

# Cell lines and commodities: the Hagahai patent case

In March 1995, the United States Government issued a patent on a human cell line for an indigenous Hagahai man from the rainforests of Papua New Guinea. Critics saw this as a 'new and dangerous' era in intellectual property while even defenders conceded there are serious dilemmas embracing ethics, the law and the media.

By DAVID ROBIE

*GOROKA, Papua New Guinea (AP) — He's out there somewhere in the wild gorges of the Yuat River, hunting pig, harvesting yam, a young tribesman whose heart belongs to the jungle — but whose blood belongs to the United States Government.*

Or so says Patent No 5,397,696.

The story of the Hagahai tribesman, of how the United States patented the blood cells of one of Earth's most primitive citizens, could only be a tale from the bio-engineered Nineties, a time when the prehistoric can still come face to face with the futuristic, and the technology of tomorrow often outwits the society of today. **CHARLES J. HANLEY** (1996a)

From the time the first European vessels reached the shores of continents long inhabited by indigenous people, European colonists adopted a *terra nullius*<sup>1</sup> world view. Only very recently has the world begun to concede the inaccuracy of and racism behind this view. There is an almost desperate attempt by the descendants of colonisers to consign the *terra nullius* perspective to history, but recent developments in the area of human genetic research, engineering and human gene patents brings back haunting and painful memories to indigenous peoples of a legacy of European colonial domination. **AROHA TE PAREAKE MEAD** (1996a)

ON 14 March 1995, the United States Government issued a patent on a human cell line, or culture, of a foreigner — an indigenous man from a remote rainforest area of Papua New Guinea. While global moves have been under way to protect



the knowledge and resources of indigenous people, the US National Institutes of Health (NIH) were issued patent No 5,397,696 by the Patent and Trademark Office (PTO), the first time that an indigenous person's cells have been patented. The act, described by some critics as a 'new and outrageous' era in intellectual property, has unleashed a major controversy embracing ethics, the law and the media (RAFI, 1996) over human genetic material. The Hagahai man was one out of a group of 24 whose cell lines were sampled in 1989, and in a similar case two Solomon Islanders were sampled in 1990 (Robie, 1995).

The Hagahai, a tribe numbering less than 300 people, live in a remote part of the Western Schrader Mountains in Madang Province. In 1983, due to medical problems, the tribespeople initiated contact with the outside world by visiting Baptist missionaries who lived some distance away. The following year, they had their first sustained contact with outsiders when an evangelist set up camp at the nearby settlement of Yilu (Jenkins, 1987:413). Accompanying a Papua New Guinean Government census team the same year was an American medical anthropologist, Dr Carol Jenkins, who was affiliated with the PNG Institute of Medical Research (IMR). The team found the Hagahai to be suffering from endemic diseases with a low birth rate and high disease mortality (*Los Angeles Times*, 1987). The following year Jenkins began a decade-long research program funded by the US National Geographic Society.

Following the discovery of the Hagahai patent six months after it was registered, the Canadian-based non-government organisation Rural Advancement Foundation International (RAFI) distributed an international press release on 4 October 1995, claiming the Hagahai man had 'ceased to own his genetic material' (RAFI, 1995). Pat Mooney, executive director of RAFI, was quoted as saying: 'This patent is another major step down the road to commodification of life. In the days of colonialism, researchers went after indigenous people's resources and studied their social organisations and customs. But now, in biocolonial times, they are going after the people themselves' (*Ibid*).

RAFI and other NGOs argue that the World Health Organisation (WHO) should establish internationally-accepted medical ethics protocols covering the commercialisation or patenting of genetic material obtained from human beings (RAFI, 1996:1). No such agreed ethical code exists at present. RAFI also believes the the Convention on Biological Diversity (CBD) should 'come to grips with its legal obligation' to conserve and protect human diversity and to establish binding procedures for the international exchange of human genetic resources. Finally, RAFI argues that it is concerned over the interest of US Army and Navy researchers in HTLV-infected human cell lines from around the world with its implications for biological weapons research.

