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Darkness in El Dorado: How Scientists

and Journalists Devastated the **Amazon**

by Patrick Tierney

(W.W. Norton, 417pp., $27.95)

Last fall the American Anthropological Association braced for the ugliest scandal in its history. The New Yorker was about to excerpt, and W.W. Norton was about to publish, a book that would tell a "nightmarish story--a real anthropological heart of darkness beyond the imagining of even a Josef Conrad (though not, perhaps, a Josef Mengele)." The warning came from two anthropologists, Terence Turner and Leslie Sponsel, who had seen the galleys of a book called Darkness in El Dorado: How Scientists and Journalists Devastated the **Amazon**. Now it was anthropology's turn to be devastated. According to the journalist Patrick Tierney, a well-known member of the profession had been involved in a eugenics experiment in the South American jungle. Mistah Kurtz had been reborn as Professor Napoleon Chagnon of the University of California at Santa Barbara, a world authority on native Amazonians. The Mengele for whom he worked was James Neel of the University of Michigan, a medical doctor, a pioneer geneticist, and a member of the National Academy of **Sciences**.

Thirty years earlier, in 1968, Chagnon served as the anthropological point man for Neel's expedition into a primitive Venezuelan **tribe**. The sponsor was the Atomic Energy Commission, which wanted to know how radiation had mutated the genes of the victims of Hiroshima. In the Yanomami Indians, the AEC saw an uncontaminated control group. But that

was not the only agenda, according to the new book, because Neel was a eugenicist who wanted to study natural selection in an isolated population. It was for this reason, apparently, that he and Chagnon had inoculated the Yanomami with an obsolete and dangerous measles vaccine, Edmonston B, which backfired and spread the very disease that it was supposed to fight.

Neel then failed to treat some victims, apparently to set up a control group, again with catastrophic results. In "sheer criminality and corruption," Turner and Sponsel warned, Tierney's revelations were without precedent. They would put "the whole discipline on trial." And that was precisely what happened when their memo reached the press, generating headlines such as "Scientists Infected **Amazon** Indians," "What Happens When Genocide Poses as **Science**," and, inevitably, "Tribal Warfare Breaks Out in Anthropologists' Ranks."

Soon Turner, Sponsel, and Tierney were being accused of a hoax. James Neel had died six months before, but colleagues obtained Tierney's galley proofs and poked holes in his heavily footnoted argument. According to epidemiologists, Neel could not have infected the Yanomami with measles, because the kind of vaccine that he administered has never been shown to communicate the disease, only its symptoms. Well before Neel's arrival in the Upper Orinoco, measles had broken out, which was why he brought the vaccine: to fight an epidemic that exploded around him.

Fighting off panic, surrounded by the sick and the dying, Neel's team inoculated enough Yanomami to reduce the usual death rate from disasters of this nature. It was true that, in exchange for the machetes and the axes that the Yanomami craved, Neel extracted thousands of blood, urine, stool, and saliva samples, in a way that might not be allowed today. It was also true that Neel worried about the health of the gene pool; he was a geneticist. But he had a long record of opposing controls on who reproduced with whom. As for the idea that he planned the vaccinations as an experiment, this was an inference based on conspiracy theory and a misunderstanding of medical protocols.

By the time Tierney's book appeared, the genocidal medical experiment was just a big misunderstanding. According to Turner and Sponsel, they had not intended to endorse Tierney's allegations, only to warn of the impending scandal. They were indignant that their confidential e-mail message had been forwarded to the rest of the universe. Tierney felt equally injured: he had only raised the possibility that Neel exacerbated the measles epidemic and was conducting an experiment to test eugenicist theories. He was not responsible for the inflammatory language used by the two anthropologists providing the back-cover endorsements for his book. The publisher delayed publication, Tierney revised his galleys, and The New Yorker cautiously subtitled its excerpt "Did Napoleon Chagnon's expeditions harm one of the world's most vulnerable **tribes**?" In Tierney's carefully chosen words: "Today, scientists still do not know whether people who have been vaccinated with Edmonston B can transmit measles"--just as scientists still do not know whether Patrick Tierney is from Mars.

