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Environmental Conflicts, Environmental Justice, and Valuation

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[A]ABSTRACT

In this article some historical and contemporary environmental conflicts are described. The international environmental liability of mining corporations is discussed. Comparisons are made with conflicts in the United States and in South Africa which fall under the rubric of the Environmental Justice movement. Such conflicts are fought out in many languages, and the economic valuation of damages is only one of such languages. Who has the power to impose particular languages of valuation? Who rules over the ways and means of simplifying complexity, deciding that some points of view are out of order? Who has power to determine which is the bottom-line in an environmental discussion?

Key words: Ecological Distribution Conflicts/ Environmentalism of the Poor/ Environmental Justice/ Environmental Liability/ Copper mining/ Gold mining/ Ecological economics/ Valuation

[A]INTRODUCTION

There is a new tide in global environmentalism that arises from social conflicts on environmental entitlements, on the burdens of pollution, on the sharing of uncertain environmental risks, on the loss of access to natural resources and environmental services. Many such ecological distribution conflicts, whether they take place inside or outside markets, whether they are local or global, come about because economic growth means an increased use of the environment. In such ecological distribution conflicts, the poor are often at the side of resource conservation and a clean environment even when they themselves do not claim to be environmentalists.

The claims to environmental resources and services of others who are differentially empowered and endowed, can be contested by arguing inside a single standard of value or across plural values. In this article, valuation of damages is discussed and also international environmental liability. The relations between ecological distribution conflicts and economic valuation are as follows. First, the pattern of

prices in the economy will depend on the concrete outcomes to ecological distribution conflicts. Second, ecological distribution conflicts (which often arise outside the market) are not fought only through demands for monetary compensation established in actual or fictitious market places. They may be fought out in other arenas. When the study of an ecological distribution conflict reveals a clash of incommensurable values, then this helps to develop an Ecological Economics which moves beyond the obsession of “taking nature into account” in money terms, and which is able therefore to cope with value pluralism.

[A]ENVIRONMENTALISM AVANT-LA-LETTRE: COPPER MINING IN JAPAN

I have chosen copper mining as a starting point, for two reasons. First, it provides historical examples. By looking at historical cases of environmental conflict which were not yet represented in the language of environmentalism, we can then interpret as environmental conflicts, instances of social conflict today where the actors are still reluctant to call themselves environmentalists (Guha, 1989). Second, by comparing historical with contemporary conflicts on copper mining, I make the point that copper has not become obsolete (despite aluminum and optic fiber). On the contrary, the frontier for the extraction of copper reaches new territories, and this is a good point to make against the believers in the “dematerialization” of the New Economy.

Environmentalists in Japan remember Ashio as the site of Japan’s first major industrial pollution disaster. This was a large copper mine not far from Tokyo owned by the Fukurawa corporation, which witnessed a major workers’ riot against working conditions in 1907. Japanese social historians have debated whether the riot was “spontaneous” or organized by ancient brotherhoods. There were also already some “direct action” socialists in Japan at the time. While, as we shall see, in Rio Tinto in Andalusia in 1888 there was a common front between miners and peasants against pollution, this does not seem to have been so at Ashio, where tens of thousands of peasants along the Watarase river fought during decades against pollution from heavy metals which damaged not only crops but also human health. They also fought against the building of a large sediment basin to store the polluted waters, which implied the destruction of the village of Yanaka in 1907 including its cemetery and sacred shrines. “The mine’s refinery belched clouds containing sulfuric acid that withered the surrounding forests, and the waste water ... ran off into the Watarase River, reducing rice yields of the farmers who irrigated fields with this water... Thousands of farming families... protested many times. They petitioned the national authorities and clashed with the police. Eventually their leader, Tanaka Shozo, created a great stir by directly petitioning the emperor for relief...As environmental destruction reemerged in the 1960s as a major social issue, and popular concern with the impact of pollution intensified, so Ashio’s legacy as “the birthplace of pollution in Japan” has endured... At that time copper played a major role in the Japanese economy, ranking second to silk among Japan’s exports” (Nimura, 1997: 20-21, also Strong, 1977). Ashio was not

unique in the world, and Fukurawa's own publicity remarked that Butte in Montana was a fearful place to live: "The smelting process has utterly destroyed the beauty of the landscape, evil gaseous smoke has killed all plant-life for miles round about; the streams are putrid with effluent, and the town itself seems buried under monstrous heaps of slag" (Strong, 1977: 67). Such were then the realities of copper mining in America. Ashio in comparison was not so bad except that, unlike Montana, there were thousands of unhappy peasants downstream.¹

Fukurawa had bought the Ashio mines in 1877. In 1888 he made a deal for the supply to a French syndicate of 19,000 tons of copper over two and a half years, the target was met in full, three thousand miners were working then at Ashio, their number was to increase later to fifteen thousand. The contract with Fukurawa was signed on behalf of the French syndicate by the manager of Jardine Matheson, a firm founded by Sir James Matheson of the Lews, who was an uncle of Hugh Matheson, the founder of the Rio Tinto company (Strong, 1977: 67). Fukurawa procrastinated for decades on anti-pollution measures, profiting from the novelty and uncertainty of the chemical pollution in question, and from the closeness between government and business in Japan.

In cost-benefit language, it was argued: "Suppose for the sake of the argument that copper effluent were responsible for the damage to farmlands on either side of the Watarase - the public benefits that accrue to the country from the Ashio mine far outweigh any losses suffered in the affected areas. The damage can in any case be adequately taken care of by compensation" (article in the *Tokio Nichi Nichi Shinbun* of 10 Febr. 1892, in Strong, 1977: 74). In today's parlance, a Pareto improvement means, in the strict sense, that a change such as a new mining project improves somebody's situation, and does not worsen anybody's situation. In this sense, Ashio did not fulfil the criterion. However, a Pareto improvement in a wider sense allows for compensation under the so-called Kaldor-Hicks rule, so that those better off can (potentially) compensate those worse off, and still a net gain be achieved. This was Fukurawa's claim. Tanaka Shozo (1841-1913), the son of a peasant headman of a village in the polluted area, the leader of the anti-pollution struggles, could not yet have known about cost-benefit analysis and welfare economics. He became in the 1890s a member of the Diet in Tokyo famous for his fervent speeches, he was a man with deep religious feelings, the retrospective father figure of Japanese environmentalism - born therefore more in a tradition of pro-peasant environmental justice (and also of care for the urban ecology and concern for forest protection and the water cycle, Tamanoi et al. 1994) than wilderness preservation, although within a national context of industrialism and militarism which put environmentalism on the defensive. Today Japan is of course a big importer of copper through active transnational companies like Mitsubishi. Pollution from copper mining and smelting play still a big role in the ecological economies of some exporting countries. If world copper extraction was in 1900 of the order of 400,000 tons per year, one hundred years later it is of the order of 10 million tons, an increase by a factor of 25 (compared

to a fourfold increase in the human population, from 1.5 to 6 billion people between 1900 and 2000). Over 60 percent of copper production comes from such new mined ores, the rest from recycling, hence the relentless expansion of the copper frontier. The cheaper the cost of fresh extraction, the less recycling there is.

Ashio was certainly not the only case of Japanese early popular environmentalism. Thus, when “the Nikko company built its copper refinery on the tip of the Saganoseki peninsula (in Oita Prefecture) in 1917, local farmers objected strenuously. They feared that the acrid smoke from the refinery would blight the mountains and ruin the mulberry trees, on which their silk industry depended. Ignoring them the town officials agreed to the refinery. The farmers felt betrayed. The angry farmers swarmed into town and cut through the village leader’s house pillars, a tactic (*uchikowashi*) drawn straight from the Tokugawa period... The police brutally suppressed this protest, beating and arresting 100 participants. Nikko built the mill, and it operates to this day” (Broadbent, 1998: 138).