But some leading scientists with links to the research, such as Temple



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University anthropologist Dr Jonathan Friedlaender and law professor and ethicist Dr Henry Greely, have dismissed the controversy over the Hagahai patent as a 'tempest in a teapot' (Friedlaender, 1995). Former director of Pacific anthropology at the National Science Foundation, Friedlaender says the campaign 'reflects on the widespread distrust of the scientific technological enterprise and on the willingness of many to believe the worst of people with scientific knowledge' (Taubes, 1995).

The issue has also involved allegations of harassment against the key scientist involved, Dr Carol Jenkins, initially by at least one newspaper in Papua New Guinea which eventually led to her seizure off an aircraft in Port Moresby by Foreign Affairs officials on her way to a conference abroad (Robie, 1996; Dorney, 1996). At least two scientists have accused the newspaper, *The National*, of waging a vindictive campaign against the PNG Institute of Medical Research in Goroka, the capital of Eastern Highlands province. Jenkins is one of the people named on the patent.

Although the United States Government moved to register the patent in 19 other countries — including Australia and New Zealand — under the international Patent Cooperation Treaty, the controversy dogged its efforts. Finally, the US retreated in late 1996 by ambiguously offering to abandon its rights in a decision welcomed by some critics as 'a step back from the aggressive patenting of life forms' (*The National*, 1996a)

### **The legal, ethical and moral issues:**

#### *The critical analysis:*

Human genetic diversity (especially that of isolated indigenous communities) is a matter of increasing scientific, commercial and military interest. The flow of human genetic resources among military and civilian researchers across international borders is 'unmonitored and unrestricted' (RAFI, 1996) despite its value and significance.

RAFI argues that the events surrounding the US Government's patent of a Hagahai man's cell line and intellectual property claims on citizens of the Solomon Islands show 'critical shortfalls in medical ethics, human rights provisions, and intergovernmental protocols with substantial economic and political implications' (*Ibid*). As discussed earlier, the NGO says the World Health Organisation should establish internationally accepted ethics protocols covering the commercialisation or patenting of genetic material obtained from human beings.

Patented gene sequences and cell lines, stresses RAFI, generate enormous profits for the life industry: 'A single sequence can be worth US\$1.5 billion a year, and more than a thousand patents on DNA sequences have been issued to



over 300 groups' (Thomas, 1996). While fewer cell lines have been patented, says RAFI, they are potentially equally valuable. Rights to asthma treatments derived from research on isolated populations' DNA have sold for US\$70 million (Shrine, 1995), while academic researchers have received 'gifts' from industry for more than US\$12 million to further their collection of isolated peoples' tissues (RAFI, 1996:9).

Many indigenous peoples argue Western science 'goes to great lengths to dehumanise the humanness, or life force, of human genes — hence terms such as *specimens*, *materials*, *properties* and *collections* are adopted as a means to ignore the essence of life contained within. It is contrary to indigenous tradition to "objectify" a gene or human organs as these are living and sacred' (Mead, 1996).

### *The scientific defence:*

Scientists and officials defending the Hagahai patent and the Human Genome Diversity Project (HGDP) say the critics are spreading misinformation, confusion and distrust. They argue that the Hagahai have a clear understanding of the concept of ownership and the research project only proceeded after the tribespeople's approval was given. They also say the likelihood of any commercial benefit from the discovery is 'very slight' (Alpers, 1996). They insist the Hagahai patent has nothing to do with the HGDP.

The HGDP differs from the better known Human Genome Project, the huge endeavour that regularly makes headlines by finding links between diseases and genes: 'those inherited bits of DNA in our cells whose chemical code determine each body's characteristics' (Hanley, 1996b). One by one, 100,000 or so genes, collectively known as the human genome, are being blueprinted by the US\$200 million-a-year HGP. But everyone's genome is minutely different from everyone else's, so scientists are developing only a composite of broadly shared DNA, using samples from a handful of North Americans and Europeans.

The Diversity Project, on the other hand, would focus on the minute differences and reach out to every corner of the globe. The plan, conceived by international geneticists, led by Stanford University's Luigi Luca Cavalli-Sforza, would, say its defenders, coordinate independent gene-sampling projects already under way. According to its organisers, the project would take at least five years to collect blood or other DNA samples from perhaps 500 ethnic groups, with a focus on isolated populations.

