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A cow and bull story?

Dr Harash Narang claims to have beaten the international science community in developing tests for BSE, the 'mad cow' disease, and its human version, CJD. Does he really have answers or is he just a self-promoter? Emily Green reports

IF BSE is in the news, so, like clockwork, is Dr Harash Narang. Narang-watchers will have spotted him on the front page of the Observer on August 4 described as the first scientist to warn about maternal transmission from cow to calf. Scarcely a week earlier, he was claiming in the Daily Mail that he had warned an agricultural select committee about transference to sheep six years ago.

Neither assertion is true but neither is central to the extraordinary role he has played in the BSE crisis. His crowning claim is that he beat the international science community to the development of two diagnostic tests for BSE and its human analogue, CJD. Moreover, he seems to have done it from the two-storey offices of Ken Bell International, a frozen fish distributor in the Jesmond suburb of Newcastle.

In normal times, it might seem ridiculous. However, these are not normal times. Eleven young people have been stricken with a mysterious disease, possibly related to the dairy and beef industry. Hundreds of thousands of cattle are due to be slaughtered, pulped and incinerated lest a tiny fraction of them incubate BSE. Three farmers have committed suicide. Anyone who might have a solution has an eager audience and Dr Narang has been quoted, or his theories cited, by several national newspapers.

Media interest in the doctor dates back before the immediate crisis, to 1992, when he was the subject of a Close Up North programme on BBC TV. In 1995 he was guest expert on a World In Action documentary. Lately, his presence on European television last spring prompted baffled French, German and Italian farmers to send queries to the head of the UK Family Farmers Association. His copious papers, digests and mini-digests also receive big play on the Internet.

It is doubtful that Narang would have made the May issue of Parliamentary Review had he not lobbied the Prime Minister and every agriculture minister since John Gummer. He has successfully enlisted the support of six Labour MPs and moved one shadow agriculture minister to active campaigning on his behalf. Yet his accusations have begun to worry at least two Labour MPs, one of whom barked recently: "If he's a charlatan, why don't scientists just rubbish him?"

Otherwise, if there is even a shadow of a chance his tests work, we are duty bound to represent him."

It is not so simple, not least because of the delicacy of his very public relationship with many of the families of CJD victims. There he is on TV on May 14, pictured with Ilja Andrews when she announced she was suing the Government over her mother's death from CJD. There he is the first week of July next to Frances Hall (whose son Peter died of CJD last winter) leading the Campaign Group to lobby Parliament.

It was in Parliament, on July 10, that Narang again threw down the glove to government scientists before a selected audience of supporters, journalists, MPs and European TV camera crews. "Right from the start of this crisis," he said, "the Government has not approached BSE as a matter of science but as a matter of policy, viewing research as some kind of convenience store where you can pick and choose the hypotheses that suit you."

The gist of the 12 pages that followed was that the Government should have been shopping at Ken Bell International. Narang is subsidised by Ken Bell himself, a prominent and generous local businessman. All that stands between the tests and the people who need them, Narang claims, is a conspiracy involving the University of Newcastle, the Public Health Laboratory Service, the Ministry of Agriculture and London Hospital.

This might sound far-fetched but, to anyone who has fought to save the life of a loved one, a long shot sounds better than no shot. Last winter the parents of Peter Hall spotted Dr Narang on TV and called him in as their son lay dying in Newcastle's Royal Victoria Infirmary. The symptoms were atypical and the patient young, so, at the time, the acting neurologist did not think it was Creutzfeldt-Jakob disease. Narang took a urine sample and concluded that, yes, Peter had CJD. This was confirmed by a post mortem.

Frances Hall now wants Narang's live urine test used on cattle across the country as a matter of urgency. "I'm not a scientist," she told me, "but I would think he's probably the most expert person on CJD."

Narang encourages that view, yet the matter of expertise in the field is by no means clear cut. The infectious agents for BSE and CJD are unknown. The person who cracks it may also solve the riddle of a far more pernicious killer, Alzheimer's. Microbiologists tend to think in terms of bacteria, virologists of viruses, geneticists of inheritable disorders, and many molecular biologists refer to "prion diseases" (prions are miniscule protein particles, so small they have no DNA). Narang trained as a zoologist studying plant parasitology. He began his career working from 1970-77 for the Medical Research Council in

Newcastle General Hospital, where he developed an interest in spongiform encephalopathies. As early as 1975, he published a paper Virus-Like Particles in Creutzfeldt-Jakob Biopsy Material in which he noted herpes-like material in biopsies from CJD victims. This material turned out to be fragments of dying cells, a sort of biological flotsam and jetsam.

