



Remembering Darrell Posey's contribution to ethnobiology and ethnoecology

Relembrando as contribuições de Darrell Posey para a Etnobiologia e Etnoecologia

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A SHORT BIOGRAPHY

The main purpose of this article is to provide an account of Darrell Posey's academic life, from a north-American undergraduate student interested in entomology into one of the main figures and builders of Ethnobiology and major advocate of Indigenous Peoples' rights around the world. This short biography highlights his relations with the Kayapó indigenous people and his role in coordinating a decade-long interdisciplinary ethnobiology research project named "The Kayapó Project". It was mostly through the development of this team effort that he contributed fundamental and long-lasting theoretical, methodological and practical advancements to the field of ethnobiology.

Darrell Addison Posey (1947-2001) was a prestigious American anthropologist/ethnobiologist, best known for his studies with the Kayapó Indians from Brazil and his advocacy of Indigenous Property Rights. Posey was born in March 14, 1947 in a rural area in Henderson, Kentucky (USA), where his family had been farming for many generations (DEWAR, 1995). At the Louisiana State University at Baton Rouge, he took a BSc in Entomology (1970) and earned a Master degree (1974) in Geography and Anthropology (BALÉE, 2004).

In the 1970s, there was a fertile environment at some American Universities aiming at softening boundaries across the social and natural sciences and its disciplines. Academia was officially starting to open itself and taking serious consideration of non-Western worldviews while embracing interdisciplinary perspectives. While at Louisiana State Posey's interest in Anthropology grew under the influence of two mentors: the anthropologist William G. Haag, a fellow Kentuckian (PLENDERLEITH, 2004), and the social anthropologist Miles Richardson under whose tutelage Posey worked. According to Balée (2004), his strongest influence in Anthropology.

In 1977, under the supervision of Professor Michael D. Olien, Posey started to pursue his Ph.D. at the University of Georgia (POSEY, 1990b). He arrived in Brazil in the late 1970s, at the time when democratic forces were slowly pushing back the military dictatorship. During this time, basic human rights such as freedom of speech were oppressively denied from the population. For instance, press censorship played a key role in hiding the truth about physical torture, political and economic harassment towards anyone who was profiled as a dissident of the regime and/or criticizing the government. "Rebels" included outspoken journalist, artists, lawyers, scientists, intellectuals, trade-union representatives, political representatives, and businessmen. For the military, the Amazon region was a frontier to be economically and demographically occupied. To that aim many "development projects" were sponsored: from Pharaonic (e.g., the Transamazonian Road and bunches of hydroelectric dams) to microincentives to swarm of adventurers (for instance the *Serra Pelada* gold mining or Ludwigs's *Serra do Navio* manganese extracting project), regardless of environmental impacts and/or negative effects on indigenous and traditional peoples' livelihoods.

It was in this context, that Posey began conducting fieldwork among the Kayapó Indians of the Xingu Basin of Brazil (Pará State). His main goal was to collect data that would reveal local knowledge and understanding of insects. The idea of working with indigenous people in South America was suggested by the anthropologist Charles Wagley, at that time, head of the Center of Latin Studies at Columbia University. While Wagley specialized in Brazilian agriculture, Posey was interested in the way Brazilian indigenous agriculturalists dealt with insect predators. The Kayapó gained



Image 1: Posey, Elisabetsky, Bep to Poop and other indians at the audience of the I International Congress of Ethnobiology, 1988 (Belém do Pará, Brazil). (Elisabetsky's collection)

Posey's attention after he was informed of a "wasp dance", an initiation ritual performed by boys (DEWAR, 1995). As of 1979, he was awarded a PhD in anthropology, with his dissertation entitled "*Ethnoentomology of the Gorotire Kayapó of central Brazil*".

In 1982, Posey was offered by Prof. Warwick Kerr a faculty position with the Department of Biology, at the Federal University of Maranhão, Brazil. As this short biography will show, from that moment on, Posey began playing a major role in advancing the field of ethnobiology in Brazil. He was the founder of the first Ethnobiology laboratory in the country, a landmark for the development of interdisciplinary research in Brazil, and the starting point to the long-lasting Kayapó Project. The project (1982-1992) was later incorporated into the recently created Ethnobiology Program at the Museu Paraense Emílio Goeldi (MPEG) in Belém (Pará, Brazil), to where Posey moved in 1987.

