

*Academic Responsibilities and
Representation of the Ok Tedi Crisis
in Postcolonial Papua New Guinea*

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SUBSISTENCE ECOLOGY TO POLITICAL ECOLOGY

Perhaps the most important line of recent social scientific thinking about environment and development is “political ecology.” (Peet and Watts, 1998, 4)

The Australian colonial administration laid the groundwork for the production of commodities for export and promoted the use of natural resources to finance “economic development.” After independence in 1975, Papua New Guinea rapidly became a mining resource frontier. To the resource developers, a mine the size of Ok Tedi is characterized as an “elephant” and Papua New Guinea is known as “elephant country” (Kirsch 1996b). The Ok Tedi mining project was created in 1981 under the Ok Tedi Mining (OTM) consortium operated by Broken Hill Proprietary (BHP), the “Big Australian.” After the start of mining in 1984, Papua New Guinea followed the typical mining trajectory of taking the subsoil minerals while being vague about indemnifying indigenous peoples against resulting ecological devastation. Early localized social protest from the Wopkaimin Mountain Ok people, the indigenous owners of the land surrounding the mine on the upper Ok Tedi River, was prompted more by rapid socioeconomic change than by environmental degradation (Hyndman 1995). Moreover, the Wopkaimin have always enjoyed monetary compensation not received by other indigenous people downstream of the mine (Hyndman 1994).

Mining proceeded without a tailings dam and produced large volumes of sediment saturated with heavy metals that destroyed the lower Ok Tedi River and flowed past the D’Albertis Junction into the Fly River. In less

than a decade, weak environmental protection plans, coupled with a long series of ecological disasters associated with the mine, had endangered the environment of thirty thousand indigenous people downstream of the mine.

The ecological crisis resulting from the Ok Tedi mine was and continues to be centered on the Yonggom, the indigenous landowners of the lower Ok Tedi River area. Their intimate association of myth, belief, and environment has been irrevocably broken. Motivated by environmental degradation, Yonggom political leaders eventually succeeded in forging a popular ecological resistance movement. Social protest culminated in retaining the legal firm of Slater and Gordon in 1994 to represent six hundred clans and thirty thousand indigenous people in the socioecological region against Broken Hill Proprietary (Gordon 1997). A protracted two-year legal battle was fought out in the Supreme Court of Victoria, because of the strategic decision taken to confront the company at its corporate headquarters in Melbourne, rather than in Papua New Guinea. Broken Hill Proprietary deployed desperate tactics as it lost the media battle in Australia, and increasingly appeared as uncaring environmental vandals. In June 1996 an out-of-court settlement was reached and committed the mining company to implementing a feasible tailings containment system, paying K40 million by way of compensation to the worst affected areas on the Ok Tedi, and to paying K110 million to all affected persons (Banks and Ballard 1997; at the time K1 was approximately equal to A\$1).

Politics of Cultural Representation

When I began research along the Ok Tedi in 1986, local histories were mapped onto the landscape, with places metonymically representing important experiences in a person's life. (Kirsch in press)

My fieldwork with some seven hundred Wopkaimin Mountain Ok people of the upper Ok Tedi River started in 1973. Throughout the 1970s I was inspired by the subsistence ecology studies of isolated rural Melanesian communities (eg, Clarke 1971), and examined the Wopkaimin system of foraging, sago, and taro swiddens (Hyndman 1979, 1982a, 1984; Hyndman and Menzies 1990; Hyndman and Morren 1990; Morren and Hyndman 1987). After a decade of working with the Wopkaimin, my research focus changed to political ecology in order to study the impact of the mine.

Witnessing the socioecological impact of the mine on place and people in the headwaters of the Ok Tedi River had a profound impact on the way I conceptualized the incorporation of the Wopkaimin into the modern

world system. I used a critical political ecology perspective to evaluate ecological change in social terms (Blaikie and Brookfield 1987; Berkes and Folke 1998; Crosby 1986; Dove and Kammen 1997; Halperin 1994; Schmink and Wood 1987; Wolf 1982). My political ecology inquiry developed into examining agrarian societies shifting from isolation to the throes of complex forms of capitalist transition. I came to view the relationship between the Wopkaimin and mining as a struggle between different modes of production—a kin-ordered, subsistence-oriented mode of production and a capitalist mode of production. Political ecology conceptualizes the relationship between indigenous peoples and the invading world system on the mining frontier in Melanesia as a conflict between subsistence production for simple reproduction (kinship mode of production) and extended production for private accumulation (capitalist mode of production). The expansion of mining meant that Wopkaimin lands and resources became commodities to be appropriated and exploited in capitalist relations of production.