Geneticists hope to answer a key question of anthropology: Did modern humankind evolve in Africa and then migrate, or did it evolve on other continents, too? It is also hoped to discover clues to disease susceptibility or immunity (*Ibid*).



*The Hagahai, or Melanesian, variant:*

According to writer Gary Taubes in *Science* magazine (1995), Papua New Guinea's Institute of Medical Research seems an 'unlikely target for such distrust'. There is indeed a patent, concedes Taubes, but not for a human. He describes how after a decade of research work with the Hagahai tribe, trying to identify and treat diseases that are reducing the small group to 'vanishing point', medical anthropologist Carol Jenkins and her IMR colleagues suddenly found themselves being accused of stealing Hagahai genes. The initial accusations came through a Papua New Guinean Foreign Affairs official, Dominic Sengi, who had formerly been a journalist and took to this affair with great zeal after seeing the 1995 UK Channel Four television documentary *The Gene Hunters*.<sup>2</sup> In a front-page story banner headlined, BATTLE OVER BLOOD, Sengi reported:

The blood of the recently discovered Hagahai people of Madang Province is most likely to be the subject of an International Court of Justice hearing in The Hague, Netherlands.

International lobbying has begun to have the Papua New Guinea Government support the case which will challenge the United States' patent laws and ethics in medical research...

RAFI is arguing that the patent applications amount to 'biopiracy ... that the patent represented the sort of profiteering from the biological inheritance of indigenous people that could become commonplace ...' (Sengi, 1995)

Then came the RAFI attack on 4 October 1995:

INDIGENOUS PERSON FROM PAPUA NEW GUINEA CLAIMED IN US GOVERNMENT PATENT, blared an electronic press release, distributed around the world on the Internet. The press release also made disquieting allusions to scientific 'vampires'. Within the week, the chorus was taken up by local and international press. IS NOTHING SACRED? asked one headline, protesting the patent as a theft of human genetic material. Jenkins and her colleagues have been weathering a small storm ever since.

Researchers had patented a virus-infected cell line from Hagahai blood and had actually agreed to give the Hagahai half the patent royalties. The accusations and press release came from a small Canadian-based group known as [RAFI] which says it is dedicated to the socially responsible development of 'technologies useful to rural societies'. By distributing the release via the Internet — a medium prized by scientists for its ability to disseminate information, but one proving equally adept at spreading misinformation — RAFI ensured a wide and rapid airing. Consequences to date have been of the nuisance variety, but what is disturbing about the episode is that the charges have found a receptive



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**Four youths get 16 years each**

The National Court in Lae has jailed four youths for 16 years each for the brutal murder of a University of Technology student last August after a violent brawl.

Page 4

**Keating scotches poll speculation**

Assessment Prime Minister Paul Keating yesterday scotched speculation that a federal election could be triggered following an embarrassing internal polling results.

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**OJ trial: Closing arguments begin**

The chief prosecutor in the OJ Simpson trial delivered perjury witness testimony as a ruse and said an "ocean of evidence" pointed to Simpson's guilt.

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**Kumudu loses 14-0 to French floater**

Dropped into and slipped play by the Papua New Guinea Kumudu resulted in a 14-0 loss against the French floaters in the first rugby league Test encounter.

Sport Page

# Battle over blood

## Hagahai 'patenting' case faces World Court

By DOMING BENOZIO and MICHAEL BOLONGIO  
PORT MORESBY: The blood of the recently discovered Hagahai people of Madang Province is most likely to be the subject of an international court of justice hearing in The Hague, Netherlands.

International lobbying has begun to have the PNG Government support the case which will challenge the United States' patent over and others in medical research.

The case is set to involve the State-funded Medical Research Institute in Goroka and the Solomon Islands governments as plaintiffs and at least 15 US-based pharmaceutical and specialised medical research laboratories as defendants.



Ms Jean Christie

Ms Christie is currently in the Solomon Islands to help Hagaras prepare its case. She will visit Port Moresby next week to hold talks with Government officials and explain that it is in PNG's interest to make a joint application for a licensing patenting human biological materials.

Lobbying to seek PNG and Solomon Islands' support started to earnest this week with the arrival in the region of Ralf's director for international liaison, Ms Jean Christie.