The first International Congress of Ethnobiology, held in 1988 (July 19-22) in Belém was key to position Darrell as an international leading scholar. Serving as the coordinator of this important scientific meeting, attended by scientists and native peoples from 25 countries, Posey was committed to strongly promoting indigenous rights vis-à-vis the need to establish rigorous ethical standards for ethnobiology research worldwide. Symbolically setting the tone of the upcoming debates, the organization of the conference set up an indigenous house (named *oca* in Portuguese) at the Hilton Hotel's lobby where the meeting took place. Indigenous people's presence was massive during the conference, including the opening ceremony where Paulinho Paiakan., a young Kayapó leadership, was invited as keynote speaker along with a few CNPq officials¹ and government representatives. It soon became evident that the event would be a landmark in academia, where indigenous peoples played active and meaningful roles.

Paiakan denounced the Brazilian government "structural adjustment plans", which included flooding an area as large as New England, and vanishing several Kayapó and other Amerindian villages. As stated in the first chapter of the conference proceedings, "one common theme appeared and reappeared throughout the meeting: the richness and relevance of traditional knowledge and the global threat to native peoples and their cultures". He continued by saying "Amerindians are the only societies with the necessary knowledge, expertise, and tradition to prosper in the Amazon jungle. Amerindians not only appreciate what exists, but also understand ecological interrelations of the various components of the Amazonian ecosystem better than the modern ecologists understand. Indians perceive specific relationships which biologists are only now discovering to be accurate". By using an innovative approach to scientific meetings where ethnic groups were not spoken about but heard from themselves, as well as the tone of its opening ceremony, Posey brought about old questions into a new fashion. As it will become clearer, the development of these innovative approaches in science pushed him towards a political and public activism for indigenous rights, including intellectual property rights.

¹ Conselho Nacional de Desenvolvimento Científico e Tecnológico, one of the main governmental research funding agencies in Brazil

During this conference, Posey and colleagues wrote the mission statement of the International Society of Ethnobiology, founded during the conference. The document became known as the "Declaration of Belém". It included calls for the recognition of indigenous specialists as authorities to be consulted in programs that may affect their environment, human rights, including cultural and linguistic identity, intellectual property rights of native peoples, fair compensation of native peoples for their knowledge and biological resources and the need to establish ethical mandates for ethnobiology research and researchers². The document served as basis for the ethics guidelines for several scientific societies (e.g., Society for Economic Botany, International Society for Ethnopharmacology, etc), and guided indigenous activism and/or governmental legislation thereafter.

In 1992, Posey played a central role placing "indigenous rights perspective" in the international law arena and the negotiations that took place during the Biodiversity Convention agreement signed by more than 170 countries during the 1992, Rio Summit. He coordinated a major event named "The Earth Parliament", a vital opportunity for indigenous peoples to voice their plights and the relevance of their culture to a global audience.

Posey eventually left Brazil in 1993, largely because of the constant harassment associated with his political activities.³ He then became an associate fellow at the Linacre College, and research associate at the Oxford Forestry Institute, at the Oxford University (England). For him, it was far from a time, since most of his views on indigenous knowledge and rights clashed with the orthodox understandings of ethnobiology and cognitive sciences mainstream at Oxford. He actually thought that some peers were far more concerned with their own professional advancement than scientific innovation (ISE, 2006⁴).

At the Society for Ethnobiology, for which he was one of the founders and president, he also served as Executive Director of the "Global Coalition for Biological and Cultural Diversity". He coordinated the International Working Group to develop a Covenant on intellectual and cultural property for indigenous peoples (POSEY, 1994). In its cooperation with the "Oxford Centre for the Environment, Ethics & Society", Mansfield College, Oxford University, he put together "The Working Group on Traditional Resource Rights" (POSEY, 2004a, 2004b, 2004c). He was awarded the Sierra Club "Chico Mendes" award in 1989, and the UN "Global 500" award in 1993.

Posey died in Oxford on March 6, 2001, victim to the reoccurrence of a melanoma diagnosed a few years before. Perfectly aware that he was leaving on borrowed time, during his last years he kept working and travelling around the world to spread his ideas. In fact, he fell irrecoverably ill during a conference he had organized in Oxford. Curiously, despite being in England and English being his mother language, he would only speak Portuguese or Kayapó during his last few weeks under hospice care; though not facilitating communication with his caretakers, it is perhaps a reflection of his deepest connection with his life-long commitments⁵. His ashes were scattered by friends over his cherished small lake by a forest patch located at walking distance from his home located at the outskirts of Oxford.