[A]ONE HUNDRED YEARS OF POLLUTION IN PERU

The Environmentalism of the Poor, and the Environmental Justice movement, are global cross-cultural movements, in all countries including the United States. (Guha, 2000). Work by several authors in the Central Sierra of Peru 25 years ago explained the successful defense of the communities both against expanding haciendas (Mallon, 1983). Indian shepherds’ and peasants’ resisted the “modernization” of the haciendas. Modern hacienda owners wanted to throw them out, and also their non-pedigreed sheep. The communities also had to struggle on another related front, against mining companies, and they still do. The Cerro de Pasco Copper Corporation polluted pasture lands in the 1920s and 1930s. Mines were not new to the Peruvian highlands. Huancavelica had supplied mercury to Potosi already in the 16th century. Silver had been mined in colonial and postcolonial times. Towards 1900, there was a world boom in copper, lead and zinc mining because of the proliferation of electrical instruments, tools, machines, armaments, railroads. Domestic capitalist miners were making small fortunes. In 1901 the Peruvian government changed the mining code, allowing private property of mining deposits (instead of state property and a regime of administrative concessions) (Dore, 2000:13-15). The Cerro de Pasco Corporation, from New York, bought many of the deposits, and started a large scale underground mining operation. The Cerro de Pasco company built roads, railroads, dams, hydroelectric plants, mining camps, at 4000 m. above sea level. It first built several small smelters, and then in 1922 a big smelter and refinery at La Oroya, the effects of which became a cause celebre. “The new smelter polluted the region’s air, soil and rivers with arsenic, sulphuric acid and iron-zinc residues” (Dore, 2000:14). The pastures withered, people became ill. There was a legal case brought against the company by peasant communities, and by old and new hacienda owners (some of whom were already at the time trying to modernize sheep raising), up to 120 km away. The mining company was forced by the court to buy the lands it had polluted,

as a form of indemnity. When in later years the mining operations and La Oroya smelter became less pollutant (at least with respect to the air, because of the scrubbers, if not with respect to the rivers), the property of all this land became a valuable asset for the company, which then started a large sheep ranching business, getting into border conflicts with surrounding communities. The enormous ranch (of about 300,000 ha) was expropriated in 1970 by the Land Reform, but still exists as the SAIS Tupac Amaru, owned by surrounding communities, one of the few large-scale sheep ranches in Peru which has not been taken over and split up into individual peasant communities. In the early 1900s, the Cerro de Pasco Corporation initially had difficulties in recruiting skilled labor. It resorted to the *enganche*, a form of debt peonage. As Elizabeth Dore points out (Dore, 2000: 15), the large scale pollution caused by La Oroya smelter contributed to solving the labor shortage, because agricultural yields decreased in the small plots where agriculture is practiced at such altitude, and animals died. Peasant labor became available. This was another blessing in disguise.

Mining in Peru was long dominated by the Cerro de Pasco Copper Corporation, but in the 1950s and 1960s, and increasingly until today, the main extraction of copper moved southward, towards Cuajone and Toquepala. These are large open-pit mines near Ilo, an extension of the rich deposits of Chuquicamata and other mines in northern Chile. The Southern Peru Copper Corporation owned by Asarco and Newmont Gold has subjected the city of Ilo, in southern Peru, of 60,000 inhabitants in the late 1990s, to water and air pollution for thirty years. The smelter was built in 1969, 15 km north of Ilo, it spewed daily almost two thousand tons of sulfur dioxide, while tailings and slag were discharged without treatment on land, and also on the ocean where, it was claimed, "several kilometres of coastline are totally black" (Ivonne Yanez, in the ELAN website, 4 October 1996). The actors are this time speaking on both sides an explicitly environmental language (Diaz Palacios, 1988, Balvin 1995). The Southern Peru Copper Corporation is Peru's major single exporter. The conflict is more urban than it was in the central Sierra, and two appeals to international courts have been made. The local authorities presented a successful complaint in 1992 to the (unofficial) International Water Tribunal in the Netherlands in 1992, obtaining its moral support. A class-action suit was initiated at the District Court for the Southern District of Texas, Corpus Christi Division, in September 1995 but it was dismissed after the Peruvian state typically asked for the case to be brought back to Peru. The plaintiffs, on behalf of people from Ilo, most of them children with respiratory illnesses, complained that the pollution from sulfur dioxide had not appreciably decreased in the last years, despite the construction of a sulfuric acid plant (which recuperates sulfur dioxide). The federal court judge decided on 22 January 1996 against admitting the case into the U.S. judicial system on grounds of *forum non conveniens*.

[A]THE STORY OF RIO TINTO AND OTHER STORIES

It was in Huelva, in the southern Spanish region of Andalusia in the 1880s, years before the words environment and ecology became common social coinage, that the first big environmental conflict associated with the name of Rio Tinto took place (Amery, 1974, Ferrero, 1994). The old royal mines of Rio Tinto were bought in 1873 by British and German interests, under Hugh Matheson, first chairman of the Rio Tinto Company. A new railway to the harbor of Huelva was immediately built, which was kindly made also available to local passengers on week-days (not on local holidays or Queen Victoria's birthday). A very large open-pit mining operation was launched. Eighty years later, in 1954, the mines were sold back to new Spanish owners, the original Rio Tinto company keeping one-third interest. This British company Rio Tinto (renamed Rio Tinto Zinc) went on to become a worldwide mining and polluting giant (Moody, 1992) - its name, its business origins, its archive in London, all point to Andalusia, where a massacre by the Army on the 4th February 1888 of local farmers and peasants, and syndicalist miners, was the culmination of years of protests against sulfur dioxide pollution. Historians still debate the number of deaths caused when the Pavia Regiment opened fire against a large demonstration in the plaza of the village of Rio Tinto: "The company could not find out, and in any case soon decided it was better to play down the seriousness of the whole affair and gave up its attempts to discover the number of casualties, though Rio Tinto tradition puts the total number of dead at between one and two hundred" (Amery, 1974:207, also Ferrero, 1993: 83 ff.) . Historians also debate whether the miners complained only against the fact that excessive pollution prevented them from working on some days (days of *manta*, i.e. blanket) and therefore from earning full wages on those days, or whether they complained against pollution per se because of damage to their own and their families' health. The company was taking out a large quantity of copper pyrites, employing some ten thousand miners. The idea was to sell the copper for export, and also as a by-product the sulfur in the pyrites (used for manufacturing fertilizers). The amount of ore extracted was so large, that in order to obtain the copper quickly, a lot of the sulfur was not recuperated but was thrown into the air as sulfur dioxide when roasting the ore in *teleras* in a process of open-air calcination, previous to smelting the concentrate. "The sulphurous fumes from the calcining grounds were a major cause of discontent. They produced an environment that everyone resented, for the pall of smoke which frequently hung over the area destroyed much of the vegetation and produced constant gloom and dirt" (Amery, 1974:192). Large and small farmers, though the company was paying monetary compensation to them, managed to convince some of the councils from small surroundings villages to forbid open-air calcination in their own municipal territories. The company successfully intrigued (through members of the Spanish Parliament in its pay) to segregate Rio Tinto as a municipal territory of its own (being part of the territory of Zalamea, a larger town), on the reasonable argument that population in the mining area had increased very much. The company was keen to have local municipal officers favorable to her. On the 4th February 1888, the immediate causes for the strike had been the complaint against the non-payment of full wages in *manta* days, and the demand for the abolition of piece-work and for the end of the deduction of one

peseta weekly from the wage bill to cover expenses of the medical fund. Maximiliano Tornet, the miners' syndicalist leader, an anarchist who had been deported from Cuba back to Spain some years earlier, had managed to make an alliance with the peasants and farmers (and some landowners and local politicians) who had constituted the Huelva Anti-Smoke League. When the Army arrived in the plaza full of striking miners and peasants and peasant families from the region damaged by sulfur dioxide, an argument was going on inside the Rio Tinto town-hall on whether open-air *teleras* should be prohibited by municipal decree not only in surrounding villages but also in Rio Tinto itself. In terms of today's language of environmental management, the local stakeholders (syndicalists, local politicians, peasants and farmers) did not achieve successful conflict resolution, let alone problem resolution. Had the municipality publicly announced a decree against open-air calcination, the tension in the plaza would have diminished, the strike would have been called off. Other stakeholders, that is, the Rio Tinto company and the civil governor in the capital of the province, were in the meantime mobilizing other resources, namely, arranging for troops to be brought into action. It is not known for sure who first shouted "fire", perhaps a civilian from a window (Amery, 1974:205), but the soldiers understood the shout as an order to start shooting into the crowd.²