In January 1984 a landslide wiped out the tailings-dam site. In June of the same year an OTM-BHP barge capsized at the mouth of the Fly River, resulting in a horrendous cyanide spill, and cyanide waste was spilled from the Ok Tedi mine into the upper Ok Tedi River. Weak environmental protection plans coupled with a long series of ecological disasters led me to formulate the idea of the greater Fly River as a single environmental impact zone (Hyndman 1991a). Requirements from Ok Tedi mine for capital, labor, and food for workers, as well as the physical output of its operation integrated the Ok Tedi and Fly River region into a single ecological and socioeconomic sphere. The Ok Tedi mine threatened a regional socio-ecological system.

Political ecology accounts for articulations (Wolpe 1980) between a capitalist mode of production and a series of Melanesian noncapitalist modes located at the peripheries of global space (Peet and Watts 1998, 264). I found it became important to compare the Ok Tedi project with two other large, open-cut gold and copper mines, which were also intruding on the lands and resources of indigenous peoples across the island of New Guinea. I situated the volatile articulation between indigenous peoples, colonizers, states, and multinationals in fourth world theory (Graburn 1981; Nietschmann 1994; Spicer 1992; Wilmer 1993). As a result of indigenous peoples' struggles against the repressive state and globalization, a fourth world has emerged within the states of the first, second, and third worlds. An acknowledgment of the fourth world is essential to a critical political

ecological analysis of the relationship between indigenous peoples and extractive mineral development in Melanesia. The Freeport mining project is located on Amungme land in West Papua (Hyndman 1988a) and the Bougainville mining project is located on Nasioi land on that island of Papua New Guinea (Hyndman 1988a, 1991b). Indigenous peoples in the vicinity of all three mining projects on the Melanesian mining frontier experienced ecocide and ethnocide and responded with movements of social protest (Hyndman 1987, 1988a). Wars of indigenous nation resistance against the state eventually broke out at Freeport and Bougainville. In contrast, the Ok Tedi crisis has been settled peacefully through a successful popular ecological resistance movement.

The political ecology of the Wopkaimin and the Ok Tedi mine is divided into an economic base and a derivative sociopolitical and ideological superstructure (Hyndman 1994). In terms of the economic base, the mining enclave imposed capitalist social relations of production on the Wopkaimin for the first time. Although the elite comprador bourgeoisie sector of the state of Papua New Guinea benefits from the appropriation and exploitation of indigenous lands and resources, it is the multinational OTM consortium that really profits. In terms of the derivative sociopolitical superstructure, mining integrated the region into a single socioecological sphere. Tabubil was developed into an instant township for the mine. With the relocation of the Wopkaimin to two new roadside villages, a clash developed between kinship and capitalist relations of production. Finally, the superstructure of ideology constituted the main social protest response of the Wopkaimin to mining.

The Yonggom of the lower Ok Tedi River are a Lowland Ok people. Some thirty-five hundred Yonggom in Papua New Guinea are located mainly on the Ok Tedi River and on the Fly River north of the bulge forming the border with Indonesia; another fifteen thousand are in West Papua, where they have been ethnographically identified as the Muyu (Schoorl 1993). When Stuart Kirsch started fieldwork among the Yonggom in 1986, their system of subsistence production based on foraging, sago, and banana swiddens had not yet been destroyed (Kirsch 1996a). According to Gitawa Kambare, a Yonggom from Bige village, "Here before it was a big lagoon and a big swamp, and there is the sago trees around and people used to get sagos there and we used to eat and satisfy. Most of our gardens were on the bank of the river, and the flood of the Ok Tedi River comes down and kills all the things in the garden" (Fowler 2000, 2).

The politics of culture have inescapably influenced scholars' ethno-

graphic interest in indigenous involvement in the Ok Tedi crisis. As Kirsch stated, he has gone full circle from ethnographer, to activist, to consultant, to advisor (1996a). John Burton, a consultant ethnographer from Pacific Social Mapping in Australia, astutely observed that a *terra nugax* (land of no importance) paradigm has informed OTM-BHP operations. In the socioecological region, this paradigm was not only lost on indigenous people who called their discovered landscapes home, but it also misled managers about the political ecology in which mining was taking place (Burton 1997).

