people) is the old Catholic hierarchical and aristocratic view inherited from colonialism, reinforced and at the same time deprived of its humane qualities by the Liberal and Positivist ideologies of success, survival of the fittest and rule by the educated. It is an attitude which has received a tremendous boost in the 20th century from

the U.S., due to this country's unprincipled policy of virtually unlimited support for the oligarchs and military technocrats of Latin America as imagined guarantors of the stability of investment climates. What the attitude has meant in the Amazonian context is that the people who make all the crucial decisions regarding the allocation of resources for the development of the region are people who, like their colonialist predecessors, are incapable either of turning to the Amazonian Indians and caboclos for answers to the key questions that face them, or of starting any project "where the people are at." Given the relationship of these Latin American technocrats with centers of world economic power, they are able still to maintain this illogical, dysfunctional and anti-historical relationship with Amazonian reality, and to move mountains and millions despite it.

So what do we have in Amazonia today? We have a Brazilian government which with its neighbors is bent on an ill-conceived program and environmentally irresponsible program of Amazonian "development" at almost any human cost, and which disposes of or can readily mobilize the resources with which to carry out this program. The implications of that situation for any ecosystem, and for any resident human population, would be brutal -- as we might guess on the basis of experience with the costs to humanity and nature of capitalist development our own very much tougher and less complex North American environment. There are reasons to believe that for Amazonia and its people, this program can be fatal -- that is, that it may turn the Amazon Valley into a vast wasteland within a relatively short period of time.

To say this is not to call out for a hands-off policy towards Amazonia and its resources (tempting though such an argument might be). The Amazon Valley is a spot on the face of this earth. It always has been, can still and will be effectively occupied by human beings struggling to live alongside the other creatures who proliferate there still today. Given our human propensity to multiply, it seems likely moreover that the Valley will be inhabited by larger humbers of people than have ever lived there before (its preconquest population having probably never been equalled until well into the 20th century). If there is useable iron ore, manganese, bauxite or petroleum under its forest floor, these resources will of course sooner or later have to be gotten out and put to use by human kind. So the question is not whether this should be done but under whose auspices, and how it can be done without destroying a fragile ecosystem

and depriving humanity of access to its millions of still-unravelled secrets, without cutting off the forest's output of oxygen and its infinite capacity to transform the sun's energy by means of photosynthesis, and without polluting the world's largest body of fresh water which is capable of providing fish to feed a large portion of humanity.

The lesson of the history which I have summed up for you very briefly here today is that the Amazon Valley, like most of the rest of the earth's surface, has been much exploited and never replenished by its relationship with the colonialist and capitalist worlds. It cannot continue to provide its riches to humanity for very much longer, if the present irrational system for its exploitation by the enterprising magnates of São Paulo and New York, is allowed to persist. The Valley, like the rest of the earth, can be carefully and responsibly exploited only by people who actually live on its land, who work and vie with that land day by day in person, and whose decisions regarding its future are guided by a sense of stewardship -- by an intimate awareness of the details of its reality, tempered by a measure of responsibility for its maintenance. Ideally, this exploitation should be carried not so much by self-reliant individuals in competition with one another, as by cooperative communities which control the means of their production, and which are themselves subject to exploitation and manipulation by no one.

This means that rather than seeking out foreign investment, the state ought to intervene to protect Amazonia against the greed of outsiders. Rather than ramming through impatiently conceived projects in the pursuit of national glory, the governments of the region ought to proceed patiently to devise modest projects in cooperation with the international human service agencies. The government's chief function in development ought to be to provide the vital health and educational services which the citizens of Amazonia require if they are to achieve their maximum potential as stewards of the land. It ought to enter into a permanent dialog with those at work day by day on the front lines in trying to solve the immense problems of survival and the organization of production which Amazonia represents, and ask them what kinds of support are needed from their government. The government ought to sponsor research designed to expand upon the extensive knowledge of Amazonian nature which is preserved even today by the surviving Indians and caboclos; and it ought to put this expanded knowledge at the disposal of the peoples of Amazonia whenever they require it. It ought to conceive of these front-line people as active collaborators in the work

of expanding the world's knowledge about how to produce goods and services in tropical places; and it ought to celebrate the past and future accomplishments of all participants in that process, recognizing that the principal function of government is to provide resources to them.

