COMMENT

Willing participants and tolerant profession: Medical ethics and human rights in narco-analysis

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I did not know Dr Ramanadham personally, though he was active at the same time when I was also very active in the trade union and human rights movements. His work inspired many of us, for the involvement of medical professionals in doing something progressive is quite rare in India. Amongst such rare doctors today, we have Dr Binayak Sen, a friend of ours who has used his professional skills only for the poor and involved himself in human rights work. The Chhattisgarh government has imprisoned him on false charges. Incidentally, both Dr Ramanadham and Dr Sen specialised as paediatricians.

Participation of some doctors in the violation of democratic rights or in conservative and anti-people activities is not new in India, as was discovered by the Medico Friend Circle in its investigation of carnage in Gujarat in 2002 (1). In 1995 the Indian Medical Association had undertaken a survey of medical persons to find out what they knew about torture (2). They found that almost 60 per cent doctors believed that torture was justified in certain circumstances and saw no harm in it!

Historically, medical professionals have always been involved in designing techniques for torture as well as the death penalty all over the world. Most of the time, doctors cheerfully participate for two reasons, or, should we say, two misconceptions. One, that when these things are inevitable, the argument goes, doctors should do something to make them humane. And, two, the more efficient the method, the quicker the result and, hence, less pain and suffering.

When I was working for human rights organisations, we used to take up campaigns when somebody died in a police lock-up. There would be a small committee of journalists, lawyers and doctors like me, and we would go around doing investigations and then come out with a report. Normally, our scrutiny was focused on the conduct of the police because they were the culprits in the killing. But I found that in all these cases, even if a doctor was not directly involved in carrying out the torture, often the tortured person would have been brought for treatment to medical personnel in a public hospital. Doctors would treat them and then allow them to be taken back to the police lock-up for more torture. The doctors restore a tortured person to health so that that the person can be interrogated again in the same manner, and information or confession extracted. The aim of torture is not to kill – often killing is regarded as failure – and so medical help may be needed to keep the tortured person alive. It is in this cycle of torture-treatment-torture that there is intentional or unintentional involvement of doctors.

The involvement of doctors in carrying out the death penalty is well documented. In India even the judiciary forces doctors to participate in these executions. In 1995 the Supreme Court struck down a provision in the Punjab and Haryana Prison Manual relating to hangings (3). The prison manual said that a person who is hanged should be kept hanging for half an hour. The reason was very simple. It was in the 19th century, in colonial times, that hanging had emerged as a more efficient and humane method of judicial killing. In hanging, the knot and its placement are required to be such that the impact of hanging breaks a vertebra in the neck, which leads to severe injury to a crucial part of the brain, thus killing the person instantaneously. However, sometimes there is no instantaneous death, and the person has to be kept hanging so that death is caused by asphyxia. So the colonial administration had this half hour rule. But the petitioners argued that such a practice was barbaric. And our court agreed and passed the order that a doctor should be called upon to examine the person soon after s/he is hanged. And as soon as the doctor finds the person dead, the body should be brought down. So, since 1994, the doctor is supposed to examine the person who is hanging every few minutes and, if the person is found alive, is supposed to give instructions to keep him hanging! Now, this makes the doctor barbaric. The doctor, whose job is to heal, to give life, to resuscitate, is made to collude in the actual judicial killing by playing the role of assisting the hangman. This is a travesty of the fundamental principles of the professional ethics of doctors. Unfortunately, our medical associations have allowed this judgment to go unchallenged. (There was one exception, though. Immediately after the judgment in 1994, the Forum for Medical Ethics Society that publishes the *Indian Journal of Medical Ethics* had written to the Supreme Court in protest, to get its views against the judgment heard, a request that the Court turned down. Thereafter, it made a representation to Justice Ranganath Mishra, the then chairperson of the National Human Rights Commission, but no change was effected in the judgment.)

The process by which the bulk of any profession turns against humanity does not happen overnight. The Nazi physicians who used their medical skills to participate in atrocities did not become inhuman overnight. It took years to learn to become inhuman by *adjusting* their ethics to the demands of the Nazis, before eventually participating in the inhuman acts of the state.

That is the reason why such *adjustment* of ethics, the slippery slope, must be nipped at the very outset.