The place and landscape of Yonggom memories (Kirsch 1996a) are simultaneously inhabited by animals and other beings conceived of as having agency in ways comparable to humans (Kirsch in press). Disturbingly, Ok Tedi pollution has caused memories once anchored by landscape to lose their moorings, to the point that the Yonggom now increasingly organize their accounts of the past in chronological sequence. The shift from spatial to temporal representation of experience represents a significant consequence of the Ok Tedi crisis for the Yonggom. Symbolism remains a powerful repository of meaning only when the referents are familiar; with the disappearance of fish, birds, and game, the conversations the Yonggom once had with the animals around them have all but ceased (Kirsch in press). Yonggom myth and ritual, no longer populated by animals, have degenerated to the level of amusing folktales.

The Wopkaimin have not endured the devastating destruction experienced downstream by the Yonggom; the mine has restricted but not destroyed the continued use of their land and resources. Wopkaimin men assert control over compensation money, while the women control subsistence production (Hyndman 1994). For the Yonggom the central social costs of environmental risk are not the production and distribution of commodities, but the management of hazards resulting from processes of production. By 1989, according to Junne Cosmas, a Yonggom from Erecta village, “We knew that there was something wrong with the river when we saw changes in the plants and animals and whatever that surrounded our village or the river. The trees, they started changing color, which normally they wouldn’t change color but those trees, they were changing color and we knew something was wrong. And the good places that we go fishing, we couldn’t catch much fish in those areas” (Fowler 2000, 6).

Since Yonggom productivity is no longer directly linked to the natural environment, they are displaced from living off the land to living off compensation from the mine (Kirsch in press). Yonggom compensation is not

based on the use of their land and resources, but on the destruction of its productive capacity. When the mine closes, the Yonggom cannot return to their past (Kirsch 1996a).

Politics of Ecological Representation

[A] rich man came with a lot of money and he destroyed my environment. He got richer and made me poorer. (Yonggom villager Maun Tepke, quoted in Fowler 2000, 1)

The environmental imaginary of each society includes visions of those forms of social practice that are ethically proper and morally right with regard to nature (Peet and Watts 1998, 263). In the collision of ecologies on the lower Ok Tedi River, “the more powerful may impose itself on the other, transforming the natural environment in ways that limit the effectiveness of the other system” (Kirsch 1997a, 132). The moral ecology of subsistence production is jeopardized by the immoral ecology of mining (Dove and Kammen 1997). The mine is global in scope and its harsh treatment of the lower Ok Tedi River set-aside for production is quite common to industrial economies. By contrast, Yonggom subsistence production is local in scope and their destroyed industrial landscape is alien to them.

Environmental imaginaries are experienced through a history of social relations particular to a natural environment, and they are mystically and spiritually expressed (Peet and Watts 1998, 263). The Yonggom compare the mine and its impact on their environment to sorcery and its harmful effects (Kirsch 1997a). Sorcery is negative reciprocity, and the mine is considered irrational and dangerous like sorcery. The Yonggom use sorcery accusations to hold people accountable for their actions; it is a form of social control. Sorcery cause and effect links inappropriate behavior with loss or mishap. Thus, Yonggom claims against the mine represent a moral assertion that pairs destructive environmental impact with specific cases of misfortune (Kirsch 1997a). The Yonggom reject the view that the mine’s liability is limited to material terms; their discourse is recast as a moral issue.

The Ok Tedi mining project was exempted from the Environmental Protection Act of 1978 because the 1982 Ok Tedi Environmental Study was deemed more appropriate. My contribution to the study outlined the resource base of indigenous peoples affected by the project. The study predicted that 200 million tonnes of sediments and dissolved copper up to 200 parts per billion would affect the Ok Tedi River downstream only to Ningerum, some 100 kilometers from the mine. However, the PNG

government has renegotiated the project so many times that the original 1982 environmental study has been made meaningless. In Glenn Banks and Chris Ballard's recent book addressing the ramifications of the Ok Tedi crisis, there is no rendition of the mine's environmental impact offered by Murray Eagle, the former environmental manager for Ok Tedi Mining and more recently the environmental affairs manager for Broken Hill Proprietary. Although Michael Ridd from Ok Tedi Mining and Murray Hohnen from Broken Hill Proprietary substituted for Murray Eagle in the workshop, they also failed to appear in the subsequent book. Readers are unable to assess for themselves the "frank and informative" version of the environmental impact of the mine allegedly presented by Michael Ridd during the workshop (Banks and Ballard 1997, 4).