The collapse of the headline accusation notwithstanding, Tierney's book asks important

questions. Did the very process of studying the Yanomami take the lives of many of them? What happened to them after the researchers and the film crews went home? Were scientists so busy making their careers that they left behind sick and dying subjects without medical treatment? The Yanomami have been a fixture in the anthropological pantheon for thirty years. When Napoleon Chagnon began fieldwork in 1964, they were a little-known population of 20,000 in the headwaters of the Orinoco and the **Amazon** between Venezuela and Brazil. Most were still lords unto themselves. Their clothes consisted of a cotton waistband for women and a penis string for men. They greeted visitors with drawn bows, engaged in ritual combats, and blew hallucinogenic snuff up each other's noses. They lived in ring-shaped communal dwellings and often seemed to be at war with each other.

Chagnon was followed by many other researchers, but none matched his production of data, which included an unprecedented series of ethnographic films with the director Timothy Asch; and none matched his book sales, mainly to undergraduates taking anthropology courses. With more than one million copies in print, Yanomamo: The Fierce People is a comprehensive ethnography of the kind that few anthropologists attempt anymore, that describes an entire way of life. It is also an adventure story in which Chagnon matches wits with stone-age warriors and, through a combination of handouts and heroism, wins the respect of some and the enmity of others:

In just a few moments I was to meet my first Yanomamo..., my first primitive man. What would he be like? I had visions of entering the village and seeing 125 social facts running about altruistically calling each other kinship terms and sharing food, each waiting and anxious to have me collect his genealogy....Would they like me? This was important to me; I wanted them to be so fond of me that they would adopt me into their kinship system and way of life....I looked up and gasped when I saw a dozen burly, naked, sweaty, hideous men staring at us down the shafts of their drawn arrows! Immense wads of green tobacco were stuck between their lower teeth and lips making them look even more hideous, and strands of dark-green slime dripped or hung from their nostrils....

More than anyone else, Chagnon brought the Yanomami to the attention of the world. For this, he deserves some of the credit for the international pressure that has forced the Brazilian and Venezuelan governments to take protective measures. Regrettably, the cost of being discovered is still very high. The naked rainforest Indians who appeal to television audiences as primeval innocents are, to prospectors and other intruders, dangerous savages. Their vulnerability to imported diseases is long term: survivors of the first epidemics continue succumbing to malaria, tuberculosis, and other contagious diseases at elevated rates. Few in number compared with colonizers, they depend on international publicity, on the whims of national opinion, and on the shifting moods of government to defend themselves. Anthropologists have often played the role of whistle-blower, and admiring journalists have directed themselves against the indicated target, such as missionaries.

Not Patrick Tierney: he shows that it is not just military expeditions, missions, and gold rushes

that kill rainforest Indians. Ph.D.'s can kill, too, which he demonstrates through the case of Napoleon Chagnon. Nor is he merely pointing out that accidents do happen. If Tierney is to be believed, Chagnon is a prevaricating monster who bears moral responsibility for the deaths of hundreds of Yanomami in contact epidemics; who, with the trade goods that he used to buy information, set off wars between his subjects; who doctored his data to disguise the true source of Yanomami violence--himself; and who fended off a small army of critics by trying to set up a jungle research empire in league with corrupt Venezuelans. Even the famous ethnographic films that Chagnon helped to make are, in Tierney's account, staged creations that led to more disease and death for the Yanomami. Judging from Darkness in El Dorado, Chagnon is to blame for just about everything--even military coups, because the unease over his activities "created concentric circles of violence, starting among the least-contacted Yanomami villages and spreading to Venezuelan national politics, where it culminated in a failed putsch, led by tanks and **attack** planes, against the presidential palace."

What do anthropologists think of all this? That's where the fun begins. Some are angry with Tierney and his promoters, the unfortunate Turner and Sponsel, for scapegoating an honorable man. Others are peeved with the same trio for botching their case, because Chagnon was already a pariah in cultural anthropology. Perhaps his only rival in this regard is Derek Freeman, who embarrassed the profession by refuting one of its canonical works, Coming of Age in Samoa, Margaret Mead's portrait of carefree sex in the South Seas. Not coincidentally, Freeman and Chagnon belong to the minority of sociocultural anthropologists who believe the discipline should be a **science**, which tests hypotheses with verifiable evidence.

In practice, anthropological fieldwork is so dependent on you-had-to-be-there judgment that hostile camps have come to accuse each other of being "positivists" or "anti-**science**." But the real reason that Freeman and Chagnon became anathema to their profession is that they are also sociobiologists. They argue that human aggression is not just the result of cultural conditioning, but is inherited from our ape ancestors through natural selection. Chagnon became a star in sociobiology when he reported a spectacular finding: that Yanomami men who killed had twice as many wives and three times as many offspring as those who did not kill.