In August 1977, he joined the Public Health Laboratory Service. His employers were intrigued by spongiform encephalopathies and encouraged visits to various specialist research posts. One visit took him to the Edinburgh Neuropathogenesis Unit, where Dr Alan Dickinson pioneered the strain-typing of scrapie. Dickinson remembers Narang as a "harmless enthusiast" who "didn't seem able to grasp the business of looking down the electron microscope and seeing things, and then thinking scientifically about them".

In 1985, the PHLS granted him leave to work briefly in the US laboratory of Dr Daniel Carleton Gajdusek at the National Institutes of Health in Bethesda, Maryland. Gajdusek received a Nobel prize for his pioneering work on kuru – a spongiform encephalopathy found among cannibals in New Guinea. It was during this and subsequent visits in 1988 and 1989 to the US that Narang says he made a series of breakthroughs: "At this stage I found this quick diagnostic method. You would touch the surface of the brain and examine it in the electron microscope."

This "touch impression technique", as he calls it, is what he and his supporters insist is needed in British abattoirs to check if infected meat is slipping through the system. In written evidence submitted to a House of Commons select committee in 1990, Narang claims to have invented the technique. To be precise, it was the discovery of Scottish scientist June Almeida, working in Canada in the early sixties. It was abandoned because it had limited diagnostic use. While it may pick up tell-tale plaque residues from diseased brains, by the time these are present the animal would have been teetering around so badly that it would have been spotted anyway.

The work of American electron microscopist Pat Merz formed the core of another of Narang's breakthroughs. In 1978, she spotted tiny fibres unique to encephalopathies. These were dubbed "scrapie associated fibrils" (SAF). Narang attached what he called "tubulofilamentous particles". These fantastically named items bear an uncanny resemblance to his early tubules, which turned out to be biological litter.

In yet another discovery, Narang spotted a single-stranded DNA. This is unknown in human DNA, which has two strands. One strand means he thought he saw a virus. However, Narang's single-stranded DNA broke down into a repeating pattern of six bases, which is thought far too small to have a DNA

function. At any rate, Narang announced his unique DNA was wound around the SAF and protected by a protein coat. The result he named a "nemavirus" and deemed the root cause of transmissible spongiform encephalopathies.

ONE OF THE obstacles standing between Narang and a Nobel prize for this nemavirus is that no one but he can isolate the single-stranded DNA. Another is that drawings of it bear an uncanny resemblance to the tobacco mosaic virus, a common plant disease and one of the first things spotted under an electron microscope. Narang blames the lack of evidence, in part, on the PHLS in Newcastle.

Problems at the PHLS started in earnest when a 1989 application for a Ministry of Agriculture grant to develop his "touch impression technique" was denied. He published a letter in the Lancet about his diagnostic work into BSE and CJD. This attracted the attention of David Clark, MP for South Shields and then shadow agriculture minister. In the spring of 1990, David Clark introduced Dr Narang to Ken Bell.

Bell is a charismatic philanthropist whose good works include funding the eighties campaign against the irradiation of food. He was interested in BSE and CJD for two reasons: he comes from a long line of butchers and his brother died of a dementing disease. He quickly put up pounds 20,000 for Narang's work. Working in tandem, the shadow agriculture minister laid on political pressure. Within several months, Narang was invited to submit evidence on BSE and CJD to a Commons select committee. He did this, recommending his own research.

With Bell's money, the work was begun at the PHLS that autumn. It went badly. Horrified staff complained they had been given no safety protocols. The Health and Safety Executive was called in and an eight-page report issued a year later concluded that radioactive material had been left in unauthorised areas, that there was inadequate sterilising of instruments used on CJD and BSE material, that Narang's claims about how autoclaving had been carried out were untrue and that he was conducting unlicensed genetic manipulation of scrapie, the sheep equivalent of BSE, and E. coli bacteria.

A disciplinary inquiry led to a written warning that "any work on spongiform encephalopathy involving molecular biology or the presence of single-stranded DNA" was not to be carried out "without peer review grant support". This meant he would have to answer to scientists, not fishmongers and politicians. Narang claims that the experiment was stopped because "this fear came that I am going to rock the boat".

But, again with the support of MP David Clark, by late January 1991 MAFF was badgered into supplying 10 cattle brains, five BSE-negative, five BSE positive, for

Narang to demonstrate his "touch impression technique". He managed to detect three of the BSE positive brains, two within the agreed time limit. MAFF decided that 40 to 60 per cent accuracy was of no diagnostic use.

THIS did not defeat Narang. "The harder you hit him, the higher he bounces," observed one of the Edinburgh scrapie researchers. This time Narang conducted his own surveillance of northern hospitals for cases of CJD. After complaints were levelled against him for impersonating a hospital doctor to the bereaved family of a patient in a neuropathology ward, in the summer of 1992, he became the subject of yet a second disciplinary inquiry.