Posey's family donated his collection of approximately 2,200 slides, 75 field notebooks and fieldwork journals, and 30 videos generated during his research and experiences in Brazil to the Pitt Rivers Museum at the University of Oxford (<https://www.prm.ox.ac.uk/manuscripts/poseypapers.html>). An ongoing project is organizing this collection with the following main purposes : (A) to catalogue, preserve and disseminate his legacy in digital format (B), and (B) to foster the creation of educational and artistic materials (websites, booklets, books, plays, videos, etc.) that enable indigenous peoples across Brazil (Kayapó and others), children and adults of any culture, to learn about the Kayapó knowledge. Three years after his death (2004), friends and the Society of Ethnobiology (ISE) created the "Darrell Posey Fellowship" to promote the intercultural understanding of peoples' complex and dynamic relationship with their environment. The fellowship is targeted to people who support indigenous peoples and local communities working to sustainably manage, to secure rights to, their environments and resources." (<http://www.dpfellowship.com>).

² The carta de Belém can be accessed here, (http://www.agem-ethnomedizin.de/download/www_Declaration_of_Belem.pdf).

³ For instance, unlike any other research colleague at the Goeldi Museum, after years conducting the Kayapó project, attending conferences, writing papers and planning his academic activities within the institutional guidelines, Posey was suddenly the only one required to report to the new research director his daily planning at the beginning of each week, to ask for authorization to leave the city at least one week in advance, have his office often called and his secretary to explain his whereabouts when/if he was not there, among other measures that restrain his liberty.

⁴ This information was webpage access in 2006 from the Society for Ethnobiology (ISE) webpage in 2006. Nevertheless, is no longer available.

⁵ Fan of a good prank since college and fraternity times, Posey managed to survive the first announcement of his own death: to everyone surprise he woke up after the feeding tube had been withdrawn and survived in a recovery home for some weeks, though never regaining normal cognitive functions.

Posey had a great sense of humor. In one of his obituary, the filmmaker Herbert Girardet wrote “I will always recall his ringing laughter, enjoying his own (very good) jokes, and those of others⁶”. Being a cuisine lover (a creative cook himself) his many friends and colleagues are left with good memories of enjoyable lunches and dinners (and some with the memorable times in Gorotire). He was particularly fond of travelling by car, a way to explore places by meeting locals and experimenting local foods (referred to as “hunting and gathering expeditions”), often-singing music from various countries (especially from Ireland with kinky lyrics). Even for those who disliked or disagree with his ideas, or have engaged with bitter disagreement or fights would eventually recognize he could be as charming as it comes.

THE KAYAPÓ PROJECT

Posey used to say that it was during his PhD fieldwork that he realized the complexity and depth of Kayapó's knowledge about their environment (personal communication to Elisabetsky). No researcher alone could document such treasure, let alone analyze and deal with knowledge that cuts across so many academic disciplines. He strongly believed the Kayapó's knowledge was “an integrated system of beliefs and practices” (POSEY, 2004a:5), which could help solving many of the Amazon's socioenvironmental problems. After all, he argued, these people have coped with challenging and changing environments in a non-destructive way, for centuries, while culturally resisting the systematic and overwhelming attacks stemming from “development policies” for decades (POSEY, 1982). Posey insisted that Kayapó knowledge was to be taken seriously, within policy and academic circles, in Brazil and elsewhere.

Under Posey's coordination, the Kayapó Project was conceived from its onset (1982) as an international, inter and multi-disciplinary ethnobiological research effort, where scientists and technicians would document Kayapó knowledge on agriculture, crops domestication, soil classification and use, nutrients recycling, reforestation practices, natural fertilizers and pesticides, animal behavior, medicinal plants, wild life management and astronomy (OLIVEIRA and HAMÚ, 1992). A decade later, the project had produced 16 scientific reports (in the form of papers at scientific journal, book chapters or extended reports in congresses annals), 9 videos and 2 major exhibitions (held at the Museu Paraense Emílio Goeldi [Belém, PA] and Paço Imperial [Rio de Janeiro, RJ]) (Posey's fax to EE, Feb 13, 1994). By suggestion of Roy Ellen and Laura Rival (University of Kent at Canterbury, UK), his major contributions were compiled in two volumes edited by Kristina Plenderleith: “Indigenous knowledge and Ethics” (POSEY, 2004c) and “Kayapó Ethnoecology and Culture” (POSEY, 2004a). The volume devoted to Ethnoecology, is comprised of a selection of papers that Posey felt would best present the important features of his work in Brazil. These volumes refer to 35 papers published after 1983 resulting directly from the Kayapó project.



Image 2: (from left to right) From left to right Darrell Posey, Eugene Parker, Elaine Elisabetsky, Kanhôk, Anthony Anderson, José Uté, Carlos Ferreira; (3): Bep To Poop

⁶ Accessed in 2018, at <https://www.theguardian.com/news/2001/mar/30/guardianobituaries>.