Examining the science of lie-detection and narco-analysis

Are the techniques used for lie-detection and narco-analysis scientific? Two aspects of any science are important. One is validity: Is it a scientifically validated method? To what extent does it measure what it claims to measure? And another is reliability: Is it really a reliable method? How consistently can it be reproduced across time, persons involved and situations?

When I examine the science of a method, it does not mean that I give less importance to human rights and ethical content, or to the use of that method. Both scientific and unscientific methods can be used for violating human rights. Because a method is scientific, its use does not automatically become ethical or humane. Good scientific methods and devices have often been used for very bad purposes. But an examination of science is necessary to engage with those medical scientists who are otherwise neutral but get swayed by the claim to scientific validity of such methods. Besides, an unscientific method deceives and does not serve even its basic purpose of finding out what it intends to find, and, in the process, punishes the innocent. A review of scientific literature on the use of lie-detection and narco-analysis *for establishing crime* shows there is not enough material to assure us that these are scientifically researched methods. (In biomedicine, for making a claim to science, one uses the golden standard of the randomised controlled trial.) Moreover, not much of the inconclusive literature available on the subject is from scientific journals. Most research on the subject is sponsored or conducted by people in the security, intelligence, police and military agencies. So there is a major conflict of interest.

Lie-detection methods

Polygraph: Lie-detection is separate from narco-analysis. The former is not invasive, but the latter is, as it introduces drugs in the body system. But in practice, there is a big connection between the two and they complement each other. The polygraph is a lie-detection method in which it is assumed that when you are telling a lie, that is, when your mind is trying to deceive, it has a direct physiological impact, that is, your physiological response changes – the breathing pattern changes, pulse rate changes, the way one sweats changes, and so on. These physiological changes are used in the polygraph method to detect lies. They ask you questions, and electrodes attached to your body record changes in your pulse rate, breathing rate, blood pressure and other things. They compare changes or lack of changes when you lie or do not lie. The lying is found out by asking *control* questions (those for which answers are already known) and the *relevant* questions (relevant to investigation of the crime).

Computer voice test recorder: A voice recorder is attached to a computer having certain specialised programmes and functions. Like physiological changes recorded in the polygraph, this device records changes in voice, which is supposed to have a different character when one is lying from when one telling the truth. The sophisticated computer programme eventually pronounces whether the person was lying in response to the *relevant* questions. I looked up court judgments from the US on the use of this device, and came across cases where the computer had erred, leading to the incarceration of innocents. In one the person later got compensation from the manufacturer of the machine.

Brain mapping/brain fingerprinting: The new technique of *brain mapping* and *brain fingerprinting* is used not only for lie detection, but also as the basis for undertaking narco-analysis. It uses well known diagnostic instruments, the electro-encephalogram (EEG) and the functional magnetic resonance imaging (fMRI). Such machines are now used on a regular basis in the forensic laboratories of Bangalore, Mumbai and Ahmedabad. These are also the places where narco-analysis is carried out.

This method shifts attention from the physiological response of the body to the electrical responses in the brain itself. This supposedly takes care of the limitations of measuring physiological response in the polygraph. Besides, the person is not made to say anything; he or she is only made to hear something and the rest is done by the machine to find out how the brain is responding. They say that the knowledge of what you know about persons, places, events, etc., is stored in your mind. If asked, I may tell the truth or lie about them. Or I may prefer to stay silent, saying that to keep silent is my right. But once this method is employed, we no longer have the right to our silence. Technically, one may stay *silent* in the sense that one has said nothing. And yet the machine attached to my skull provides my interrogators the information. Let us see how this is done.

The person is connected to the EEG or fMRI, and not required to talk. They use auditory stimuli of name(s), place(s), event(s), etc. that are heard by the person. Now, there is something called the P-300 brainwave. According to theory, this brainwave is not under the person's volition or control. In a fraction of a second after hearing stimuli, if stimuli are recognised, this brainwave spikes. This electrical spark in specific areas of the brain is recorded in the fMRI or the EEG machine. And that way, according to them, they can get the *content* of the brain – not details of what the person knows, but whether s/he knows about certain specific things that they are interested in finding out. In short, they get this information without the person's active participation, without him/her ever verbally answering any question or having any control over what they found out from the brain's electrical activities.