Ms Christie said the case will be strengthened in November when governments, international human rights groups, and NGOs gather for the World Biotechnology Convention in Jakarta, Indonesia, to discuss intellectual property rights. PNG is a signatory to this convention.

Ralf believes that the World Trade Organisation does not guarantee protection of human subjects from bio-medical research and urges governments to sit in the efforts to seek the opinion of the World Court on the matter.

The Solomon Islands appears to have never prepared its challenge although the PNG and the Solomon Islands governments were notified at the same time last year, through their New York embassies, of the dangers of patenting human cell lines.

They are named as "inventors" of the cell line for which they have applied for a patent with the US Patent and Trademark Office of the Commerce Department.

The cell line, the first of its kind from individuals in Papua New Guinea, is potentially useful in treating or diagnosing individuals infected with a virus associated with adult leukemia and with a chronic degenerative neurological disease.

They found that the cell line is of potential value in understanding the enhancement or suppression of an immune response to the virus.

The Hagahai case centres around researchers Richard Yangthara, Vivian Neoraku, Carol Jenkins, Mark Miller and Ralph Garesio who worked in conjunction with the PNG Medical Research Institute in Goroka.

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What patenting means/Page 2



Keeping the governor's carpet clean... The Governor's office is not exactly filthy with snot, so it's not as if anything there about snot. It's the snot of the Governor's office that's the problem. The Governor's office is not exactly filthy with snot, so it's not as if anything there about snot. It's the snot of the Governor's office that's the problem. The Governor's office is not exactly filthy with snot, so it's not as if anything there about snot. It's the snot of the Governor's office that's the problem.

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Institute staffers, [Jonathan] Friedlaender says, have been responsible for 'the identification and [prevention] of a formerly widespread and lethal disease, known as pigbel, very important malarial research, ongoing and important public health education efforts in nutrition, [pneumonia], AIDS and ecological degradation'. The institute director, Michael Alpers, has won international awards in tropical medicine, and [Dr Carol] Jenkins, a MacArthur Foundation grantee, is considered an international authority on AIDS behavioural research and interventions (Taubes, 1995).

But overall the Taubes article appeared rather one-sided, probably to balance the previous attacks. The article discussed how in the early 1990s, the IMR researchers, working with NIH virologist Carleton Gadjusek's group,<sup>3</sup> discovered that the Hagahai were infected with a variant of the human T cell leukaemia virus, or HTLV-I. The virus usually produced a severe form of leukaemia, but the Hagahai, or Melanesian, variant — previously unknown — is benign and thus interested researchers. Following then NIH guidelines, the researchers applied for a patent on an HTLV-infected cell line.

While Jenkins argues that she discussed the idea of the patent with the Hagahai, who she says have a clear understanding of the concept of ownership, and only proceeded after securing their approval. 'They came to an agreement that the tribe would be the beneficiary of any royalties due the researchers,' writes Taubes (*Ibid.*).

However, critics such as an authority on indigenous intellectual and cultural property rights, Aroha Te Pareake Mead, deputy convenor of New Zealand's Maori Congress, are scathingly sceptical. 'The Hagahai patent is immoral and unethical, but it is not unique — this is occurring all over the world,' says Mead. 'Yesterday it was a Guaymi woman.<sup>4</sup> Today it is a Hagahai man from Papua New Guinea. Tomorrow it will be a Solomon Islands man and other indigenous individuals' (*Uni Tauru*, 1996). In a communication with me, she remarked:

Although many traditional cultures may not have words for "genetics" or "DNA", most have strong customs protecting the sanctity of hair, blood and saliva/mucus — the three sources of DNA most commonly tapped by Western researchers...

The whole area of genetic research and genetic engineering is the ultimate dream of market-driven, reductionist-thinking scientists. Now, human beings and the very life force and genealogy contained within, have become products. Products to be owned, stored, traded and manipulated. I call it 'high-tech' slavery (Mead, 1996b).

Mead developed this 'commodification' notion further in an unpublished paper



in which she was critical about assumptions over 'informed consent'.

The absence of a robust methodology for gaining the consent of indigenous peoples is a grave concern. The potential to cause division within communities is a tragedy destined to happen. If consent is held as objective, then there must also be an understanding of dissent. As outsiders, who with [the scientists] approach? Who will they consider to have a definitive vote?