The popular interpretation of this episode in terms of *environmentalism* became unexpectedly relevant one hundred years later, as the village of Nerva, exactly in this region, struggled in the 1990s against the regional authorities over the siting of a large hazardous waste dump (precisely in a disused mine), local environmentalists and village officials explicitly appealing to the living memory of that "year of shots" of 1888 (Garcia Rey, 1997), fifty years before the Civil War of 1936-39, when the miners of Rio Tinto were massacred again, this time for non-ecological reasons. Meanwhile, sceptics on the thesis of popular environmentalism point out that, in 1888, the workers were more worried about wages than about pollution, and that the peasants and farmers were manipulated by local politicians who wanted to make money from the Rio Tinto company or who had their own disagreements with other politicians at national level on the treatment given to the British company - so conspicuously British that it sported an Anglican church and a cricket team.³

"Retrospective" environmentalism related to mining and air pollution is becoming a staple of social history in many countries. Not only air pollution, also water pollution (as in the Watarase river in Japan, and in Ilo, Peru) is important. It is present in other types of mining, for instance pollution by mercury, the *azogue* which the Spaniards employed in Potosi and also in Mexico to amalgamate with silver, and which today is used in Amazonian rivers to amalgamate with gold. Mercury was the origin of famous diseases in Japan from the 1950s onwards (though the consumption of fish), the best-known non-radioactive pollution episodes in the post-1945 history of Japan.

Extraction of copper has been increasing at about 1.5 per cent per year still in the 1990s. If prices go down it is because of oversupply and not because of lack of

demand. I had planned already to include the following contemporary conflict, which now looks to me even more significant. In the late 1990s, in the region of Intag (Cotacachi, province of Imbabura) in northern Ecuador, Mitsubishi was defeated by a local non-governmental organization, Decoin, with help from Ecuadorian and international groups, in its plans to start mining for copper. I know this case first-hand, because of my relation with Accion Ecologica (Quito) which helped Decoin. The idea was to relocate one hundred families to make way for open-cast mining, bringing in thousand of miners in order to extract a large reserve of copper. This is a beautiful and fragile area of cloud forest and agriculture, with a mestizo population. Rio Tinto had already shown interest, but its previous incursions in Ecuador (at Salinas in Bolivar, at Molleturo in Azuay) ended in retreats. A Mitsubishi subsidiary, Bishi Metals, started in the early 1990s some preliminary work in Intag. After many meetings with the authorities, on May 12, 1997, a large gathering of members of affected communities resorted to direct action. Most of the company's goods were inventoried and removed from the area (and later given back to the company), and the remaining equipment was burnt with no damage to persons. The government of Ecuador reacted by bringing a court case for terrorism (a rare event in Ecuador) against two community leaders and the leader of Decoin but the case was dismissed by the courts one year later. Attempts to bring in Codelco to mine (the Chilean national copper company) were also defeated, when Accion Ecologica from Quito sent one activist, Ivonne Ramos, to downtown Santiago to demonstrate with support from Chilean environmentalists on the occasion of a state visit of the president of Ecuador, and she was arrested. The publicity convinced Codelco to withdraw. Accion Ecologica also organized a visit by women belonging to the Intag communities, to copper mining areas in Peru, like Cerro de Pasco, La Oroya and Ilo. The women did their own interviews in those areas, and came back to Intag with their own impressions, carrying sad miners' music and lyrics which became an immediate hit in Intag. These triumphant local women still deny to this day that they are environmentalists, or, God forbid, ecofeminists.⁴ Today there are several initiatives for alternative forms of development in Intag, one of them being the export of "organic" coffee to Japan arranged through environmental networks first contacted in the fight against Mitsubishi. But the copper ore is still there, underground, and the world demand for copper (despite calls for the "dematerialization" of the economy) keeps increasing.

[A]BOUGAINVILLE AND WEST PAPUA

Copper mining is more successful elsewhere, though not without conflicts. In the island of Bougainville, the Rio Tinto Zinc company got into trouble because of local opposition despite the agreement the company had made with the government of Papua New Guinea, which has sovereignty over Bougainville, in order to exploit the site of what was described as the most profitable copper and gold mine in the world. Back in 1974, it was reported that "the natives of Bougainville have stopped throwing geologists into the sea even since the company [Rio Tinto Zinc] declared itself willing to compensate them for the land it had taken with cash and other material services".

However, it was also reported that monetary compensation was not enough: “The village communities affected gave the highest importance to land as the source of their material standard of life. Land was also the basis of their feelings of security, and the focus of most of their religious attention. Despite continuing compensation payments and rental fees, local resentment over the taking of the land remains high, and there is strong opposition to any expansion of mining in Bougainville, whether by the existing company, the government, or anyone else” (Mezger,1980:195). Finally, the tiny island of 160,000 inhabitant erupted into a secessionist war at the end of the 1980s. We notice here the use of languages such as sacredness, and national independence. We notice also that the language of monetary compensation was brought into play.

Not far from Bougainville, the copper extraction frontier reached West Papua under Indonesia’s sovereignty, thirty years ago at a copper and gold mine called Grasberg owned by Freeport McMoRan from New Orleans, a company run by a colorful CEO, Jim Bob Moffet.⁵ Rio Tinto has a participation in this mine. The plans are in 2000 to mine *daily* 300,000 tons of ore, of which 98 per cent would be dumped into the rivers as tailings. The “ecological rucksack” of this operation includes of course not only the discarded tailings but also the overburden, that is all the materials removed before reaching the ore. The total copper content to be finally recovered would be nearly 30 million tons of copper, three years of world production, which would come into the market at a rate which would make of Grasberg the supplier of nearly ten per cent of world copper every year. This open cast mine is at high altitude, next to a glacier. The deposit originally formed the core of a 4,100 m. mountain, and the bottom of the open pit now lies at the 3,100 m. level. The current expansion would mean an annual extraction of ore that would allow an annual output of 900,000 tons of copper, and of 2.75 million ounces of gold.⁶ Water pollution in the Ajkwa river has been up to now the major environmental complaint, and acid drainage will be an increasing problem. The ecology of the island is particularly sensitive, and the scale of operations is enormous. In 1977, at the initial stages of operation, some Amungme rebelled, and destroyed the slurry pipeline carrying copper concentrate to the coast. Reprisals by the Indonesian army were terrible. Many complaints against Freeport McMoRan led to an initially unsuccessful class-action suit in New Orleans in April 1996 by Tom Beanal and other members of the Amungme tribe. Tom Beanal declared (at a speech at Loyola University, New Orleans, 23 May 1996): “These companies have taken over and occupied our land...Even the sacred mountains we think of as our mother have been arbitrarily torn up, and they have not felt the least bit guilty... Our environment has been ruined, and our forests and rivers polluted by waste... We have not been silent. We protest and are angry. But we have been arrested, beaten and put into containers: we have been tortured and even killed”. Tom Beanal was reported to have gotten some money from the company for his own NGO, an attempt at a classic procedure for conflict resolution, but the legal case made some progress in the Louisiana courts in March 1998 on the issue of whether U.S. courts could have jurisdiction. The best-known representative of the Amungme is now Yosepha Alomang, subjected to detention in horrible conditions in 1994, and who was

prevented from leaving the country in 1998 when she wanted to attend a Rio Tinto's shareholders' meeting in London.⁷