Colliding ecologies created by the Ok Tedi crisis justify independent environmental impact studies of development projects in Papua New Guinea, assessments based on scientific evidence of impact plus cultural differences in attitudes to environment. A confidential World Bank report delivered to the PNG government early in 2000 identified copper and acid rock drainage as two environmental dangers that could escalate at Ok Tedi (Fowler 2000). Burton convincingly critiqued Ok Tedi Mining's managed science as bad science because in narrowly complying with government requirements it fails to monitor for impact (1997). The periodic high concentrations of copper kill off sensitive algae and affect the food chain, yet Ok Tedi Mining reports copper levels only as averages (Fowler 2000, 13). Roger Higgins, the former environmental manager and now general manager of Ok Tedi Mining, places the following spin on the copper problem: "They possibly kill the algae and possibly kill the fish, yes. But it's all 'possibly'. That's why we say it's of concern. That's why I've said we need to keep monitoring it" (Fowler 2000, 13). Although the extent of the acid rock drainage washing down the river system from exposed mine waste is unknown, Broken Hill Proprietary's web site acknowledges that compensation for it could escalate as much as US\$3.7 billion each year for fifty years. The spin taken by Higgins is to continue to dismiss the risk: "The river here is very benign in terms of its acidity because most of the catchment, which we're in, is limestone, which is the natural counter to acidity and that's why the river is not being affected by acid rock drainage and why it possibly won't. It's one thing to say possibly it is, but the implication, the flip side of that is possibly it won't" (Fowler 2000, 13).

Kirsch's positioning of Ok Tedi as an environmental crisis runs counter to the models that relate social conflict to the distribution of economic benefits (Ballard 1997; Banks 1997; Filer 1990; Gerritsen and McIntyre

1991; Jackson 1998; King 1997). These economic-based models ignore that the Yonggom-based popular ecological resistance movement objected to the high environmental cost of mining. Furthermore, they absolve mining of the fundamental responsibility for environmental impact, and give credence to the notion that out-of-control landowner compensation claims are creating an unstable climate for international investment. Economic explanations of conflict between landowners and resource developers in Papua New Guinea favor resource developers and disadvantage landowners, and they obscure alternative points of view (Kirsch 1997a). Kirsch is correct in insisting that the environmental rights of indigenous people affected by development are compelling and must be given appropriate consideration in national and international debates on compensation.

The unprecedented annual assault of 30 million tonnes of tailings and 40 million tonnes of waste rock entering the river system and the resulting 140 square kilometers of forest dieback and land under stress has represented to me nothing less than “ecocide” (Hyndman 1991b) from a “disaster mine” (Hyndman 1988b). Yet the Yonggom-based popular ecological resistance movement has faced widespread reactionary condemnation. King (1997) shot the messenger when he claimed that I personally created the negative image of the Ok Tedi mine and that Kirsch knowingly supported the Yonggom in their politically correct, fourth-world shakedown of innocent bystanders. The BHP crisis management team spent millions of dollars before settling out of court. Richard Jackson advised the company that “if a project like Ok Tedi could increase people’s life spans and also providing those people were given a greater chance of self-fulfillment by the project, then the destruction of a few square kilometers of swamp forest was a small price—a price admittedly—to pay” (1998, 308).

Jackson’s denial of the environmental disaster was taken to the extreme when he stated that “it struck me as the exact opposite of the truth for their case against OTML to be based on the allegation that OTML had deprived them of their livelihoods when all the limited evidence available to me was that OTML had actually created their rather substantial livelihoods” (1998, 308). Jackson completely discounted the kin-based and subsistence-oriented mode of production when he equated “livelihood” with the capitalist mode of production. Kirsch observed that “when two very different systems exploiting natural resources meet in overlapping geographic territory . . . the more powerful may impose itself on the other, transforming the natural environment in ways that limit the effectiveness of the other system” (1997a, 132).