Picture 4 (left) Elaine Elisabetsky and Kwyrà-kà; **5** (right) Paulinho Paiakan

The Kayapó project collaborators included Dr. Alan Jensen (linguistic and ethno-ornitology, Instituto Verão de Linguística, Belém, Brazil), Dra. Anne Gély (ethnoagronomy and ethnobotany, Université de Montpellier, France), Dr. Anthony B. Anderson (ethnobotany and ethnoecology, Ford Foundation and MPEG/CNPq, Brazil), Dra. Clarice Novaes da Mota (ethnobotany, UFRJ, Brazil), Dr. David C. Oren (ethno-ornitology, MPEG/CNPq, Brazil), Dra. Elaine Elisabetsky (ethnopharmacology, UFPA, Brazil), Dr. Gerhard Gottsberger (ethbotany, German Botany Institute, Germany), Dra. Isabel Murphy (linguistic and anthropology, University of Pittsburgh, USA); Dr. João M. F. Camargo (ethno-apiculture, USP-Ribeirão Preto, Brazil), Dr. Kent H. Redford (ethno-zoology, University of Florida, USA), Dr. Márcio D'Olne Campos (ethno-astronomy, UNICAMP, Brazil), Dr. Miguel Pretere Jr. (ethno-ictiology, UNICAMP, Brazil), Dr. Susana Hecht (ethno-pedology, University of California –LA, USA), Dr. Warwick E. Kerr (ethno- agronomy, UFUb, Brazil), Dr. William L. Overal (ethno-entomology, MPEG/CNPq, Brazil), Eugene (Sandy) Parker (Univesity of Maryland an Baltimore, USA). Key technicians included Carlos Ferreira (botany MPEG/CNPq, Brazil), Manoel Santa Brígida (zoology, MPEG/CNPq, Brazil), Sandra M. Machado (education, INEA, Belém, Brazil), Wagner Alahadef (arts, Laboratório de Expressão Artística, São Luiz, Brazil). Key informants included Bep to Poop, Kwyrà-kà e Paulinho Paiakan (who for some period overlapping with the project acted as the Funai's chief of post in Gorotire).

Posey himself invited most of the researchers and collaborators. In the making of the best ethnobiology team possible, he put great efforts in fostering an international network of ethno-oriented scholars by inviting international and national researchers.⁷ Besides the usual technical and academic difficulties, Darrell had often to deal with conflicts among researchers, or between researchers and the Gorotire Kayapó, missionaries and/or FUNAI personnel. It is expected that people from such distinct cultures may clash with one another; moreover, cultural shock may trigger awkward behaviors and/or set off nervous breakdowns. In addition, ecologically focused researchers may lack key training in social sciences (conceptual and methodological) a contributing factor to such conflicts but also fuel to the lively and enriching science discussions during fieldwork.

⁷ An example: In 1983, Willian (Bill) Overall from the Museo Emilio Goeldi heard I was working with medicinal plants and paid a visit at my office at the Federal University of Pará (UFPA). He wanted to tell me of a friend looking for an ethnopharmacologist for an interdisciplinary project among the Kayapó of Southern Pará. Would I be interested? I had just published an ethnopharmacology study on the Guajajara Indians (Aldeia Olho D'Água, Maranhão) medical system and their mostly commonly used medicinal plants. I asked Bill to send a copy to his friend, and we could proceed from there. A few months later, during the *Sociedade Brasileira para o Progresso da Ciência* Annual Meeting held at the UFPA campus, Bill introduced me to his friend Darrell Posey: the moment we shook hands a torrential rain started and Bill ran off. Sheltered by the tarp from a beer-selling tent we chatted for hours. Delighted with the chat, the compatible humor, the ideas about traditional knowledge, I immediately realized what a great opportunity that was and gladly joined the Kayapó project. That encounter also marks the beginning of one of mine most meaningful friendships, unfortunately cut too short by Posey's premature death.

Funding the project was always a major challenge and a constant source of concern. Its size, international and interdisciplinary nature added layers of complexity. Ethnobiology was (and still is) not officially recognized as a scientific field by Brazilian funding agencies⁸. Ethnobiology as a discipline was not known in Brazil and was suspiciously received by both anthropologists and biologists. Research questions, themes and methodology adopted in the Kayapó project could not easily fit in neither anthropology nor biology. The physicist and Kayapó project ethnoastronomer Dr. Márcio D'Olne Campos (UNICAMP) humorously calls attention to the limitation and inadequacy of the “exact and human sciences” division (in English “hard and soft sciences”) by referring to it as the “inexact and inhuman sciences”.