Some Freeport's shareholders have been publicly concerned about the liabilities incurred by the company in Indonesia. Henry Kissinger is a director of Freeport. The company was deeply involved with the Suharto regime, having given shares in the company to relatives and associates of the ex- President. Freeport is also the biggest source of tax revenue for Indonesia. Which line will the new Indonesian government, and also the separatist movement in West Papua (Organisasi Papua Merdeka, OPM), take towards plans by Freeport (and Rio Tinto) to expand the extraction of copper and gold ore? The OPM has staged ceremonies raising the Papuan flag in the last thirty years, answered violently by the Indonesia Army and by Freeport's security forces (one famous instance took place on Christmas Day of 1994 at Tembagapura, a locality near the Grasberg mine). Will claims for an ecological debt to be paid by Freeport McMoRan be made not through a private class-action suit brought by indigenous tribes but as a result of an Indonesian governmental action, an international replica of a Superfund case in the United States? Attempts to obtain indemnities for international externalities caused by TNCs outside their legal country of residence are interesting ingredients in the calculation of the many environmental liabilities which the North owes to the South, the sum of which would amount to a large ecological debt.

The Indonesian state had an authoritarian regime (or less politely, it was a capitalist dictatorship) from the mid-1960s until the end of the 1990s. The circumstances in West Papua (or Irian Jaya, this being at the time the official Indonesian name) with both a very rich mine and a separatist movement, provided reasons for a heavy military presence. It would be a cruel joke to say that a suitable environmental policy (implementing the "polluter pays principle") would have allowed externalities to be internalized into the price of exported copper and gold. Environmental economists forget to include the distribution of political power in their analysis. Some of them even believe in their touching innocence that environmental damages arise because of "missing markets". In fact, externalities should be seen in general not as "market failures" but as "cost-shifting successes" (Martinez-Alier and O'Connor, 1996, 1999). The language of indigenous territorial rights (whose official acceptance would be a novelty in Indonesia), and even the stronger language of a separate national Papuan identity (which is historically relevant, since West Papua was annexed by Indonesia after the departure of the Dutch), may be used nowadays after the end of the dictatorship in order to fight the human and environmental disaster caused by the world's largest gold mine and the third-largest copper mine.

Freeport McMoRan is building in 2000 with Mitsubishi a large smelter at Gresik in Java, for export of copper to Japan. Freeport McMoRan also happens to own in Huelva, Spain, the firm Atlantic Copper which is the successor of the copper smelting and refining operation of the Spanish Rio Tinto company formed after 1954, and

where copper concentrate from Grasberg is taken. It is all as a large family.

In international purely political conflicts without real substance, such as a dispute between states over a strip of useless territory, by reaching a peace agreement and drawing a new frontier, both the conflict and the problem disappear. Sometimes, as in the last twenty years for the threat by CFC to the ozone layer, or for transboundary sulfur dioxide emissions in Europe, agreements are reached which lead to regimes that solve both the conflict and the problem. Instead, in many other environmental cases, solving the conflict is not equivalent to solving the problem. In order to advance towards problem-resolution, what is then needed is not conflict-resolution, but *conflict-exacerbation*.

[A]A FEW GOLD MINING CONFLICTS

Gold is sometimes produced together with other metals, such as copper, but is often the primary objective in mining enterprise. Gold mining is similar in a sense to shrimp farming, or to the extraction of tropical wood like mahogany. Its demand is directly driven by consumption. About 80 per cent of all gold that is dug out of the ground ends up as jewelry. Now, however, is consumption the real driver of the economy? Are not changes of techniques the real drivers of capitalism, and are they not introduced in production, rather than consumption, because of the pressures of competition and profits? Moreover, could not enough consumption to maintain production levels be secured already by the incomes gained in relatively dematerialized activities - a Seattle economy without Boeing? Interesting but premature questions, because the economy is not dematerializing and because consumption has a life of its own, it is not determined by the necessity to sell production. The economy is driven by the profit-rate. It *also* driven by conspicuous consumption or the wish to obtain positional goods. Hence the use of increased incomes in order to buy more and more gold, a habit of the human species in which the East and the West truly meet.

The price of gold makes it still profitable to open new mines. Gold lasts a very long time but the existing stock of gold in the world, counting also the central banks' reserves, does not seem to satisfy humankind's desires, and there is pressure to open new mines not to substitute for gold which is lost but to accumulate new stocks. Why do not the central banks sell the gold they have? Some religions forbid consumption of shrimps or pork or beef or other types of food. Is there any religion that forbids the mining and accumulation of gold? Gold mining is particularly destructive, both when it is small-scale (as the *garimpeiros* in Brazil) and when it is large-scale by corporations such as Placer Dome, Newmont, or Freeport or Rio Tinto or Anglo-American. Gold leaves behind enormous "ecological rucksacks", and also pollution from mercury or cyanide.

The participants at a Peoples' Gold Summit in San Juan Ridge, California, which was

held on June 2-8, 1999, asked for a moratorium on the exploration for gold. The manifesto coming out of this meeting begins: “Life, land, clean water and clean air are more precious than gold. All people depend on nature for life. The right to life is a guaranteed human right. It is, therefore, our responsibility to protect all of nature for present and future generations. Large-scale gold mining violently uproots and destroys the spiritual, cultural, political, social and economic lives of peoples as well as entire ecosystems. Historic and current destruction created by gold mining is greater than any value generated.⁸ Commercial gold mining projects are mainly on indigenous lands. By violating their land rights mining companies are denying the right to life of those indigenous peoples, whose relationship to land is central to their spiritual identity and survival. We need to support the self-determination of indigenous peoples and the recovery, demarcation and legal recognition of campesinos, tribal and indigenous peoples’ lands... Large-scale and small-scale, toxic chemical-dependent gold mining damages landscapes, habitats, biodiversity, human health and water resources. Water especially is contaminated by cyanide, acid mine drainage, heavy metals and mercury from gold mining. Additionally, the hydrological cycle is changed and water sources are grossly depleted by pumping water from aquifers”. There is no space here to describe in detail the conflict in Peru, at the time of writing, between the Yanacocha mine in Cajamarca (where Atahualpa met Pizarro) and local communities that belong to the Federacion de Rondas Campesinas. The gold mine is owned by Newmont, and also by a local company, with a 5% share belonging to the International Finance Corporation of the World Bank. In Venezuela, under the government that preceded President Hugo Chavez, Decree 1850 of 1997 tried to open up the forest reserve area of Imataca of three million ha to gold mining. A movement arose which comprised the sparse local indigenous Pemon population, some environmental groups such as Amigransa (the friends of the Gran Sabana), some anthropologists and sociologists, and some members of Parliament. They all used different languages (from Indian demonstrations in the streets of Caracas to legal appeals to the Supreme Court) in the service of the same cause. They managed for the time being to stop mining in Imataca. The environmental commission of the Chamber of Deputies of Venezuela appealed to the Supreme Court against Decree 1850, quoting a figure between US\$ 7 thousand and 23 thousand per hectare for the restoration of the vegetable cover affected by oil exploitation, a useful if moderate figure in order to calculate the large environmental liabilities that gold mining, with its toxic effects and large ecological rucksacks, implies.⁹

[A]ENVIRONMENTAL JUSTICE

“Environmental Justice” is not an expression taken, as one would expect, from philosophy or ethics but from environmental sociology and from the study of race relations. In the United States it has come to mean since the late 1980s and early 1990s an organized movement against “environmental racism, i.e. the disproportionate allocation of toxic waste to Latino or African-American communities. It is also relevant for Indian reservations in the United States,

particularly in the context of uranium mining and nuclear waste. Indeed, “environmental justice” could subsume historic conflicts on sulfur dioxide, the Chipko and Chico Mendes cases, the current conflicts on the use of carbon sinks, the conflicts on oustees from dams, the fight for the preservation of rainforests or mangroves for livelihood, and many other cases around the world which sometimes have to do with “racism” and sometimes not.