LIBERATION ECOLOGY

Liberation ecology integrates critical approaches to political economy with notions derived from poststructural philosophy. [It] speaks to a critical analysis of environmental degradation and rehabilitation framed by something called development, and also the liberatory potential of struggles and conflicts exactly around these processes. (Peet and Watts 1998, 260)

There is an acknowledged crisis of representation in anthropology (Marcus and Fischer 1986) that is manifested in a growing distance between the kinds of books anthropologists write and matters that concern the world at large. Exoticism, or presenting an unrealistic ethnographic present, has too long been at the expense of understanding for anthropology and geography. This is mirrored in changes in political ecology “as the underlying social theory moves in poststructural directions and as new developments and tendencies occur in the politics of environment” (Peet and Watts 1998, 36). The anthropological representation of the Ok Tedi conflict offered by Stuart Kirsch (1996a, 1996b, 1997a, 1997b, in press) resonates closely with my moral commitment to Melanesians and to the wider issues of the rights of indigenous peoples and the destruction of the planet.

Successful Convergence of Popular and Radical Environmentalism

[T]he Yonggom and their neighbors have taken the lead in the formation of a global alliance of landowners, ecological activists, anthropologists and lawyers. (Kirsch 1996b, 14)

Liberation ecology, according to Peet and Watts, “proposes studying the processes by which environmental imaginaries are formed, contested, and practiced in the course of specific trajectories of political economic change” (1998, 263). Rather than accept the compensation terms brokered by Broken Hill Proprietary and Papua New Guinea, the Yonggom embarked on a series of global journeys in which they successfully challenged the mine in a precedent-setting legal battle and in the court of global public opinion. The great achievement of the Yonggom in the Ok Tedi crisis is that they became leaders of a global alliance to stop pollution from the mine. They initiated a popular ecological resistance movement that had at its core an environmental imaginary at odds with the hegemonic conception from the Ok Tedi mine.

The Yonggom demonstrated their ability to communicate their concerns to a national and international audience. A new class of political leaders

emerged, adopting more effective strategies of political engagement in a way similar to the Kayapo political leaders (Turner 1991), who were increasingly being assisted by national and international nongovernment organizations.

Two Yonggom leaders, Rex Dagi and Alex Maun, stand out in the challenge against . . . BHP. . . [A]ssisted by the Wau Ecology Institute in Papua New Guinea, Dagi and Maun presented their case against the Ok Tedi mine to the International Water Tribunal in The Hague. Invited to Bonn by several church groups, they urged German shareholders in the mine to press for environmental reform. Dagi attended the 1992 Earth Summit in Rio de Janeiro, while Maun recently spoke to indigenous leaders in northern Canada regarding BHP's bid to gain the concession for a diamond mine. Through these experiences, they have developed a broader understanding of their standoff with the mine, and have become capable political leaders. (Kirsch 1996b, 15)

Contrary to the popular activist slogan "think globally, act locally," for the Yonggom, and the other indigenous peoples in the socioecological region, their autonomous control of the natural environment beneath layers of landscape, place, aesthetics, and subsistence increasingly became dependent on their effectiveness as global political activists (Kirsch 1997b).

Threats to human livelihood and health remain the most important reasons for the global emergence of popular ecological resistance like the Yonggom protest movement (Taylor 1995). The working principle for success of the Yonggom-based coalition of indigenous peoples, anthropologists, and radical environmentalists in popular ecological resistance was unified global interconnections in their political response to the Ok Tedi crisis (Kirsch 1996b). The Yonggom popular ecological resistance movement demonstrated that environmental conflict could be successfully negotiated and resolved independent of the state. The central challenge to the mine proved to be lawsuits against Broken Hill Proprietary in Australian courts.

Liberation ecology recognizes the emancipatory potential of environmental ideas and engages in debate and discourse over nature and modernity (Peet and Watts 1998, 37). The mobilization factors behind radical environmentalists and popular ecological resistance movements can potentially differ quite substantially in liberation ecologies (table 1). Certain common emancipatory denominators promoted the convergence of radical environmentalists' interests with the Yonggom's popular ecological resistance movement. One trend was to view growth and industrialization

as illusions offered by elites to keep indigenous peoples from promoting appropriate and sustainable alternatives. Another common denominator related to the rejection of industrial lifeways, the defense and restoration of commons, and the democratic impulse to return decision-making to local indigenous populations. Finally, the movement was not revolutionary and envisioned neither the overthrow nor the withering away of the state, but sought to wrest concessions and protect and reclaim access to resource control, while securing state and multinational compliance with such concessions (Taylor 1995). This movement of popular ecological resistance focused broadly on livelihood, justice, and democratization. Power was exercised outside the state arena not for ending the Ok Tedi mine, but for showing alternative models for development at the level of action.