In cultural anthropology, most of Chagnon's colleagues shrugged: how could a species-wide biological endowment explain the amazing range of behavior shaped by culture? If sociobiology was just another chapter in the nature/ nurture saga, it might not generate much invective. Unfortunately, biological explanations for violence tend to be picked up by the political right, prompting counter-accusations that sociobiologists are racists, fascists, or eugenicists--a form of overkill in which Tierney indulges with his references to Chagnon and Neel's "philosophical embrace of violence" and their supposedly reactionary politics.

Still, Chagnon's work became a battleground for good reasons. The naked warriors in his films were seductive advertisements for sociobiological assumptions. Yet anthropologists who

followed him into the Yanomami rejected his depiction of them as "the fierce people." They were certainly a warrior society, but most local groups did far less raiding than the ones that Chagnon studied. Indeed, some had done little or no raiding for generations, and most **Amazon** specialists disagree that Yanomami who kill have such a large reproductive advantage.

Then there was the question of Chagnon's personality, which could fairly be described as Napoleonic. (He was named after a French-Canadian grandfather.) Judging from his ability to learn a difficult language, write a compelling book, and make powerful films, he was doing anthropology better than just about anyone else, which he was not shy about expressing. Perhaps doing fieldwork with the Yanomani required a tough character, but how had Chagnon's blunt, overbearing ways affected his perception of his subjects? When other ethnographers found the Yanomami less warlike than he had, the suspicion grew that he had projected his own confrontational tendencies onto them.

In the words of John Cook, who as a student fell under the spell of "the fierce people," Chagnon embodied a chestbeating anthropology that glamorized the "dirty, complex, morally and politically perilous process" of fieldwork. While the rest of the profession became preoccupied with epistemological and moral dilemmas, Chagnon made no apologies for testing his manhood against Amazonian warriors. As the field changed, he came to represent an earlier, more adventurous era, when a rugged location counted for more than a fluency in post-structuralism. Like James Neel, he was a tough research entrepreneur with a compulsive attitude toward extracting data. As anthropology became more introspective, it became easy to accuse such a researcher of insensitivity toward his subjects. Chagnon was all the easier to indict as a swaggering brute because, unlike anthropologists who claim to be self-critical but bury their contradictions under six feet of theory, he wrote an entire book about his methodology.

What blindsided Chagnon was the pathogen-loaded steel axe, and all the desire and the death that could be carried in such a simple utilitarian object. If any part of Tierney's book holds up to the scrutiny that it deserves, this will be it: the fatal attraction of the Yanomami to the trade goods that Chagnon offered. For people who have been trying to chop down tropical forest with stone axes, it is hard to exaggerate the appeal of steel. Since the Yanomami must clear jungle to keep from starving, it has become a matter of life and death for them to obtain steel axes and machetes.

Chagnon took Yanomami men at face value when they said they fought over women, but the usual explanation for primitive warfare is competition for natural resources or trade routes. This is how Brian Ferguson reinterpreted Chagnon's data in 1995 in his ethno-history Yanomami Warfare: to show that most of their wars on record have been set off by the introduction of steel tools and diseases, not by competition for women. Ferguson also concluded that Chagnon became a "wild card" in local politics and had "a major impact" on the Yanomami around him, to the point of inadvertently setting off hostilities. Yet Ferguson

was careful to note that Chagnon was the only outsider who had recorded his activities in enough detail to make it possible to blame him. While missionaries had handed out larger quantities of goods, they had not left the records necessary to document the consequences.

Still, if Yanomami killed each other to monopolize the suppliers of steel tools, it was not just the missionaries who were responsible. Chagnon's advance work for the Atomic Energy Commission required handing out more machetes, axes, and cooking pots than anyone else in the history of anthropology. His belief that the Yanomami fight over women made it harder for him to see the repercussions of what he was doing; but then Ferguson assembled the evidence that the Yanomami fight over trade goods, and now Tierney shows that they fight over anthropologists. Turning Chagnon's own confident accounts against him, Tierney shows how his gifts sent Yanomami on raids and how his expeditions delivered pathogens deeper into Yanomami territory. Never have I seen more sickening bar graphs than the ones that Tierney derives from Chagnon's data. They show sharp upswings in Yanomami homicides and epidemic mortality following the arrival of missionaries and researchers.