Image 6: Darrell Posey, Bep to Poop and Elaine Elisabetsky

According to his own account (POSEY, 1990a, 1990d), his initial grant came from the Wenner-Green Foundation for Anthropological Research, while he was a PhD student. After this period, the project was awarded a grant for the first two years from the Brazilian Council for Scientific and Technological Development (CNPq). In 1984, the project received additional grants from multiple sources, such as WWF-US (general ethnobiological investigation), WWF-International (research and education), the National Geographic society (mapping and ethno-ecological zone definition), NSF (interpretation of satellite images), and the Ford Foundation Brazil (ethnobiological training) (POSEY, 1990a).



Image 7: The Project Kayapó hut. From left to right: Bill Overal, Kent Redford, Darrell Posey, Kwyrà-kà (and grandson) and Márcio D'Olne Campos.

Though over the years Posey visited several villages, the Kayapó project was carried out in Gorotire, one of the seven Kayapó villages situated within the million hectare Indian reserve in the State of Pará. To reach Gorotire (100km west from Redenção, 7°51'S, 51°08'W) was not an ordinary trip. During the project's first years regular flights were only available from Belém to Conceição do Araguaia; from there small planes needed to be arranged to fly to the village. Flights eventually became available to Redenção do Pará, somewhat closer to the village, allowing for faster and cheaper private flights. Usually, the small plane would carry the pilot, Posey, invited researcher(s) or technician, fieldwork gear, nonperishable food, and requests from the Kayapó. Such apparently trivial activities were not always easy. How would researchers justify funding specific groceries and/or items such as beads, nylon wires, woven textile, deodorants, chocolate bars, machetes, fishing hooks, to name a few of the items community members often requested? How to justify the different prices charged by distinct pilots for comparable distances?⁹ How could project managers justify days spent in the city while waiting for available flights? Some of these issues were not easily solved given past

⁸ Up to this day, of the several ethnosciences only ethnopharmacology is listed as sub category of pharmacology at CNPq classification (used for projects, grants, fellowships, etc).

⁹ Prices were basically dictated by demand, often heavily influenced by gold miners activities. Attempts to avoid surprises by negotiating in advance were more often than not completely disregarded by pilots, many times doubling as airplane and flight company owners.

(and current) institutional accounting rules, especially for unforeseen and/or out of control situations.¹⁰

Having initiated fieldwork with invited researchers, it became clear that the house of the missionaries (Unevangelized Field Missions) where Posey used to stay when in the village was no longer adequate as a project basis at Gorotire. A rule Posey imposed for the Kayapó project was that every new team member would speak in the warrior's house to explain what his/her research was all about. After having understood the goals and needs of the project, the Gorotire Kayapó and its two chiefs (Kanhôk and Toto-í) decided to provide a hut by the Fresco river as the project's permanent fieldwork facility.

This house, near the Gorotire's port, provided a privileged viewpoint of the river, where the village daily activities (such as the arrival of produce from gardens and hunting trips, children's play, men, children and women bathing, etc) could be easily spotted.¹¹ The house had a small balcony in the front, a small room where cooking and eating took place, a larger room for day work and rest/sleep (in hammocks) at night. It also had a porch in the back, which allowed for more privacy, therefore, a place where interviews often took place. From the house, one could also witness and enjoy beautiful sunsets, storms and lightning storms.

With the closure of the Ethnobiology Program at the Goeldi Museum, the Kayapó project was transferred to the Instituto de Etnobiologia da Amazonia (INEA), an NGO funded by Posey in 1988. At INEA, in Posey's own words "a pioneering educational program is underway to "return" to the Kayapó the results of its [the project] research." (POSEY, 1992:20). Among the Kayapó project goals were the production of schoolbooks in Kayapó to be adopted at Kayapó schools, and in Portuguese to be used in schools around Pará. Thereby children would be exposed to the idea that indigenous peoples possess sophisticated knowledge, in opposition to the often-ingrained notion that these people are "salvage, backward and ignorant"¹². Even though some schoolbooks were prepared and tested in schools, the educational project was interrupted before completion.