The Environmental Justice movement in the United States (Bullard, 1990,1993, Pulido, 1991, 1996, Bryant and Mohai, 1992, Bryant, 1995, Sachs, 1995, Gottlieb, 1993, Szasz, 1994, Schwab, 1994, Westra and Wenz, 1995, Dorsey, 1997, Faber, 1998, DiChiro, 1998, Camacho, 1998, Taylor, 2000) is quite different from the two previous environmentalisms in this country, namely, the efficient and sustainable use of natural resources (in the tradition of Gifford Pinchot), and the cult of wilderness (in the tradition of John Muir). As a self-conscious movement, Environmental Justice fights against the alleged disproportionate dumping of toxic waste or exposure to different sorts of environmental risk in areas of predominantly African-American, or Hispanic or Native-American populations. The language employed is not that of uncompensated externalities but rather the language of race discrimination, which is politically powerful in the United States because of the long Civil Rights struggle. In fact, the organized Environmental Justice movement is not an outgrowth of previous currents of environmentalism but rather an outgrowth of the Civil Rights movement. Thus, in the Third World, the main socio-environmental question was in the 1980s whether an indigenous, independent Environmentalism of the Poor existed, a question first theorized in India and, later, in Latin America and Africa, because of episodes of defense of common property resources against the State or the Market (Martinez-Alier and Guha, 1997, 1999). Meanwhile, in the United States the question was whether the buoyant mainstream environmental movement would deign to consider the existence of “environmental racism”, whether it could accept and work with “minorities” which were mainly concerned with urban pollution.

There are many cases of local environmental activism in the United States by “citizen-workers groups” (Gould et al., 1996) outside the organized Environmental Justice movement, some with one-hundred years’ roots in the many struggles for health and safety in mines and factories, perhaps also in complaints against pesticides in Southern cotton fields, and certainly in the struggle against toxic waste at Love Canal in upstate New York led by Lois Gibbs (Gibbs, 1981, 1995) who also later led a nation-wide “toxics-struggles” movement showing that poor communities would not tolerate any longer being dumping grounds (Hofrichter, 1993). In the “official” Environmental Justice movement are included celebrated episodes of collective action against incinerators (because of the uncertain risk of dioxins), particularly in Los Angeles, led by women. Also in the 1980s, other environmental conflicts gave rise to groups such as People for Community Recovery in South Chicago (Altgeld Gardens), led by Hazel Johnson, and the West Harlem Environmental Action (WHEACT) in New York, led by Vernice Miller. In 1989, the South-West Network for Economic

and Environmental Justice (SNEEJ), led by Richard Moore, was founded, with its main seat in Albuquerque, New Mexico, out of grievances felt by Mexican and Native American populations. In October 1991 the First National People of Color Environmental Leadership Summit took place in Washington D.C., the Principles of Environmental Justice were proclaimed, and the movement for Environmental Justice became well known. President Clinton's Executive Order 12,898 of 1994 on Environmental Justice was a triumph for this movement. It directed all federal agencies (though not corporations or private citizens) to act in such a way that disproportionate burdens of pollution do not fall on low income and minority populations in all territories and possessions of the United States. Thus, both poverty and race were taken into account, and nothing was said about impacts outside the United States. Happy the country where "low-income" people are regarded as a minority (alongside or overlapping with racial "minorities")!

The insistence on "environmental racism" is sometimes surprising to analysts from outside the United States. In fact, some foreign academics refuse to acknowledge the racial angle, and have boldly stated that: "If one were asked to date the beginning of the environmental justice movement in the United States, then 2 August 1978 might be the place to start. This was the day when the CBS and ABC news networks first carried news of the effect of toxic waste on the health of the people of a place called Love Canal" (Dobson, 1998:18). However, the Love Canal people, led by Lois Gibbs, were not people of color, they were white, as such categories are understood in the U.S., and therefore were subject only to metaphorical, not real "environmental racism". Other non-U.S. academics agree with the interpretation that Environmental Justice is in the U.S. a movement against "environmental racism". I also agree. Thus, the seminal moment (Low and Gleeson, 1998: 108) was in 1982 in Warren County, North Carolina. Of course, one could also argue that the world environmental justice movement started long ago at a hundred dates and places all over the world. For instance, in Andalusia in 1888, when miners and peasants at Rio Tinto were massacred by the army. Or when Tanaka Shozo threw himself in front of the Emperor's carriage with a petition in his hand. Or, in the United States, not in North Carolina but in the struggles against mining corporations in Wisconsin conducted by alliances of Indian tribes and environmentalists in the 1970s and 1980s (Gedick, 1993), and in many other struggles of resistance by Native Americans, from Canada to Tierra del Fuego. Which will be the worldwide First of May or Eighth of March of Environmental Justice and the Environmentalism of the Poor? Chico Mendes' assassination day, Ken Saro-Wiwa's, or perhaps the day the Rainbow Warrior was sunk by the French secret services in New Zealand, and its Portuguese cook died? Or when Karunamoi Sardar died defending her village in Horinkhola, Khulna, Bangladesh, on 7 November 1990?¹⁰

The self-conscious Environmental Justice movement in the United States of the 1980s and 1990s shifted the whole discussion about environmentalism in the United States away from preservation and conservation of Nature towards social justice. It

destroyed also the NIMBY image of grassroots environmental protests by turning them into NIABY protests (not in anyone's backyard). Also, it expanded the circle of people involved in environmental policy by practicing "post-normal science" in the "popular epidemiology" movement. In the United States, the legislation against racism (such as Title VI of the Federal Civil Rights Act of 1964) forbids discrimination based on race. However, in order to establish the existence of racism, it is not sufficient to prove that environmental impact is different (for instance, that lead in children's blood level is different according to racial background). It must also be shown that there is an explicit intention to cause harm to a minority group. The uncertainties of environmental risk (for instance, dioxin), and the statistical difficulties in separating racial and economic factors in toxic waste location decisions, have given rise to a rich practice of "popular epidemiology" (Novotny, 1998). It might be difficult to prove that race more than poverty correlates with toxic waste, but if this is convincingly shown, then the chances of redress are high. Lay persons gather scientific data and other information, and they also process the results offered by official experts in order to challenge them in cases involving toxic pollution, a clear case of "extended peer review".

By emphasizing "racism", the movement for Environmental Justice also emphasizes incommensurableness of values. This is its greatest achievement. If I pollute a poor neighborhood, by applying the polluter pays principle (PPP), I may compensate the damage. This is more easily written than done, because, how much is human health worth? In which scale of value? Nevertheless, the PPP implies that a worsening ecological distribution is in principle compensated by an improving economic distribution. The objective is of course to make pollution expensive enough so that its level will decrease by a change in technology or by a lower level of polluting production. Whatever the objective, the principle implies a single scale of value. Now, the same problem phrased in terms of "environmental racism" becomes a different problem. I can inflict damage to human dignity by using a racial insult or by racial discrimination. Paying a fine does not entitle me to repeat such conduct. There is no real compensation. Money and human dignity are not commensurate.