From 1987 to 1990, tens of thousands of Brazilian gold miners invaded the **tribe**. An estimated fifteen hundred Yanomami died from contagions. In Brazil, the mining lobby tried to fragment a new Yanomami reserve into an archipelago of separate territories, arguing that otherwise they would exterminate each other. Brazilian anthropologists denounced Chagnon for turning the Yanomami into a scientific archetype for ferocity, which presumably had made it easier to justify grabbing their land. Whether or not Brazilian colonists required sociobiology to justify their activities, Chagnon dropped "the fierce people" from his book title.

Chagnon's problems in Venezuela had begun earlier. Objections to the AEC's intrusive research, along with resentment of Chagnon's funding, accomplishments, and behavior, had blocked research permits for a decade. By 1990 he was so unpopular with Venezuelan universities, anthropologists, and the more visible Yanomami leaders that he had no choice but to make amends with an estranged research partner, the Venezuelan naturalist and strip miner Charles Brewer Careas. Charlie Brewer was a symbol of his country's "Conquest of the South," and getting back together with him seems to have been Chagnon's biggest mistake.

Brewer had been the first to interest Neel and Chagnon in the Yanomami in the early 1960s. Before then, Neel had been planning to send his research teams to the Kayapo in Brazil, another warrior people who have since become the research domain of Chagnon's arch-critic Terry Turner. Oh, what might have been! On the expedition in 1968, Brewer served as dentist, but that was just one of his many skills. Others were photographing the soaring jungle mesas around Angel Falls, lecturing for the New York Botanical Garden, and inventing the Brewer Explorer Survival Knife. In Caracas he became minister of youth, in which capacity he recruited gang members to start a border war with Guyana. He also organized gold-mining ventures, adapted water-jet technology to industrial-scale mining, and turned some of the same lost-world landscapes that he had explored into what Tierney calls "mud soup."

Chagnon was among Brewer's many critics. But by now Chagnon was so unpopular with

Venezuelan anthropologists that it was only Brewer who could get him research permits, through the latter's connection to Cecilia Matos, the mistress of President Carlos Andres Perez. Matos presided over a foundation to help Indians, and was accustomed to commandeer helicopters from the armed forces and descend upon Yanomami villages. Thanks to Brewer and Matos, Chagnon was able to return to the Yanomami, but on terms chronicled unforgivingly by Tierney, and also on terms that antagonized the Venezuelan military, which resented ferrying around the president's girlfriend and her foreign guests.

When indictments for corruption sent Perez to prison, Matos left the country, and she is still a fugitive from justice. And just as the graft investigations widened to Brewer and his plans for protected rainforest, an interim president appointed him and Chagnon to the commission in charge of the new Yanomami biosphere. Presumably Charlie Brewer's task was to protect the Yanomami from rapacious mining interests, and Napoleon Chagnon would protect them from unethical researchers. Among the many who objected to this arrangement was a powerful Catholic mission, run by the Salesian order from Italy, to whom the Venezuelan government had long entrusted the Yanomami. There was a national outcry.

Chagnon's appointment ended in a jungle clearing on September 30, 1993, when a Catholic bishop, a colonel, and a judge expelled him from the country. Banishment is the usual price for losing a patronage battle over rainforest Indians, but Chagnon did not concede graciously. In The New York Times and the Times Literary Supplement, he accused the Salesians, with whom he had long cooperated, of being careless about epidemics, and of handing out shotguns that men used to kill each other. Soon the Salesians and the Yanomami near their missions were accusing him of similar offenses.

Patrick tierney had been visiting the Yanomami since 1989, but over in Brazil. For the purpose of investigation, he accompanied gold miners on their incursions and became involved in indigenous rights campaigns. At one point Viking sent out advance copies of a book called Last **Tribes** of El Dorado: The Gold Wars in the **Amazon** Rainforest, but it never reached the bookstores. Perhaps Tierney realized that the mining invasions had become an old story.

Despite the bitter feuds among anthropologists and missionaries, they and their agitator friends had pressured the Venezuelan and Brazilian governments into setting up substantial reserves for the Yanomami. The miners had been kicked out, at least for the time being. Chagnon was washed up politically, with little chance of returning to the field, but he was still arrogant and unrepentant, and he would be a provocative addition to the usual parade of villains. Pulling together the many criticisms of Chagnon's work, Tierney went a step further and sought to show that the super-ethnographer was the main cause of the violence that he had reported.