Despite a sizable number of publications, the legal charges against Posey, Paulinho Paiakan and Kube-í inevitably affected the project (see below). A long desired integrated analysis of the ethnobiological data collected over the years at the Kayapó project was never fully implemented. Posey's vision was to have the project team immersed in Kayapó data analysis for 2-4 weeks, preferably at the Lake Cuomo in Italy (where writes often retreat to work). Posey's situation at the Goeldi Museum was increasingly difficult to resist, as mockery and envy escalated against him. Understandably tired of it all, he decided to apply for a research fellowship in Germany for a year, planning to come back after things chilled out. Regardless of wishful thinking, Darrell never returned to work in Brazil. After a year in Germany, he was offered a position at Oxford University, and



Image 8: Posey interviewing Bep to Poop in the back porch of the Kayapó project hut; **(9):** Posey photographing Bep To Poop and excicatas in the larger room of the Kayapó project hut

¹⁰ Despite all the costs involved in getting researchers to Gorotire, at the end of the day it was up for the Kayapó to be available for the project. When I met Bep To Poop for the first time I was deeply impressed with him, and his hut by the edge of the village, the forest behind him as his "garden". We agreed upon a collecting trip the following day. Early next morning, prepared for a whole day excursion, Posey, Anthony Anderson, Carlos and I were at his doorstep. We set off and had walked on the trail for maybe 15 min when Bep To Poop spotted a plant, cut it with his machete, sat down and started to work its stem. After listening to Posey and Bep talking in Kayapó for a few minutes, we were informed that the plant was harvested because Bep decided to make a "beautiful comb" as a gift to me; as a result he could no longer work with us that day. Despite Posey's arguments that was it. At another time, we flew into the village to find out that a big party was under preparation – nobody in Gorotire was up for working with *kube* (not Kayapó, but usually referring to white men) in whatever capacity. We saved the first days of that trip by working with guests that arrived earlier, checking for information consistency among members from different villages.

¹¹ Posey absolutely loved a picture he took during the Project hut inauguration speech: a few dozen Kayapós (including village chiefs) all with their backs to Posey, their attention drifted from his speech to a numerous groups of alligators popped up in the river.

¹² As native Indians are described in mainstream Brazilian schoolbooks (including those used in schools in Gorotire)

eventually gave up his Brazilian employment. By leaving Brazil (not exactly by choice), a tenured position in academia, a house in São Luis (Maranhão State) and the institution he had just founded (INEA, Pará State) placed a heavy burden, both financially and emotionally, on his life.

MAIN CONTRIBUTIONS TO ETHNOBIOLOGY AND INDIGENOUS RIGHTS

A close assessment of Posey's academic and advocacy work shows that at least a decade before the beginning of the current wave of socioenvironmental concern, markedly starting with the Rio Summit 1992; he already expressed tremendous concerns with the fate of both the forest and its peoples. The consequences of the deforestation led by shifts in the land use/tenure patterns in the Amazon, soon became his major source of social awareness and concern. By carefully analyzing his writings, one would notice that he was pursuing what later came to be generally known as "problem-oriented research", within the broad field of Ecological Anthropology (BRONDÍZIO et. al., 2017). In other words, his academic work was driven by a strong interest in bringing people and institutions together while creating a common base aimed at informing the formulation of policies, and new strategies of resource utilization coherent with indigenous ecological models (POSEY, 1984).

For him, the devastation of native peoples and the ecological systems that they had known, conserved, and intentionally managed for millennia, required new and drastic steps to redirect world priorities. In order to achieve that, NGOs, professional organizations, local and international governments, should work together to reverse the ongoing loss of the planet's cultural heritage, ecological and biological functioning and diversity. In this regard, Posey can be seen as one of the major and pioneering advocates for indigenous rights, and very likely, the leading figure on these matters at that time, certainly so in the Brazilian Amazonian context. He argued that whatever the debate about indigenous rights would be, "all the steps must be led by indigenous people themselves" (POSEY, 1994). Accordingly, it was fundamental that Western legal and conceptual framework, which tends to conceive nature, cultural knowledge and rights as goods and commodities should not hijack intellectual property rights, indigenous and traditional ecological knowledge (POSEY, 1996; POSEY, 1999). He recalled that both scientists and scientific institutions had become heavily involved – actively or passively – with the private sector. Since corporations increasingly funded research, new questions on data control and ownership as well as benefits from research had to be clearly addressed. He thought that the "new science" of dialog could not be developed out of ethnoecology, otherwise, he wondered where would it come from.

For better or worse such politically charged declarations marked both Darrell's academic and activist trajectory and position in the history of ethnobiology and ethnoecology. In 1987, Posey went to Washington, DC, along with Paulinho Paiakã and Kube-í, two Kayapó leaders. There he acted only as their interpreter when they managed to report to the World Bank officials the real and untold impact hydroelectric dams in the Xingu River region would cause to indigenous peoples and their environment. They questioned the bank's funding for such projects (POSEY, 1990b, 1990c). Therefore, he and the two indian leaders suffered criminal charges by the Brazilian government. It was alleged that Posey and the two Kayapós indians were violating the "lei dos estrangeiros" ("foreigners law"), which forbids foreigners, even those with permanent residence in Brazil, to get involved with political affairs, especially if potentially damage or denigrate the county's image abroad.