Undeterred, by the autumn Narang dramatically upped the stakes. He revealed in a Close Up North programme that he was developing a blood test for live animals which would probe for his single-stranded DNA. There remained the small matter of confirming its existence. Enter Professor John Oxford of the virology department of the London Hospital, whose department has conducted important Aids work and was then, as now, interested in spongiform encephalopathies.

The potential diagnostic value and challenge in isolating DNA in the infectious agent caught the professor's imagination. He admits he was also impressed by Narang's association with a Nobel prize winner. "The question was," Oxford says, "should we have Harash with us or not? I felt that it was his idea, it's not up to me to take his idea, so I felt the proper thing to do was have Harash with us. Also, scientifically, if you want to reproduce someone's work it's better to have them around."

Narang was invited to advise on a year-long trial in London starting in the summer of 1993, while the PHLS agreed to cover his salary. Narang was still under review for safety infractions and the unlicensed genetic manipulation, so three scientists were interviewed to actually conduct the work. Dr Lynne Bountiff, a molecular biologist with experience in scrapie work dating back to 1973, was selected. The pounds 60,000 trial was jointly funded by the Ministry of Agriculture and the Biotechnology and Biological Sciences Research Council (BBSRC). It was overseen by Professor Jeffrey Almond, a virologist at the University of Reading and member of the Spongiform Encephalopathy Advisory Committee (SEAC).

It found no DNA, single-stranded or otherwise. Narang now says he was forced to go to London by the PHLS and dismisses the work as "a waste of time and effort". He refers to the 44-year-old Dr Bountiff as a "girl" and says: "Her job was to scream and shout."

Narang was made redundant by the PHLS in November 1994. In 1995 he again turned to the media, demonstrating his "touch impression technique" for a World

In Action programme and declaring that 30 per cent of cattle going into British abattoirs were positive.

The same year Narang and Creutzfeldt-Jakob Disease became household words. On the May 21, 1995 19-year-old Stephen Churchill died in the Royal United Hospital in Bath, the first of the young victims of the new variant of the disease. On hearing about it, Narang travelled to the West Country. Stephen's father, David, recalls: "He was the only person who could offer any explanation, who took the time and trouble to visit us and our son."

Stephen died before Narang could get a urine sample. However, he did find samples elsewhere (how many and from whom is undocumented) and the following autumn it was announced in the media that he had developed an early detection, non-invasive and quick urine test.

According to Narang, it is patented and ready to go: "My urine test is simple again. I have developed a simple kit which people can use and which will concentrate the urine. And then one examines that urine specimen again in the electron microscope. And if you see the same structures again, like from the brain, then you call the specimen positive. Otherwise you call it negative."

Unfortunately, there is no way a test can be marketed that probes for an infectious "nemavirus" whose scientific integrity is unproven. Still, its hand forced by Narang's publicity, on December 4, 1995, SEAC wrote to Narang requesting details of the urine test. Narang never responded. Rather, on December 17, he emerged as the BSE expert of choice in the Mail on Sunday. The first of six sensationalist features referred to Narang's "once brilliant" career and vilified the PHLS. "His urine test might well have been in use already had he not, a year ago, been made redundant by the PHSL {sic} and denied essential laboratory facilities ever since," reported the Mail.

Last winter, the Halls did not demand scientific proof when Narang tested Peter's urine. They had enough on their minds: their son was dying. So what to scientists had a sleight of hand quality about it struck the Halls as long overdue proof of a real expert.

While avoiding scrutiny by SEAC, Narang has taken his test to farmers. Geoff Nicholls, a beef producer in Cheshire, has lost five of his herd to BSE. Since meeting Narang, he has perfected how to dodge around cows collecting urine specimens. He is also keen that beef tested by the "touch impression technique" receive a "Harash Narang logo" and recommends such a scheme to supermarkets. He says that when he is sure it is safe, he plans to sell off the four generations of livestock built up by his father and leave the business.

The only thread remaining between Narang and the world of accredited science is his relationship with Dr Daniel Carleton Gajdusek, the 73-year-old Nobel prize-winning kuru expert. Indeed, in 1987-88, Gajdusek did sign three papers with Narang - a seemingly weighty validation. Yet, according to his entry in Who's Who, Gajdusek has also signed at least another 997 papers. Repeated recent requests to Gandusek's office for verification of the work with Narang have met with polite stalling.

On April 6 of this year, Gajdusek was arrested and charged with child abuse.

No doubt Narang will vault over this credibility problem, bouncing from invention to invention amid the desolation.

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