Now, whether this interpretation of the P-300 brainwave is scientific or not, and whether it is based on evidence, I have no idea. But it is on this basis that they believe you know something, and then they have to *persuade* you to bring it out of your mind. And it has to be brought out in such a manner that you are unable to exercise any control over what you say. Because if you are allowed to use your mind to control what

you say, then you may lie or filter out what you do not want them to know. So, having seen the contents page of your mind, as they believe, they follow it up with narco-analysis to read the remaining pages.

Before I deal more with narco-analysis, it may be useful to discuss what independent scientists have to say about lie-detection techniques. In the last few years, two major scientific or professional committees evaluated these techniques. Lie-detection methods are used in screening applicants for sensitive jobs. It was in this context that the US Department of Energy requested the National Research Council (NRC) for an evaluation of the techniques. The NRC appointed an expert committee that brought out a report in 2003 (4). The second review was done by a Working Party of the British Psychological Society in 2004 (5). Both committees concluded that lie-detection techniques were not scientific, or were based on dubious science.

The assumption that there is always a mutual correspondence between psychological and physiological states is wrong. I also feel the assumption that P-300 brainwaves provide accurate information on whether the brain knows something is a highly mechanical understanding with doubtful scientific validity. Another important issue is the fear of being labelled a *liar*, which can create physiological responses that may actually lead to totally erroneous conclusions about the information obtained. Thus, in all these techniques, the possibilities of what we call false positives and false negatives are very high.

False positives are when those who are telling the truth are wrongly judged liars. (Even if the judgement of the machine, or one derived by the investigator on the basis of data provided by machine, needs corroboration, the person is doomed as a suspect.) **False negatives,** on the other hand, are those judgements where a person is actually lying, but the machine and investigators judge him or her as telling the truth. False negatives can also be achieved by what is called **countermeasure**, by training oneself to misguide the interrogator or machine. There is a very interesting case described in one of these two reports (5). A person called Floyd "Buzz" Fay was falsely convicted of murder in the USA. He was actually judged as a criminal and a murderer simply because he failed a lie-detection test. He was sentenced to life. But after he had spent two-and-a-half years in prison, the police found the real murderer and Fay had to be released. But when he was in prison on such grave but false charges, he started training the inmates of the prison to beat the lie-detection test and he did it very well. He provided training for a duration of 20 minutes to those who had told him that they had committed the crime for which they were supposed to go through a lie-detection test. He gave this training to 27 persons, among whom 23 beat the machines and came out scot-free!

Narco-analysis

Now let us look at narco-analysis, which is fast replacing lie-detection techniques as the preferred method of making a person tell the truth and nothing but the truth. I started with lie-detection and brain mapping because the faith in narco-analysis is part of the same mindset that believes there is a technology (or the possibility of one) to recognise truth from a lie, or to get to the truth against a person's wishes. It is also one of the latest in a chain of attempted technological fixes, and has the best so-called scientific look to it. So its importance lies in its capacity to seduce scientists into believing that it is scientific and free of the shortcomings of the lie-detection techniques mentioned earlier, and, of course, that it is something *less than torture*. That is why it is more important and, of course, so much more dangerous.

From what I have learnt, narco-analysis, as a procedure of using a drug to facilitate the extraction of relevant information from a person's mind, has a history of more than 80 years. But I do not know much about its early history. Currently, the drug used for narco-analysis is called sodium pentothal. This is a trade name given by a company, Abbott Laboratories, which discovered it in 1935. Its real name is thiopental sodium, which is a thiobarbiturate, a part of the barbiturate group of drugs. But before this became the drug of choice, doctors undertaking narco-analysis for treating patients had used several other drugs like sodium amytal, scopolamine and nitrous oxide. Apart from drugs, hypnosis was also used in psychiatry. All these procedures were designed to help patients suffering from certain mental illnesses.

The use of drugs by security agencies happened along with their medical use. For instance, the CIA had done covert experiments with LSD – causing the death of one unsuspecting participant – during the Cold War in order to use its mind-altering properties to its advantage. During the Cold War period it was believed that the Soviet Union knew some method to brainwash people. And I remember from the 1970s that if a person became Marxist, we were told that s/he had been *brainwashed*. This term was used very commonly at that time, but at present it is hardly heard of, though a different kind of ideology is washing the minds of a large number of people. The death in this covert LSD experiment became a scandal, leading to Senate hearings. These hearings also revealed that the CIA was experimenting with sodium pentothal. Some of the documents of the senate hearings are available on the Internet (6).