If fifty people say no, and twenty people say yes, is that informed consent? Can consent be reduced to an individual level when the very nature of genetic research implicates a wider group? What if a chief consents but members of the community oppose? That, of course, assumes that chiefs or current structures of tribal authority are equipped to deal with these matters (Mead, 1996a).

But Mead stresses that indigenous peoples are not 'anti-science'. The UNESCO Bioethics Committee noted that while the 1993 Mataatua Declaration on Cultural and Intellectual Property Rights of Indigenous Peoples had demanded a halt to the HGDP, it had also called for 'involvement in scientific research by ensuring current scientific environmental research is strengthened by increasing knowledge of indigenous communities and of customary environmental knowledge' (*Ibid.*)

When RAFI fuelled the controversy with its arguably provocative 4 October 1995 press release, the NGO's head, Pat Mooney, was quoted as saying: 'Once you allow patenting of any life form, you pretty much end up patenting all life forms. This was an especially outrageous example,' because it involved a small non-Western culture. As the press release put it, 'the United States Government has issued itself a patent on a foreign citizen. On 14 March 1995, an indigenous man of the Hagahai people ... ceased to own his genetic material' (RAFI, 1995).

According to one of RAFI's critics, Henry Greely, a law professor at Stanford University and chair of an ethics sub-committee for the HGDP, 'that's just wrong'. For a start, claims, Greely, 'the patent doesn't patent a person. It doesn't even patent human genetic material. It's the cell line, a viral preparation derived from the cell line, and three different bioassays to see whether people are infected by this virus. And the idea that the US Government owns this person or his genetic material is absolute rubbish' (Taubes, 1995).

Greely also circulated through the Internet criticisms by Dr Friedlaender who accused RAFI of pushing a 'conspiracy button'. He claimed RAFI had been wrong on several points raised in the original media release.



Ambassador to the US, UN and Canada ... I called a couple of people at the NIH a year ago to find out about RAFI's claims that NIH was involved in patenting a Solomon Islander's genes. I got a satisfactory description of the situation, wrote the letter, had the NIH contact read and okay it as accurate, and then sent it to the Solomon Islands Ambassador. The important point was that the NIH had 'continued' the SI case, with the intention of abandoning it, and that that was their expectation for the PNG case, as well.

Since that was what I was told, I didn't bother to check up further. As we all know, the PNG case was, contrary to my letter, approved in March of [1995]. I only learned of that while visiting the [PNG] Institute of Medical research this past summer, after having visited the Solomon Islands. I expressed my reservations to Dr Alpers about the patent, and received a reasonable reply (the entire issue of DNA patenting was still debatable, so in the absence of an international understanding, they were going ahead in order to make sure no one else claimed the viral variant; and that the Hagahai were going to be primary beneficiaries anyway).

I didn't rush off and notify the SI Ambassador, or the SI Health Ministry officials I had spoken with earlier, because theirs was a different case, one that I understood was going to be dropped by the 'inventors'. In retrospect, this has been my major sin of omission. And I have acknowledged as much in letters to the Ambassador and the Ministry of Health in the last two weeks.

As soon as I saw RAFI's new charges, I called the NIH to establish the status of the SI case, and was assured that it had been entirely dropped — 'withdrawn' is the official word (as opposed to its earlier status of 'continued'). I still have no written proof of that, however (Friedlaender, 1995).

According to Friedlaender, Alpers and Jenkins were being besieged by local reaction in Papua New Guinea to the 'scurrilous' charges by RAFI, and that they were being unfairly targeted by *The National* because they had been critics of Rimbunan Hijau, the Malaysian logging group that owns the fastest-growing Papua New Guinean daily newspaper.

The Institute of Medical Research is under a great deal of financial stress right now, and could go under. One newspaper in the country, owned by a Malaysian logging company that has obtained logging rights to enormous stretches of the PNG rainforest, has been the primary trumpeter of RAFI's charges against the IMR. Since the IMR has been involved in attempts to preserve the rainforest, it makes sense the logging company's newspaper would like to discredit them. If you're looking for REAL bio-pirates ... I think the logging companies are the right folks to attack, not



the [PNG] Institute for Medical Research, the US Institutes of Health, or the Human Genome Diversity Project (*Ibid.*)

On a more personal level, Friedlaender says an Australian university has refused to consider Jenkins for an appointment because she has become 'too controversial'. Friedlaender adds: 'I find that nothing less than scandalous'. Also some reports of the degree of harassment experienced by Jenkins by journalists in Papua New Guinea appear to be sufficiently serious as to warrant complaints being filed with the PNG Media Council.