Foreign or alien tort claims hold multinationals responsible for their environmental impact overseas. The alien tort spearheaded by the Yonggom held Broken Hill Proprietary accountable in its home country of Australia for its environmental impact in Papua New Guinea. Foreign torts have their limitations. They do not challenge the underlying economic system in which corporations lack financial incentives to limit their environmental impact. The resources required for such cases are rarely available to indigenous communities affected by pollution or to their radical

Table 1. Mobilization Factors of Radical and Popular Ecological Resistance Movements

<i>Mobilization Factor</i>	<i>Radical Environmentalists</i>	<i>Popular Activists</i>
Economic orientation	Post-materialist	Survival issues
Demographic tendency	White, middle-class, educated	Nonwhite, indigenous, poor
Cultural orientation	Nature above culture; biocentric	Cultural continuation; anthropocentric
Identity formation	Identification with nature	Identity rooted in oppression
Issues of concern	Global and long-range	Local and immediate

Source: After Kamieniecki, Coleman, and Vos, in *Ecological Resistance Movements*, 1995, 320.

environmentalist supporters. Moreover, the legal processes and precedents may have little to do with community standards of right and wrong (Moody 1996). The Ok Tedi case had difficulty establishing jurisdiction claims relating to loss or damage to land. The alien tort was reframed to loss of amenity, which established that Yonggom subsistence production was equally as “economic” as capitalist mining production (Kirsch 1997b).

Winning an out-of-court settlement made the Yonggom alien tort influential. The settlement was significant because it offered an alternative to violence, it stimulated environmental debate, and it galvanized global alliances (Kirsch 1997b). Compensation in the Ok Tedi settlement is linked to a program mitigating environmental impact to the Yonggom territory on the lower Ok Tedi, and any disputes in implementation must be heard by the Victorian Supreme Court in Melbourne.

As the Ok Tedi crisis moved into its post-settlement phase, the indigenous people of the socioecological region grew weary waiting for the implementation of the promised containment of tailings. Ok Tedi Mining attempted to deal with forest dieback by controlled dredging, but admitted it is not the solution (Fowler 2000, 11). According to Ken Voigt, the OTM mine waste manager,

We started them in March 1998. And what we've done here is dredged a big hole in the river to trap mine sediment that comes down the mining operations. And that's to reduce the bed-level here, because what we're getting around this region here is dieback that's being caused through increased flooding over the floodplain. So the idea is to take sediment out of the river to reduce the bed and therefore to reduce the amount of flooding, so we can try and redress the dieback problem. It would probably be very difficult to improve the environment in the Fly through dredging, because you'd have to dredge in several different locations and the concern there is where would you put the sediment? Would it be a worse environmental problem than not taking it out in the first place? So I think you would have to dredge all the way up the Fly to take this existing sediment out to improve it immediately. (Fowler 2000, 11)

The Yonggom are asking “What are they trying to protect, dead trees, kunai grass, and sand?” (Stuart Kirsch, personal communication, November 1998). Many have decided it is too late, and they will have to rely on their out-of-court cash settlement, but the benefits are often superficial. Since settlement, June Cosmas, a Yonggom from Erecta village at the confluence of the Ok Tedi and Fly rivers, has received just 200 kina (A\$100) compensation. “With 200 kina I can buy 20 kilos of rice, maybe about 10 large tinned fish, bully beef maybe 10, sugar maybe 5, and maybe one or

two odd things. We can't get a lot. And that would last you, maybe, for two weeks, and it's gone. You know that's all the money" (Fowler 2000, 17).

The mine has been winding down and was scheduled for decommissioning early in the new century. However, with the mine continuing to deliver sedimentation, copper, and acid rock drainage assaults on the river, Paul Anderson, the new managing director, has declared it "a dysfunctional aspect" of Broken Hill Proprietary's portfolio: "As I'm sure all of you are aware, Broken Hill Proprietary has undergone significant change over the last year. In a portfolio and financial management sense, there is considerable progress that's been made to address the more dysfunctional aspects of BHP's portfolio. We're not comfortable with our role as operator of that mine and we have put together a proposal that we'll be reviewing with our partners and with the Government and other people as to where we might go forward in the future under the assumption that the mine does continue to operate" (Fowler 2000, 5).