Bullard, who is both an academic and an activist, realizes the potential of the Environmental Justice movement beyond "minority" populations, and asserted in 1994: "Grassroots groups, after decades of struggle, have grown to become the core of the multi-issue, multi-racial, and multi-regional environmental justice movement. Diverse community-based groups have begun to organize and link their struggles to issues of civil and human rights, land rights and sovereignty, cultural survival, racial and social justice, and sustainable development... Whether in urban ghettos and barrios, rural "poverty pockets", Native American reservations, or communities in the Third World, grassroots groups are demanding an end to unjust and non-sustainable environmental and development policies...".¹¹ Notice then the clear awareness that environmental justice is functional to sustainability, and that it concerns poor people everywhere, including indeed Third World communities, that is, billions of people.

Low-income “people of color” are a minority in the U.S. but they are certainly a majority in the world at large.

There are some ecological distribution conflicts in the world (the European conflicts on nuclear risks as expressed at famous fights in Gorleben or Creys-Malville, or again the European conflict against U.S. “hormone beef” and transgenic crops, or the current conflict on the Three Gorges dam in China, for instance), for the analysis and resolution of which, the metaphor of “environmental racism” is not useful. On the other hand, we could retrospectively apply “environmental racism” to one of the many forms of racism that the Spaniards showed in America, by imposing a terrible load of mercury poisoning to indigenous workers in silver mines (Dore, 1999). Environmental racism is often a useful language for conflicts which have been fought up to now under the banner of indigenous territorial rights. Activists and lawyers in the class action suit against Texaco from Ecuador, blamed Texaco in advertisements in U.S. newspapers in 1999 for “environmental racism”. Profiting from the publicity against Texaco because of a court case for internal racism against black employees in the United States (settled out of court in 1997 for US\$ 176 million), sympathizers for the Ecuadorian plaintiffs placed an advertisement in the New York Times (23 Sept. 1999) which stated: “The lawsuit alleges that in Ecuador, Texaco dumped the poisonous water produced by oil drilling directly onto the ground, in nearby rivers, and in streams and ponds. The company knowingly destroyed the surrounding environment and endangered the lives of the indigenous people who had lived and fished there for years. These are people of color, people for whose health and well-being Texaco shows only a cavalier disregard... It’s time that Texaco learns that devaluing the lives and well-being of people because of the color of their skin is no longer acceptable for any American company”. Notice that this language, so effective in the United States, was not used when the case started in 1993, and it would be problematic though not impossible to apply it to Texaco’s successor, Petroecuador, which has used similar technology damaging not only indigenous people but also average mestizo Ecuadorian settlers. Perhaps “internal colonialism” (Adeola, 2000) could be used against Petroecuador, as against the Nigerian authorities, while “racism” could be reserved for Texaco (or Shell, in Nigeria).

[A]INTERNATIONAL ENVIRONMENTAL LIABILITIES

Environmental conflicts in South Africa are often phrased in the language of environmental justice (Bond, 2000). Thus, a conflict in the late 1990s which continues at the time of writing places environmentalists and local populations against a project near Port Elizabeth for the development of an industrial zone, a new harbor, and a smelter of zinc for export, owned by Billinton, a British firm which would guzzle up electricity and water at cheap rates while poor people cannot get the small amounts of water and electricity they desperately need, or in any case must pay increasing rates under current economic policies . The Billinton project has costs in terms of tourists’ revenues because of the threats to a proposed national elephant park extension nearby,

to beaches, estuaries, islands and whales (Bond, 2000:47). There are also costs in terms of the displacement of people from the village of Coega. This point was emphasized in a letter sent by the Southern Africa Environment Project to Peter Mendelson, the British Secretary of State for Trade and Industry: "We are writing on behalf of those who have historically lacked the capacity to assert their rights and protect their own interests but who now seek to be heard and to call to the attention of the international community the injustice that is now about to be inflicted upon them". The life of the people of Coega was already full of memories of displacements under the racist regime of apartheid. Although Billinton could no longer profit from the lack of voice of the people under apartheid, now -it was alleged- it sought "to take advantage of the region's desperate need for employment to enable construction of a highly polluting facility that would never be allowed adjacent to a major population centre in the U.K. or any other European country".¹² A small improvement in the economic situation of the people would be obtained at high social and environmental cost, because of displacement of people, and also because of increased levels of sulfur dioxide, heavy metals, dust, liquid effluents. An appeal was made to British Minister to take into account OECD's guidelines for multinational enterprises which include a chapter on environmental protection since 1991, but which are no more than recommendations which the authorities cannot enforce directly. The Minister was asked in any case to exercise his influence upon Billinton informally.

The environmental impacts which the apartheid regime left behind are now surfacing. There are large liabilities to be faced. Best known is the asbestos scandal, which includes international litigation initiated by victims of asbestosis against British companies, particularly Cape. Nearly 2000 persons asked for compensation because of personal damages as a result of Cape's negligence in supervising, producing and distributing asbestos products. The lawyers argue that Cape was aware of the dangers of asbestos at least from 1931 onwards, when Britain asbestos regulations were introduced. Nevertheless production continued in South Africa with the same low safety standards until the late 1970s. Medical researchers have found that 80 per cent of Penge's black miners (in Northern Province) who died between 1959 and 1964 had asbestosis. The average age of the victims was 43. Cape operated a mill for 34 years in Prieska, Northern Cape, where 13 per cent of workers' deaths were attributed to mesothelioma, a very painful asbestos related cancer. Asbestos levels in this mill in 1948 were almost 30 times the maximum UK limit. There are other cases in South Africa of asbestos contamination, by companies such as Msauli and GEFCO, at locations such as Mafefe, Pomfret, Barberton, Badplass (Felix, in Cock and Koch, 1991).

Contaminated abandoned mines and asbestos dumps must nowadays be rehabilitated by the post-apartheid South African governments. Simultaneously, court cases were started against Cape in the U.K., and the House of Lords (in its judicial capacity) ruled for a while (until July 1999, when the judgement was reversed) that such cases could be heard in London rather than in South Africa. It seemed that British companies

could be sued in British courts. Against GATT-WTO doctrine, the asbestos court case and similar ones, if successful, would show that international regulation is required not only about the safety and quality of the final products but also on the process of production and its side-effects. When regulation failed or was non-existent, and when effective protest was impossible because of political repression, there are then retrospective liabilities to be faced. The courts will perhaps institute little by little a sort of international Superfund obligations for the transnational companies. True, the South African apartheid state was blind to damage to black workers. The asbestos and mining companies most probably fulfilled internal South African laws as regards safety, wages, and taxes. Nevertheless, they should be held accountable for the “externalities” that they left behind. Given the chance, workers and their families would have complained, not so much because they were environmentalists but because their health was threatened. The law firm which represents the asbestosis victims (Leigh, Day) also brought actions in London for damages to workers at Thor Chemicals in KwaZulu-Natal on behalf of victims of poisoning by mercury, and on behalf of cancer victims from Rio Tinto’s Rossing uranium mine in Namibia.¹³

In April 1990 massive concentrations of mercury had been detected in the Umgeweni River near the Thor Chemicals’ Cato Ridge plant. This was reported in the national and international press. Thor Chemicals imported mercury waste into South Africa, partly supplied by Cyanamid, an American company. South African environmental groups, mainly Earthlife under Chris Albertyn’s leadership, allied themselves with the Chemical Workers Industrial Union, the local African residents under their chief, and also white farmers from the Tala Valley who had already endured a bad experience of pesticide spraying from the neighboring sugar industry. A true “rainbow” alliance, which also incorporated U.S. activists against the Cyanamid plant in question, complained against such “garbage imperialism” or “toxic colonialism” by asking: “Why did Thor, a British company, decide to build the world’s largest toxic mercury recycling plant on the borders of KwaZulu in a fairly remote part of South Africa? Why not build it closer to the sources of the waste mercury in the United States or in Europe?” (Crompton and Erwin, in Cock and Koch eds., 1991:82-84).