Image 10: Indigenous people at the Hilton Hotel lobby during the First International Congress of ethnobiology (I ICE), Belém, 1988



Image 11: Photos from the I ICE opening at the Teatro São Pedro (left) and the oca installed at the Hilton Hotel, Belém, 1988.

Darrell strongly believed he could not simply stand and watch the Kayapó's battle to protect their rainforest and do nothing. It is worth clarifying that Posey did not leave Brazil with the Kayapó planning to go to Washington: he took them to a Congress in Miami, loyal to the ethnobiology ethics to make space for indigenous peoples' voices rather than speak on their behalf. After hearing Payakan's speech in Miami, some North American environmental activists with good connections in DC invited them to Washington, and arranged for the hearing with the World Bank. Posey went along, acted as translator, but it was not, as the Brazilian authorities claimed, his plan all along.

Efforts to have indigenous peoples speaking for themselves (in itself an important and innovative approach) in different venues was one of Posey's priority, and became mainstream at the International Society of Ethnobiology. Early on during the project, the Gorotire's first chief Kanhôk wanted to meet with "Posey's village chief" and Posey arranged Kanhôk's visit to the American ambassador in Brasília. He rejoiced recalling how proud and noble Kanhôk looked at the American embassy (as expected from a real chief), while the ambassador seemed embarrassed and at a loss. Posey brought the Gorotire Kayapó Bep To Poop, Kanhôk and Kwyrà Kà to São Paulo and indigenous people presence was massive at the 1988 1st International Congress of Ethnobiology in Belém.

Despite all Posey's political and academic contributions, he has been criticized for being emotionally driven, and at times, helping to promote the image of indigenous people in the Amazon as an "ecologically sophisticated", and "pure" native population. That is, it is argued that he romanticized the notion of human-nature equilibrium, which he himself rarely reviewed and criticized (STEARMAN, 1994). To others, however, he only truly believed in the indigenous ecological knowledge sophistication. While being deeply aware of the fact that Indians (individuals or groups) are as complex as other human group (POSEY, 2002a, 2002b), Posey contended that indigenous groups deserved privileged treatment, given the huge asymmetry of political, financial and other sorts of power in comparison to dominant cultures. Darrell believed that those with the power to "call the shots" and eventually change development policies in the Amazon would only listen to economic benefits arguments. Thus, it was crucial to demonstrate that a standing forest could be a better economic deal than the forest destroyed to give space to cattle or monocultures. However, he never acted to halt people's development towards a modernized world, repeatedly defending the idea that

Amerindians were as entitled to modernity as any human group. He nevertheless wanted to fight the consequences of an abrupt and chaotic transition, including loss of cultural and biological diversity, and environmental ecological knowledge. Ultimately, what he fought for his entire academic life was fair compensation for indigenous people for their knowledge (POSEY, 1990; POSEY, 1994; POSEY, 1999) and their right to pursue their own path of development.

Darrell Posey claimed that Ethnobiology for its very nature seemed to be uniquely placed to lead the way to a new understanding: "to bridge disciplines and cultures through a practical focus on the implications and applications of traditional knowledge for all humanity" (POSEY, 1990). As he put it, ethnobiology is not only a methodology, but also a philosophy. Its principals consist bridging the understandings of the world by different cultures (POSEY, 1990). Another of his major concerns was one of method, which he believed ethnobiology was meant to help overcoming: the existing division between the Western scientific "arrogance" and the "seemingly naïve" indigenous knowledge. He found it very difficult to find Western scientists who were "of a personal ilk that allows them to shed the mantle of Western scientific superiority to learn from the "primitives" (POSEY, 1984).