Broken Hill Proprietary's intention to quit the mine has regalvanized the popular ecological resistance movement. One old Yonggom man lamented, "It's no good for BHP to destroy our environment and just leave us like this and go. They have to develop our area before they leave" (Fowler 2000, 5). Isaiah Maun, a Yonggom from Bige village elaborated, "I don't feel good because I don't know what is going to happen in the future, in fifty years time or a hundred years time. For myself and for the Bige people and for all of us around, living around the mining area, it is better the company should do something before it goes away" (Fowler 2000, 5). Speaking from Yeran village, Alex Maun, one of the new Yonggom leaders who initiated the movement of popular ecological resistance, said, "We will demand that BHP is responsible for cleaning up the mess, unless BHP transferred liabilities to the new mining company. Then we will pursue the new company" (Fowler 2000, 16). Nick Styant-Brown, the Slater and Gordon lawyer who secured the out-of-court settlement in 1996, said, "I think this is a fundamental development in the history of Ok Tedi and a real spanner in the works in terms of all the negotiations, which are presently taking place to enable BHP to exit. The fact of the matter is that this represents a huge potential liability for both BHP and OTML, and it's really not possible to complete any transaction and for BHP to get out until such time as this litigation is resolved" (Fowler 2000, 11).

Steps toward resolution of the matter started on 11 April 2000, when Yonggom leader Rex Dagi reopened the lawsuit against Broken Hill Pro-

prietary. Working through Slater and Gordon, the movement's demands for river cleanup and environmental restoration were to be heard in the Melbourne court in mid-2000. Broken Hill Proprietary meanwhile is attempting to sell its interest in the mine to the state of Papua New Guinea on the condition the company is indemnified in perpetuity.

The fate of the Fly River socioecological region continues to hang in the balance.

ACADEMIC STAKEHOLDERS AS HONEST BROKERS?

[W]ith the commercialisation of Australian universities and research programs in the 1980s, many academics have fallen into the camp of government, big business and the mining companies. (B Brunton 1997, 170-171)

The Ok Tedi crisis compels everyone to pay attention to their own society's responsibilities for conditions elsewhere in the world. As an activist, Kirsch applied his anthropology skills at home, where they proved the most effective (1996b). The roles of anthropologist and activist have been effectively combined to analyze the social costs of environmental problems and suggest remedies for the Ok Tedi crisis. In the impartiality-versus-advocacy debate in anthropology, I endorse Kirsch's position that activism is a responsible extension of the anthropological commitment to maintain reciprocal relationships with the people with whom one has worked (1996b).

Colin Filer denounced activism as contrary to the best interests of Melanesian indigenous people, and advocated that academics instead become honest brokers negotiating deals through mining companies with local communities (in Kirsch 1996b, 26). Filer assumed local indigenous communities in Papua New Guinea would trust anthropologists working for companies, because the indigenous people always want the development that mining can provide. The Ok Tedi mining agreement made the PNG government financially responsible for providing the social and economic impact study, which was conducted by the geographer Richard Jackson for the Department of Minerals and Energy (Jackson, Emerson, and Welsch 1980). The Ok Tedi mine was required to finance the environmental impact assessment. At the time the mine started, I would have agreed with Filer that the local indigenous people obviously wanted the prospects of development they assumed would come with the mine. Having developed expertise in understanding Wopkaimin subsistence ecology, I agreed to conduct environmental impact consultant work for Natural Systems

Research in 1981. I contributed a book-length report to the original Ok Tedi Environmental Statement (Hyndman 1982b; Pernetta and Hyndman 1982; Frodin and Hyndman 1982). Later, I returned in collaboration with the Ok Tedi Health and Nutrition Project during the infrastructure construction phase in 1982 (Hyndman, Ulijaszek, and Lourie 1989) and after gold mining started in 1985 (Ulijaszek, Hyndman, and Lourie 1987). I was not impressed with the quality of the environmental impact study and referred to my role in leading the terrestrial ecologists for the study as “zipping down the Fly with *lain abus*” (Melanesian Tok Pisin for wild animal group; Hyndman 1981). The eight subsequent supplemental agreements made a sham of the original environmental impact statement.

The academic assuming a stakeholder role as honest broker is seriously challenged by Brian Brunton (1997, 174), of Greenpeace Pacific in Papua New Guinea, who expressed “nothing but contempt . . . for those scholars who openly took Broken Hill Proprietary’s part” in the Ok Tedi crisis. Richard Jackson acknowledged he was the academic who sided with Broken Hill Proprietary (1998, 307), and then queried “So why did I sell out? Actually, I didn’t—if I had been engaged by Slater and Gordon, I would have received almost certainly the same pieces of silver.” Jackson elevated economic development over environmental degradation to justify his complaint that “academics who have tried to act as honest brokers between the parties in mining ventures will find themselves under attack from NGOs, even more so than the mining companies themselves” (1998, 310). With Kirsch acting for the plaintiff and Jackson acting for the defense, one might ask which academic qualified for the stakeholder role as “honest broker”?