Actually, “the practice of exporting hazardous wastes for disposal in developing countries has been described as environmental injustice or environmental racism on a global scale”. (Lipman, 1998). The Basel Convention of 1989 forbids the export of hazardous waste from rich countries except for recovery of raw materials or for recycling. It was complemented on 25 March 1994 by a full ban negotiated at a meeting in Geneva on all exports of hazardous waste from the 24 rich industrialized countries of the OECD. The agreement was reached over the opposition of the richest countries, which received from Greenpeace, in this context, the name of the Sinister Seven. Some defections inside the European Union (Denmark, and later Italy) helped an alliance among China, Eastern European countries, and in general all southern poor countries in order to close in theory the “recycling” loophole of the initial 1989 convention though which ninety per cent of the waste was flowing. Thus, pending

ratification and domestic implementation of this agreement, and assuming also that Article 11 of the Basel Convention (which allows for bilateral or multilateral hazardous waste exporting agreements provided they comply with “environmentally sound management”) is not abused, then a sad chapter of industrialization would be closed. Rich countries would not be able to exploit the weaker regulations of poorer countries to avoid their own responsibility for minimizing waste. Clearly, the issue is far from over. The pressure for the export of toxic waste still increases, although the Basel Convention has had a positive effect. This is the context in which in November 1998 it was announced that nearly 3,000 tons of Taiwanese toxic waste from the group Formosa Plastics had been dumped in a field in the port of Sihanoukville in Cambodia. Taiwan is not a party to the Basel Convention. The waste was scavenged by poor villagers, many of whom later complained of sickness; one died quickly. (Human Rights Watch, 1999). The logic of Lawrence Summers’ Principle still remains compelling.¹⁴

The perception of risk changes with time, sometimes because scientific research produces clear results, sometimes because, on the contrary, scientific uncertainties cannot be dispelled, and a feeling of danger creeps in. Then, the question is asked: Who is responsible for cleaning up the (newly perceived) mess, or for paying indemnities or making reparations? How to assign *environmental liabilities*, granting that restoration may be impossible when irreversible damages or deaths are involved? Thus, the “Superfund” legislation in the United States is supposed to achieve the cleaning up of hazardous waste sites (chemical dumps, mine tailings...), which are called “orphaned” when no existing corporation or private citizen or public body is responsible. In this exceptional case, the burden of proof lies rather with polluting companies than with the polluted citizens or with the regulatory agency. Companies have to prove against EPA’ allegations that no risk of damage exists from the waste they have abandoned. Nuclear waste is excluded however from the Superfund legislation, which arose in the late 1970s (at the end of President Carter’s administration). Its official name is Comprehensive Environmental Response Compensation and Liability Act (CERCLA). As in Europe after the Seveso alarm (dioxin release from a chemical firm near Milan), in the United States after the Love Canal scandal near Niagara Falls in upper state New York, there was a feeling that something should be done to remedy damage done, and to make future damage costly by imposing strict norms of private or public liability. Superfund may also be interpreted as a government response to the first stirrings of the environmental justice movement. Cleaning up operations under Superfund are financed by special charges on the oil and chemical industries, when the sites are “orphaned”. When the companies are identified and still active, they have to pay for the cleaning up. The EPA must not act in an “arbitrary and capricious” manner but it has no obligation to prove that there is actual damage, only that there is a risk of damage. Critics of Superfund point out that the costs are too high compared to benefits, including administrative costs, and that the communities near the waste sites cleaned up do not always benefit economically because the improved environmental situation is

countered by the adverse environmental image.

Notice that there is *no* international Superfund to which appeal can be made, should common-law judicial actions against Texaco, FreeportMacMoRan, Dow Chemical, Cape or the Southern Peru Copper Corporation fail.

After listing a number of cases in the United States in which indemnities have been paid by corporations, such as the Exxon Valdez, a Venezuelan journalist asked himself in January 2000: “Being Venezuela a country dominated by the oil and mining industries, the question is, which is the *pasivo ambiental* (i.e. environmental liability) of all this oil and mining activity in our country?”¹⁵ It is fascinating to watch the diffusion of the term *pasivo ambiental* in a mining and oil extraction context in Latin America as one writes this article. Hector Sejenovich, from Buenos Aires, was perhaps the first economist to use this term when he calculated the environmental liabilities from oil extraction in the province of Neuquen, Argentina. The Argentinian Minister for the Environment Oscar Massei was quoted on 6 February 2000 (journal *Rio Negro*, on line) as saying that regional incentives to oil companies in Neuquen may not include flexibilization of environmental standards. The government, he added ominously, had in its possession the study made for UNDP which evaluated the *pasivos ambientales* from oil exploitation in Neuquen at one billion dollars. In Peru, a new law project was submitted to Congress in 1999 (project n. 786) creating an National Environmental Fund - as sort of internal GEF as a congressman put it. The Fund would finance environmental research, it would improve and restore the environment, and would promote ecological agriculture. Its economic resources would come mainly from a percentage of the revenue from the privatization of state enterprises. After complaining about the environmental deterioration in the last decades because of mining and fisheries, after commenting on increasing desertification and deforestation in the country, congressman Alfonso Cerrate quoted the case of the privatization of CENTROMIN (the State firm which was the successor to the Cerro de Pasco Copper Corporation), which was not successful. The environmental problems of Centromin must have been a factor in the lack of buyers at the auction. The question was, “who will pay for the ecological debt? Who will assume the environmental liability (*pasivo ambiental*) accumulated throughout the years by CENTROMIN and other state firms?”

In Chile, new legislation on liabilities after closing mines was being discussed in 1999 and 2000. The Sociedad Nacional de Minería was aware that environmental standards should improve, that there was a danger of being internationally accused of ecological dumping, and it was in favor of applying international environmental standards adapted of course to national realities. *En el tema del pasivo ambiental*, it added, discussions were proceeding but the general feeling in the industry was that the State should assume such environmental liabilities.¹⁶ The Bolivian vice-minister of Mines, Adan Zamora, referring to the pollution in the river Pilcomayo (that flows down from Potosi towards Tarija and eventually Argentina), increased by the bursting of a

tailings dyke at Porco belonging to Comsur, had said in 1998: *la nueva politica estatal minero-metalurgica tiene como responsabilidad remediar los pasivos ambientales originados en la actividad minera del pasado* (Presencia, 16 June 1998). In fact, environmental liabilities in Potosi reach back to the 16th century.

[A]CONCLUSIONS

Driven by consumption, the throughput of energy and materials in the world economy has never been so large as today. Paradoxically, increases in eco-efficiency lead sometimes to increased demands of material and energy, because their costs diminish (the Jevons effect). Externalities will not decrease but on the contrary, increase because the growth of the world economy. We are certainly not in a “post-material” age. Externalities (i.e. cost-shifting) must be seen as part and parcel of the economy, which is necessarily open to the entry of resources and to the exit of residues. The appropriation of resources and the production of waste result in ecological distribution conflicts, which give rise to a worldwide Environmental Justice movement which in fact started many years ago. The Environmentalism of the Poor and the movement for Environmental Justice (local and global), grown from the complaints against the appropriation of communal environmental resources and against the disproportionate burdens of pollution, may help to move society and economy in the direction of ecological sustainability.