Production for export, and particularly the industrialization of local raw materials for export, must of course be encouraged in Amazonia. But if there is to be any hope for the survival of that delicate environment, the power over these operations must be placed in the hands of people who are responsible to and committed to the survival of that environment. For example, the disdain for subsistence farming expressed by all development planners from colonial times to the present must be dispelled. Subsistence in Amazonia is a major achievement in itself; and it is a necesary base for all other durable productive activity. It is precisely the people who can figure out how to subsist there, and little by little raise their own standards of living with reasonable kinds of assistance from outside, who are most likely in the long run to devise the means for producing goods for export on a sound and sustainable basis. Among present settlers, the people who ought perhaps to be watched most closely in this regard are the Japanese immigrant farmers who have been feeding themselves and supplying produce to all the urban markets of the region during the past half-century, and who have at the same time pioneered the commercial production of black pepper, rice, jute and even dairy products in the same period. These people have not made great fortunes, but they have contributed very substantially to proving that an Amazonian version of mixed family farming is possible, at least in the fertile areas of the várzea.

Contrary to the idea that prevails in the offices both of the South American governments and the trans-national corporations concerned with Amazonian development, it must be established that there is no hurry about bringing Amazonia under full human control. The longer the job of rational, people-based development takes there, in fact, the more likely it is that it will produce lasting results of genuine benefit to humanity. Capitalists seek profits in the short run; governments want to show accomplishments in the short run while looking good to the capitalists; and in Amazonia as elsewhere these two groups are usually in cahoots with one another. That is the way it is in all of the tropical forest rainforest areas of the world; it is the way it is about to be in the tundras and deserts of the ex-Soviet Union; it is the way it has been

since for well over a century in most of the rest of the world; it is the way it is right here in the Santa Clara valley.

The main reason for thinking about the tribulations of far-away Amazonia, then, is that they are an exceptionally stark example, the kind of example that is useful to think about because it causes the essential features of a complex situation to stand out clearly for everyone. It is easy enough to come up with plausible solutions for the problems of the Amazon Valley, and even to persuade one's self that if reason prevailed they might be implemented. As a historian of the colonial and ex-colonial world, I study depressing subjects; but at the same time I am by nature an optimist -- one who believes that people tend to face and solve problems rather than being overwhelmed by them, and that this remarkable characteristic of human beings is the main motor for change in the world. It is sometimes hard to sustain that optimism for Amazonia, just as it is increasingly hard to sustain optimism for our own country and its relationship to humanity and nature, because I am convinced that there as well as here, the common-sense solutions to the urgent problems that most human beings face today cannot possibly be provided by the rich and the powerful men and governments who rule the world today, or by the capitalist world system itself.

"Development" in Amazonia's history has been an unconvincing euphemism for the rape of nature and the destruction of humanity; "developmentalism" has been an ideology not of progress but of rapacity. Yet some system for ensuring the survival of an expanding humanity within a fragile nature over the long term simply must be devised; and it is up to those of us who are alive today and can look back over the ruinous history of five centuries of world-wide rapacity to devise it. What is called for now is a system which will enable the establishment of a healthy and sustainable relationship between humanity and nature, one which is more stewardship than exploitation. Looking for that kind of relationship is not, unfortunately for all of us, the general's, or the president's, or the congressman's, or the technocrat's, or the engineer's or the corporate stockholder's style. So we need to look for leadership someplace else. The alternative, in Amazonia as in the United States, is democracy rather than plutocracy, grassroots initiative rather than state initiative, free and well-informed discussion rather than the manipulation of public opinion by the mass media, decentralization rather than concentration in the exercise of power over economic decision-making, regulation in the public service rather than cooperation between our governments and the

corporations. The alternative is a reconfiguration of government as a support service for responsible communities engaged in purposeful efforts to solve the major problems that still face our common human kind. The main lesson for Americans of the Amazonian history I have recounted is, it seems to me, that unless we can find our way to the construction of alternatives such as these, all that is precious about both humanity and nature is now seriously threatened with extinction.