Colleague Greely points out that while RAFI is right that the DNA of the Hagahai is part of the invention because it is present in the cell line. 'The donors involved can continue,' says Greely, 'obviously, to use their own DNA to run their bodies. They could also, if they chose, patent anything they wanted to patent that was an "invention" from their DNA ...,' except an HTLV cell line (Taubes, 1995).

But whatever defenders of the patent may have been able to say about RAFI's original media release, it is far more difficult for them to find loopholes in the comprehensive 'New questions ...' document (RAFI, 1996). In fact, RAFI, making extensive use of the Freedom of Information Act in the US, has produced a damning case against the defenders and goes on to emphasise the links with other human tissue sample projects, such as in Colombia, and allegedly with military schemes.

For example, defenders of the patent, both scientists and US Government officials, have repeatedly argued that the Hagahai would receive 50 per cent of the royalties from any money made from the patent — and that an agreement exists with the Hagahai to this effect. Yet despite many oral, written and legal requests to the US Government and other officials in the patent for copies of such a document to be made public, 'nobody involved with the patent had produced a copy, or any record of an oral agreement' (RAFI, 1996:5)

RAFI raises several questions on this issue. First, and foremost, does such an agreement exist at all? If it does, what is this 50 per cent? Fifty per cent of NIH's NIH's proceeds? Fifty per cent of Dr Jenkins' portion of the royalties? Fifty per cent of the royalties after NIH and/or IMR's costs are subtracted? Are the Hagahai aware of the agreement? And, if so, are they aware that NIH has repeatedly said that it is unlikely that any money will result? (*Ibid.*)

In April 1996, RAFI was told by NIH that it intended to withhold information regarding the Solomon Islands cell lines and the Papua New Guinea patent on grounds of trade secrets — 'an indication that more intellectual property claims on indigenous people's cell lines are likely'. Following reports that blood collected in Colombia was being exchanged among institutions involved in



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patenting in the US, RAFI also began an investigation into policy controls regarding NIH's sharing of human tissue samples. The arrest of Gajdusek (3) and publicity over NIH facilities at Fort Detrick also prompted RAFI to investigate the sharing of biomaterials with the US military.

RAFI's investigation quickly revealed that NIH not only has Colombian human tissue samples; but has an enormous number of them, including blood samples from at least 27 groups of 'healthy Colombian Indians from ... culturally distinct tribes distributed in 12 political departments (or states) and occupying markedly varying terrain' (Dueñas-Barajas et al, 1993). Other research has revealed that the Atlanta-based Centres for Disease Control (CDC), a US Government institution which filed and then, under pressure, withdrew a patent application on a human cell line from the Guaymi people in Panama (RAFI, 1994), has additional Colombian communities (*see details*, RAFI, 1996).

The US Navy, through medical research units in Jakarta, Indonesia, and Lima, Peru, also has its own program to collect blood samples for HTLV research. Following NIH's report on its research on the Hagahai cell lines, US Navy researchers travelled to Irian Jaya (West Papua), to collect their own HTLV samples from indigenous people (RAFI, 1996). They chose to sample 165 members of the Ngalum people, an isolated group in the Jayawijaya Mountains along the Papua New Guinea/Indonesia border (*AJTMH*, 1993).

In Peru, the US Navy's research unit has also drawn blood samples for HTLV research. The samples were taken from '395 prostitutes from Callao, Peru (the port city of Lima), 72 prostitutes from Iquitos, Peru (another port city on the Amazon River) and 510 prenatal clinic patients from Lima' (*JMV*, 1992). RAFI has also documented that US military-collected samples are almost certainly being shared with NIH and CDC researchers (RAFI, 1996:8). Following 1972, the US military partially vacated the Fort Detrick facility and NIH moved in. Fort Detrick is now shared by the National Cancer Institute (NCI), the National Institute of Neurological Disorders and Strokes (NINDS), and a medical section of the Defence Intelligence Agency.