As shown throughout this short biography, his contribution to Ethnobiology largely drawn from his first-hand and long-lasting fieldwork with the Kayapó. It is also hardly separated from his personal commitment to valuing, appreciating and respecting the Kayapó, indigenous cultures and the Amazon as a whole. Although studying in detail the ethnoecological classification of the forest types by the Kayapó, he avoided being trapped into any specific mainstream scientific paradigms at that time (Posey, 1986). He developed a methodological model to integrate linguistic categories (nomenclatural) with its symbolic value. For him, it would help to deal only with named categories by indigenous people, by ignoring the non-spoken or unrevealed ones (POSEY, 1986). In other words, such a method should not be applied to a complete investigation of a cultural system, but may give way to a generative methodology based on indigenous linguistically revealed categories, rather than underlying structural rules. Posey believed that this methodology would overcome part of the inherent bias embodied in researcher-informant oriented ethnobiological projects. He argued that because researchers go to field work with pre conceived categories and hypotheses, plenty of data is generated to fulfill the Western sciences expectations, but are bound to obtain "answers" that rarely reflect the logic and reality of the culture under analysis. This view illustrates Posey's fundamental innovation in Ethnobiology, a major change in the subject-object relationship: by treating his informants not as objects but as agents, he changes the conventional asymmetrical (subject-object) relationship in anthropological studies into a symmetrical (subject-subject) relationship. The hybrid researcher-activist conspires for this change.

One of the recurrent key-concept in his analyses of the Kayapó knowledge was the distinction between "emic" and "etic"¹³. "Emic" reflects native cognitive and linguistic categories, whereas "etic" interpretations are those developed by the researcher for the purposes of analysis (Posey, 2004a: 56). However, as he pointed out, "it would be nice if such distinctions clearly existed" (Posey, 1990), further stating, "after 12 years of research among the Kayapós, I learned that the dialogue between the researcher and the informant obscures these categories", perhaps just unavoidable given that individuals from different cultures think and speak with distinct cognitive "realities". There is in fact a basic epistemological barrier: it is impossible to know what the other knows, to see what the other sees. Methodologies can therefore, only lead to approximations. Moreover, as Toledo (TOLEDO, 1992) points out in the case of ethnosciences, it depends on dialogues between an informant with his/her biases about its own culture in dialogue with the researcher with his/her own biases about one's own culture.

In collaboration with colleagues from the Goeldi Museum, such as Anthony Anderson and Willian Baleé, Posey developed what became one of the most important paradigm shifts concerning the ideas of forest management practices among indigenous people (ANDERSON and POSEY, 1989). Before them, the mainstream view was taken for granted: indigenous people in Brazil had preserved the Amazon as a "pristine" forest. What they showed, instead, was that the Kayapó and other indigenous groups left profound and long lasting changes in the landscape resulting for extensive use

¹³ Emic: relating to or denoting an approach to the study or description of a particular language or culture in terms of its internal elements and their functioning rather than in terms of any existing external scheme; Etic: relating to or denoting an approach to the study or description of a particular language or culture that is general, nonstructural, and objective in its perspective.

of resources (BELÉE, 1999; POSEY 2004a, 2004b). Aspects of this new indigenous management perspective of the Amazonian forest were controversial (see Eugene Parker [1992 and 1993] and Allyn MacLean Stearman [1994]). Perhaps his most harsh critic was the American anthropologist Terence Turner, from the University of Chicago, who worked with the Kayapó for 30 years. He said that “his [Posey] exercises in ethnobotanical and ethnoentomological science are science fiction”; Turner, 1995, p.123).

In 1989 (POSEY, 1989) he argues that indigenous groups, such as the Kayapó of central Brazil, had actually increased biological diversity in managed areas such as trail sides, gardens, forest openings, and rock outcroppings. In the same article he suggested that many tropical ecosystems usually considered as “natural” may have been profoundly altered by indigenous in the past. As Baleé (BALEÉ, 1989) puts it, many “natural” ecological zones and even large portions of entire ecosystems have been managed, which defies the myth of pristine environments. Therefore, stating that Amerindians adapt to their environment and respond to the environmental limitations is fallacious. Instead, they culturally manage their “natural” environment, and its resources such as fish, plants, soil, and game. Indigenous would be better described as resource managers than foragers. It was estimated that at least 11.8% of *terra firme* in the Amazon was anthropogenic (human-made forest). Quite aware of the consequences of ideas and research findings, Posey made efforts to publicize his major research findings in Portuguese, such as in the “Ciência Hoje”, a well-known and popular Brazilian science magazine in the line of Scientific American.

Finally, Dr. Darrel Posey authored or co-authored more than 150 scientific articles and published 10 books. His last, “Cultural and Spiritual Values of Biodiversity” was edited for the UN Environment Programme (UNEP, 1999). Praised by eminent researchers in his field as Sir Ghilleen Prance (1991), Posey's outstanding contributions are relevant for those who want to pursue an academic career in Ethnobiology or correlated fields such as Human Ecology, Ecological Anthropology, and Ecological History. We hope that this brief account of his journey and achievements will be useful to reveal his role in the modern history of Ethnobiology. We like to believe that the work carried out by Darrell Addison Posey will continue to influence new generations of socioecological oriented anthropologist and ethnobiologists throughout the world.

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