The ecocide from the mine placed me in agreement with Kirsch (1996b) that a Melanesian indigenous community in Papua New Guinea wanting money from development is not enough for anthropologists to ignore the consequences of mining. Impartiality belongs to an earlier realist period of positivist and empiricist methodology that some gatekeepers anachronistically cling to in the mistaken belief that researcher bias can be eliminated or minimized. Anthropologists in the Ok Tedi crisis, as Terence Turner observed in working with the Kayapo in Brazil (1991), have long since passed from being participant observers to being observant participants, which positions them better as critics than as stakeholders attempting to act as honest broker consultants to mining companies. Academics engaged by mining companies as consultants or employees must work according to managed science and circumscribed briefs that preclude the freedom of critical inquiry available in the academy.

Richard Jackson and I have perhaps published most widely about Ok Tedi, but our respective geographical and anthropological approaches to indigenous peoples and mining are extremely different. As noted by Eugene Ogan, I have developed a reputation “of being the preeminent anthropological interpreter and critic of PNG mining” (1996). Far from being critical of mining, Richard Jackson has long acted as academic consultant to the Ok Tedi mine. Our field research has diverged from Papua New Guinea only to doggedly converge again in the Philippines. I have critically examined the impact of small-scale mining and prospecting by Western Mining Corporation on the T’boli and B’laan, indigenous peoples of southern Mindanao (Duhaylungsod and Hyndman 1992, 1993; Hyndman and Duhaylungsod 1998). Meanwhile, Western Mining Corporation’s operation in southern Mindanao has hired Richard Jackson as a consultant (Jackson 1998). The reactionary political fallout against anthropological advocacy will continue (eg, R Brunton 1999), but Kirsch has successfully demonstrated that concentrating on one’s own society’s responsibility to regulate overseas operations of business and industry can mute it (1996b).

I support Peet and Watts that “liberation ecologies hopefully provide a set of critical tools which point up limitations, intractabilities, and contradictions of various models of development” (1998, 268). As an anthropologist in the academy, I felt I not only had the opportunity but also the responsibility to independently embrace a critical liberation ecology approach to the Ok Tedi crisis that directed research to community empowerment. Liberation ecology critiques branches of radical environmentalism that abandon reason and science as guides to human action as idealistic and even eco-fascist, and illustrates that the retrieval of popular ecological resistance discourses on nature and ecological management need not romanticize indigenous peoples. One of the merits of the turn to discourse is the demand it makes for a liberation ecological thick description of the articulations between societies expressed as the interaction between environmental imaginaries armed with different powers and technologies.

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Abstract

Since the start of the Ok Tedi mining project in Papua New Guinea in 1981, Broken Hill Proprietary has operated it. Weak environmental protection laws and a series of ecological disasters have endangered the greater Ok Tedi and Fly River socioecological region. A grassroots indigenous popular ecological resistance movement made an out-of-court settlement with the mining company in Melbourne in 1996. Early in 2000 the indigenous movement took Broken Hill Proprietary back to court in Melbourne to block the company's attempt to abandon the Ok Tedi mine. Research started with Wopkaimin subsistence ecology in the 1970s. Later the political ecology of the Ok Tedi crisis was evaluated, as was ecological change in social terms; both are illustrated through the politics of cultural

and ecological representation. After the successful convergence of radical environmentalists and indigenous popular ecological resistance against the Ok Tedi mine, research shifted to liberation ecology to study the emancipatory potential of struggles and conflicts against environmental degradation. The responsibilities of academics conducting research in the Ok Tedi crisis are examined. The Ok Tedi crisis challenges the proposition that academics can act as honest brokers through mining companies to negotiate deals for local communities. Academics engaged by mining companies as consultants or employees must work according to managed science and circumscribed briefs. The approach of critical liberation ecology, which directs research to community empowerment, represents a freedom of critical inquiry only available in the academy.

KEYWORDS: ecology, liberation ecology, mining, Ok Tedi, Papua New Guinea, political ecology, research conduct