Chagnon blamed his troubles on Salesian missionaries, on anthropologists enamored of the noble savage, and on indigenous rights organizations such as Survival International, which had joined the clamor to block his research permits. But the underlying problem, Tierney

contends, was that Chagnon had alienated the Yanomami. One reason was his tireless extraction of Yanomami genealogies, which required persuading his informants to break taboos against using personal names. Quoting Chagnon's own explanations of how he took advantage of tribal schisms to gather names, Tierney accuses him of provoking further hostilities. According to Chagnon, his candor about early mistakes is being misinterpreted as a statement of preferred methodology. Even if asking Yanomami about this subject requires delicacy, ethnographers who disagree with Chagnon have managed to collect genealogies without anyone getting too upset about it. Since even the Salesians had a collaborative genealogy project with Chagnon, I suspect that Tierney makes more of this problem than it deserves.

The second reason that the Yanomami turned against Chagnon, according to Tierney, was the ethnographic films and their epidemiological consequences. To shoot strong footage, Chagnon and his partner Asch had to bring distrustful Yanomami groups together for volatile alliance feasts. If these gatherings were successful, Tierney claims, the predictable outcome was a raid against a third Yanomami group. And another predictable outcome was an epidemic brought in by the film crew.

Chagnon is certainly not responsible for every bug that hit a vulnerable population. He brought more medical aid than most researchers do, and he should not be blamed for missionary and governmental breakdowns. Still, under pressure from the AEC's complex and expensive research agenda, he failed to take precautions that could have saved lives. According to Tierney:

With sickness raging at the mission stations, there should have been an absolute ban on travel to the inland villages except for express emergency relief. But the widespread sickness was also related to the frenetic pace of scientific research in 1971. During this year, Chagnon gathered blood at more than a dozen villages on the Ocamo River alone, made first contact with another huge village on the upper Mavaca (where he also collected blood), and shot sixteen miles of film at Mishimishimabowei-teri. He kept traveling through the malaria and cold epidemics sweeping the mission bases, picking up guides, paying everyone in steel, and never stopping for quarantine controls. Sometimes he had to travel at full throttle at night. He couldn't stop. This was the year Neel sent more geneticists into the field than ever before--three complete expeditions....In this way, the worst epidemics to hit the upper Orinoco coincided with the AEC's two most productive years, 1968 and 1971.

So do the Yanomami really hate the anthropologist who made them famous? Some of them do. In one of Tierney's opening scenes, only an agile Charlie Brewer saves Chagnon from having an axe buried in his head. By the early 1990s, Yanomami working with the Salesians and Yanomami working with Chagnon and his allies were killing each other in a trade war, not for the first time. Cesar Dimanawa, a Chagnon guide who turned against him and became president of the Catholic-affiliated trading cooperative, ran his own shotgun-toting death squad. Earlier there was a war between Chagnon's village and the village of the French

anthropologist Jacques Lizot, a Salesian ally who is accused of using his own bountiful supply of trade goods to create a male harem.

If even a small number of the accusations being thrown around are true, just about everyone involved with the Yanomami shares responsibility for a catastrophe that has yet to end. The survivors can be forgiven for wanting to blame someone. Missionaries are obvious candidates, but they have often become the most reliable allies for vulnerable groups such as this one, if only because they do not have to get back to California for the fall semester. The Venezuelan and Brazilian governments are an even more obvious choice, but they cannot be expelled. So for the time being, many Yanomami have settled upon Chagnon, whose denunciation firms up their problematic relationships with other outsiders.

Tierney's genealogy of evil stretching back to the Atomic Energy Commission allows him to sidestep some difficult issues. His book suggests that Western **science** has been a net loss for the Yanomami and other vulnerable groups. He could be right: in the debate over the Human Genome Project, critics have plausibly pointed out that corporations are far more likely to benefit than the indigenous groups being harvested. The same can be said of corporate drug-testing on Third World populations. What have the Yanomami received in return for being studied so intensively? "We are tired of being constantly investigated, of them taking our blood and using us as little animals," a Yanomami leader complained.