### Conclusion:

Procedures over the collection, handling and exchange of human tissue samples — especially across international borders — are conducted by an 'unacceptable ad hoc approach', RAFI argues. The transnational traffic in human tissue samples, especially those of indigenous people, appears to be growing sharply. The US Government has patented the cell line of a Papua New Guinean indigenous person with no documentation of either his informed consent or approval of the Papua New Guinean Government.



However, the PNG Government implicitly gave its support to the project after researcher Carol Jenkins was summoned to the office of the then Foreign Affairs Secretary Gabriel Dusava who was later reported to have 'reached an understanding with emphasis on close cooperation between the Government and researchers in sensitive areas like human blood and viruses' (*The National*, 1996b). The NIH has offered to transfer the patent rights to a trust benefiting the Hagahai, 'but biotechnology companies have shown no interest in the cell line' (*The National*, 1996a). Jenkins is reportedly against the transfer, citing the legal expense and US\$6000 in fees payable to the US Patent and Trademark Office (*Ibid.*).

Although RAFI has found no evidence that US military researchers have used foreign human cell lines for offensive biological warfare research, no policies or protocols prevent civilian medical researchers from sharing biomaterials with military researchers. And the US does acknowledge that samples obtained from NIH are used in defensive programs. RAFI also believes that human tissues also 'flow from military researchers to NIH' (RAFI, 1996:8).

Actions that can be taken by governments and non-government organisations to develop more effective controls on the patenting and exchange of human tissues include: seeking an investigation by the UN Human Rights Commission into the HGDP, and the full disclosure of the project's files and membership; pressing for international protocols — such as legally binding commitments to prevent biomaterials collected for the purpose of medical research being accessible to military researchers in any way associated with chemical or biological warfare research; and demanding the requirement of prior informed consent from both the subjects of medical research and their communities or governments before any materials or information stemming from the research can be 'commodified'.

Until these minimum requirements are established and being complied with, and an information program is under way, there should be no further collection or exchange of human tissue.

#### Notes:

<sup>1</sup> A Latin legal term meaning *territory belonging to no one*. As Aroha Mead notes, the general rule of the English common law system was that ownership could not be acquired by occupying land already occupied by another, hence settler governments evoked *terra nullius* in the new colonies thereby refusing to acknowledge existing indigenous inhabitants. See *Mabo v State of Queensland*, High Court of Australian Decision, FC 92/014, 3 June 1992. Mead says that she coopted the term to describe the mindset of colonisers.

<sup>2</sup> Dominic Sengi initially began inquiries as part of a new Certificate in Investigative Journalism course at the University of Papua New Guinea (see 'The challenge of the



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Hagahai blood saga', *Uni Tavar*, 4 August 1995, and 'I saw the need to open up debate: Sengi on the Hagahai saga', *The Independent*, 5 April 1996) but instead embarked on what lecturers described as a 'vendetta' against the individual scientists and the course disassociated itself from him. He was later implicated in the incident in which Dr Jenkins was hauled off an international flight and summoned before Foreign Affairs Secretary Gabriel Dusava. Sengi remarks: 'It pleases me to know that after my effort at bringing Carol to direct discussions with the Government, she is now seriously considering reassigning the rights back to the Hagahai people after I personally put to her that she has no legal evidence to go on publicly saying that rights have been secured for the Hagahai.'

<sup>3</sup>In April 1996, Dr Carleton Gajdusek, head of the NIH laboratory that obtained the PNG patent, an 'inventor' in the Solomon Islands claim, and Nobel laureate, was arrested by the FBI and police in the US on charges involving the sexual abuse of children who lived at his home. Over his career, Gajdusek had brought at least 54 children from Micronesia and Papua New Guinea to the US, where they lived at the researcher's house and attended school at Gajdusek's expense (see 'NIH scientist charged with abusing teen; Nobel Laureate has brought dozens of boys to Md from overseas', *Washington Post*, 5 April 1996, p A-1.)

<sup>4</sup>Under pressure from NGOs and indigenous people, the US Government withdrew a 1993 patent application for cells from a Panamanian Guaymi woman (RAFI, 1996:2)

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