Activists of the U.S. Environmental Justice movement have emphasized the links between the increasing globalization of the economy and environmental degradation of habitats for many of the world’s peoples: “In many places where Black, minority, poor or Indigenous peoples live, oil, timber and minerals are extracted in such a way as to devastate eco-systems and destroy their culture and livelihood. Waste from both high- and low-tech industries, much of it toxic, has polluted groundwater, soil and the atmosphere. Environmental degradation such as this, and its concomitant impact on human wealth and welfare, is increasingly seen as violation of human rights”. As mining, logging, oil drilling and waste-disposal projects push into further corners of the planet, people all over the world are seeing their basic rights compromised, losing their livelihoods, cultures and even their lives. “Environmental devastation globally and what we call “environmental racism” in the United States, are violations of human rights and they occur for similar reasons”.¹⁷

The management and resolution of such ecological distribution conflicts requires cooperation between business, international organizations, NGO networks, local groups, governments. Can this cooperation be based on common values and on common languages? We argue that this is not always the case, that whenever there are unresolved ecological conflicts, there is likely to be not only a discrepancy but incommensurability in valuation (Faucheux and O’Connor, 1998, Funtowicz and Ravetz, 1994, Martinez-Alier, Munda and O’Neill, 1998, 1999, Martinez-Alier and O’Connor, 1996, 1999, O’Connor and Spash, 1999). Environmental conflicts are

expressed as conflicts on valuation, either inside one single standard of valuation, or across plural values. In other words, “semiotic resistance” (O’Connor, 1993; Escobar, 1996:61) to environmental abuse may be expressed in many languages. To see in statements about human rights, indigenous rights, sacredness, culture, livelihood, a lack of understanding or an a priori refusal of the techniques of economic valuation in actual or fictitious markets, indicates a failure to grasp the existence of value pluralism. Different interests can be defended either by insisting on the discrepancies of valuation inside the *same* standard of value, or by resorting to non-equivalent descriptions of reality, i.e. to *different* value standards.

Should legislation require dispersed minerals to be concentrated again to their previous state and the dispersed overburden to be restored, this would indeed change the pattern of prices in the economy. Beyond economic values, choices on the use of “natural capital” involve decisions about which interests and forms of life will be sustained, which will be sacrificed or abandoned. A common language of valuation is not available for such decisions. For instance, it can be stated that while humans have different economic values they all have the same value in the scale of human dignity. When we say that someone or something is “very valuable” or “not very valuable”, this is an elliptical statement (which requires the further question, in which standard of valuation? (O’Neill, 1993). For policy, what is needed is not cost-benefit analysis but rather a non-compensatory multi-criteria approach able to accommodate a plurality of incommensurable values (Munda, 1995, Martinez-Alier, Munda and O’Neill, 1998, 1999).

While conventional economics looks at environmental impacts in terms of externalities which should be internalized into the price system, one can see externalities (following Kapp) not as market failures but as cost-shifting successes which nevertheless might give rise to environmental movements (Leff, 1986, O’Connor, 1988). Such movements will legitimately employ a variety of vocabularies and strategies of resistance, and they cannot be gagged by cost-benefit analysis or by the cost-effectiveness approach. In conclusion, conflicts on the access to natural resources or on the exposure to environmental burdens and risks, may be expressed:

: Inside one single standard of valuation. How should the externalities caused by a firm be valued in money terms, when demanding compensation in a court case? How could an argument for conservation of a natural space be made or contested, in terms of the number and biological value of the species it contains, or in terms of its net primary production? An appeal to the particular experts is here appropriate.

: Through a value standard contest or dispute, that is a class in the standards of value to be applied, as when losses of biodiversity, or in cultural patrimony, or damage to human livelihoods, or infringements on human rights, are compared in non-

commensurable terms to economic gains from a new dam or from a mining project or from oil extraction. There is a clash in standards of valuation when the languages of environmental justice, or indigenous territorial rights, or environmental security, are deployed against monetary valuation of environmental risks and burdens. Non-compensatory multi-criteria decision aids or participatory methods of conflict resolution are more appropriate for this second, common type of situation, than the mere appeal to the disciplinary experts. (O'Connor and Spash, 1999:5).

Thus, ecological distribution conflicts are sometimes expressed as discrepancies of valuation inside one single standard of value (as when there is a disputed claim for monetary compensation for an environmental liability), but they often lead to multi-criteria disputes (or dialogues) which rest on different standards of valuation. Which is "the price of oil"?- asked Human Rights Watch in a report on the Niger Delta. *Todo necio/ confunde valor y precio* - agreed long ago Antonio Machado.

ENDNOTES

¹ Butte has been known as the "richest hill on Earth" in Montana local lore and history, an honor which belongs not to Butte's copper but to Potosi's Cerro Rico's silver. Butte recently "has earned the more dubious distinction of being the Environmental Protection Agency's geographically largest "Superfund" cleanup site, a legacy of mining history" (Finn, 1998: 250, fn. 8). Butte used to belong to the Anaconda Company, which bought from Guggenheim the Chuquicamata mine in Chile, possibly the largest copper mine on earth. No Superfund for Chuquicamata, nor for Potosi.

² Ferrero (1993:214) lists the articles of the Criminal Code which were infringed. There were no judicial pursuits in Spain or in Britain.

³ Skeptics also point out correctly that in Aznalcollar, a village inside the polluted area of 1888, the miners of Bolliden clamored in 1999 for "their" mine to reopen, against middle-class environmentalists from Seville and Madrid. Bolliden is a Swedish-Canadian company whose tailings dike broke down in 1998 contaminating with heavy metals ten thousand hectares of irrigated agriculture (where cultivation has been discontinued), and threatening the Doñana national park in the delta of the Guadalquivir.

⁴ Accion Ecologica (Quito) and Observatorio Latinoamericano de Conflictos Ambientales (Santiago de Chile), *A los mineros: ni un paso atras en Junin-Intag*, Quito, 1999. (On the *wayno* music, p.66).

⁵ Much of the documentation on this case comes from the files from the Permanent People's Tribunal on Global Corporations and Human Wrongs organized by the Lelio Basso Foundation at the School of Law, University of Warwick, Coventry, 22-25 March 2000. See also Eyal Press, "Freeport-McMoRan at Home and Abroad", *The Nation*, July 31-August 7, 1995, and Robert Bryce (from the newspaper Austin Chronicle), "Spinning Gold", *Mother Jones*, Sept.- Oct. 1996..

⁶ Mining Journal (London), vol. 329, n. 8448, 26 Sept. 1997.

⁷ Survival for Tribal Peoples (London), Media Briefing May 1998, "Rio Tinto critic gagged".

⁸ I would myself frame the issue in terms of incommensurableness of values rather than *the* value being larger or smaller.

⁹ The Economist, 12 July 1997, p. 30. El Universal (Caracas), 3 August 1997, p. 1-12.

¹⁰ "Horinkhola and the surrounding villages have been declared a "Shrimp-Free Zone", and every November 7, thousands of landless peasants gather here in a show of solidarity with this community's resistance against the shrimp industry" (Ahmed, 1997:15).

¹¹ R. Bullard, *Directory. People of Color Environmental Groups 1994-1995*, Environmental Justice Resource Center, Clark Atlanta University, Georgia. My underlining.

¹² Available at www.saep.org, letter from Norton Tennille and Boyce W. Papu to Peter Mandelson, 7 September 1998.

¹³ Ronnie Morris, "UK court demolishes double standards", Business Report, 4 March 1999, and subsequent information downloaded from www.saep.org. A UN report stated in 1990 that the Rossing uranium mine in Namibia was "a theft under the law and must be accounted for when Namibia becomes independent".

¹⁴ Internal World Bank memo, as reported in *The Economist*, 8 February 1992, under the title "Let them eat pollution". This has become a favorite text for the Environmental Justice movement.

¹⁵ Orlando Ochoa Teran, *Quinto Dia*, 18 January 2000, relayed by J.C.Centeno through the Environment in Latin America discussion list (ELAN at CSF). Some of us have been struggling for years to introduce the equivalent expression *deuda ecologica*.

¹⁶ Danilo Torres Ferrari, Los avances de la normativa sobre Cierre de Faenas Mineras, *Boletin Minero* (Chile), 1122, June 1999.

¹⁷ Deborah Robinson, International Possibilities Unlimited, Washington DC, "Environmental Devastation and Home & Abroad: The Importance of Understanding the Link", 1999, www.preamble.org/environmental_justice

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