But as Chagnon's colleagues Kim Hill and Magdalena Hurtado have observed, pulling the Yanomami through epidemics is not merely a question of vaccinating them on time. Exactly why such groups are so vulnerable is not a simple matter; and protecting them from ravages such as drug-resistant tuberculosis requires medical research of the kind that, thanks to the kind of headlines generated by Tierney's book, is easily interpreted as a genocidal conspiracy. Careless journalism that increases suspicion of vaccination campaigns could take many more lives than the kind of errors that Tierney reports, as suggested by the impact of HIV debates on vaccination campaigns in Africa.

Conspiracy theories also make a perfect rationale for nationalist reactions by Latin American governments. By deciding that the most important story is "how scientists and journalists devastated the **Amazon**," Tierney implies that the solution is more supervision by governments, whose long history of neglect he mentions only incidentally. Pointing the finger at foreign researchers and missionaries is a familiar drill for Creole elites who themselves have much for which to answer. In Venezuela, the indigenous affairs department reacted to Tierney's charges by declaring a moratorium on all foreign research in indigenous areas. "How is it," asked a Venezuelan congresswoman, "that despite the presence of so many scientists in indigenous communities, the Indians are sinking deeper and deeper into extreme poverty, and diseases like malaria and tuberculosis are more and more common?" Tribal leaders are asking the same question about the Venezuelan government, which has failed to deliver promised medical care. According to Yanomami leaders, twelve of their people have died from respiratory diseases since October 2000 owing to official negligence, including the dispatch of expired vaccines.

To survive another generation, people like the Yanomami must be able to appeal to national and international opinion, but hyping their cause without hurting it may be impossible. Tierney's account of a non-Chagnon film expedition, by the BBC/Nova team that shot Warriors of the **Amazon** in 1993, is symptomatic. Of the ninety Yanomami being filmed, four expired during the process, including a mother and infant whose slow death the crew recorded over a week. While the crew was able to fly in a replacement camera from London, it was not able to send the mother an hour downriver to a mission infirmary. Tierney sees a basic contradiction here, between human decency and the crew's need for death-in-the-jungle footage, and he is right.

Another problem is that any footage that is sufficiently savage to interest television viewers will, sooner or later, deeply embarrass the people so depicted. Once Yanomami wish to be accepted as peaceful, clothed citizens, they find it harder to view the Chagnon-Asch films as a contribution to their cause. All in all, Tierney has convinced me that ethnographic film-making is a bad idea, so I am looking forward to the National Geographic special that he happens to have in the works, on human sacrifice in the Andes.

Since the idea of leaving the Yanomami alone has dwindled to a pipe dream, helping them requires a combination of sensitivity and muscularity that no one has so far mastered. Ironically, just a few years ago, the American Anthropological Association jettisoned its procedures for judging ethics violations. Unlike the legal and medical associations, it does not license members, and it can do little to punish them. Since the complaints received by the ethics committee consisted mainly of anthropologists accusing each other of plagiarism, it decided to focus on educating them about broader issues.

Now, thanks to Tierney's book, the ethics committee is drafting guidelines on how to do fieldwork, including when anthropologists should take responsibility for medical assistance, how they are to compensate their informants, and how they are to obtain informed consent. Still, some dilemmas will never be resolved by guidelines. Any researcher working in Third World conditions can prevent people from dying: by personally taking them to hospitals, by pressuring the staff into attending them, by buying medicine and other essentials, and, not infrequently, by persuading relatives to invest scarce resources in what they regard as a hopeless case. Of course, doing all these things may not leave much time for research--or for investigative journalism.

Requiring investigators to obtain informed consent from the people whom they study is another necessary step that, while being codified in increasing detail to govern research on human subjects, can be impossible to obtain in a meaningful sense. If most Yanomami had no conception of the larger world thirty years ago, how could Chagnon have explained even a better designed, less exploitative AEC project to them? What if, by forcing Western medicine on unwilling subjects, researchers can help them to survive threats that they barely comprehend?

As for how to compensate the Yanomami for being studied, what they seem to want are more

of the same trade goods that aggravated rivalries and led to many deaths. The most coveted item is still the shotgun. One of Tierney's most memorable passages is about the cargo cult that he encountered among the most remote Yanomami groups. To attract helicopters carrying steel tools, they were cutting out landing pads, even though they now realized that Western machinery brings deathly disease. "Americanos land here--boom. Caraca-teri land--boom. Brazileros--boom," shamans called to the helicopters, hoping to entice them down from the sky. Once the foreigners unloaded their presents, the Yanomami planned to scare them away before they left the next contagion.

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By David Stoll

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