Sodium pentothal: Sodium pentothal also has an interesting history. It was developed and tested as an anaesthetic agent. It is given intravenously and is an ultra-fast-acting anaesthetic. It acts within 45 seconds of being introduced into the bloodstream. Almost 60 per cent of it concentrates in the brain, and the person immediately starts losing consciousness. It can also be given for a relatively longer period of time. So surgery can be commenced immediately, and the person can be kept under anaesthesia for the duration of surgery. After one stops giving it, it takes 15 minutes to three hours to wear off, and so the recovery from anaesthesia is also relatively fast. Thus, it is a very useful drug. After it was developed, they used it as an anaesthetic agent in an emergency situation during World War II, in the famous Pearl Harbour attack. When Pearl Harbour was

bombed, injured persons were given sodium pentothal while being provided surgical care. Several died due to the overdose of this anaesthesia. This information was not made available to the public till the 1990s when freedom of information legislation helped get it out. The point I am trying to make is that this very useful drug can kill if it is not used judiciously. Its proper use requires the services of a doctor whose sole aim would be to care for the person and not just to extract information by any means.

Sodium pentothal is also famous for its use in other areas like euthanasia. Voluntary euthanasia is where the doctor helps a patient, who is suffering from irreversible, debilitating illness that would surely lead to a slow death, to die. One of the drugs injected in order to hasten death is sodium pentothal. The lethal injection that is used in the USA for executing the death penalty has also been sodium pentothal.

Sodium pentothal in narco-analysis: Now let us understand the assumptions underlying the use of sodium pentothal, an anaesthetic drug, for its intended forensic use in narco-analysis. There are four different stages of anaesthesia. The first is called induction. The second is a phase of excitement and the beginning of the loss of consciousness, when the person is partly conscious or semi-conscious, or is in a trance-like state. As one continues to give the anaesthetic substance, the person goes into the third stage of anaesthesia, the surgical plane, when a person loses sensation and is totally unconscious. The loss of consciousness in this stage is reversible. However, a higher dose than this stage leads to the last and fourth stage: coma or overdose, which is often irreversible due to depression of the brain stem and medullary regions, and can lead to death as happened at the Pearl Harbour.

In narco-analysis a person is kept at the second stage of anaesthesia. The hypothesis is that, at this dose and stage of anaesthesia, sodium pentothal not only produces an effect similar to hypnosis (trance-like state), but, by its interaction with certain chemicals of the brain, it also makes the person speak the truth. So the hypothesis governing the forensic use of narco-analysis is that the activity of the upper or cortical part of the brain is required in order to filter or alter a person's response to stimuli. Another assumption is that, compared to telling the truth, lying demands more complex processing in the brain in order to decide how to lie and what to say in a lie. And this complex processing takes place in the upper or cortical portion of the brain. The final assumption is that, if the aforementioned hypothesis is true, then experts need only have a mechanism or a drug that can stop or reduce the influence of the upper or cortical part of the brain whose role is critical in forming a lie. Once that is achieved, the brain's capacity to lie is altered or controlled by the investigator. And the hypnotic effect produced by the drug would ensure that the person tells the truth and nothing but the truth when asked a question.

Have the scientists found in sodium pentothal such a drug and in narco-analysis such a mechanism that can alter the brain in the manner required? They claim that it is so. In the October 2006 issue of the *Indian Journal of Medical Ethics*, I wrote an editorial (7) disputing the science of narco-analysis and criticised its practitioners for violation of ethics and human rights. The topmost forensic practitioner of narco-analysis in India responded (8) to the editorial. He stated that sodium pentothal has a property of inhibiting the working of a neurotransmitter inhibitor in the brain called GABA or gamma amino butyric acid. The assumption is that this neurotransmitter inhibits the way the brain controls the response that a person gives, and, by inhibiting this neurotransmitter at a certain depth of anaesthesia, sodium pentothal removes or reduces the inhibitory powers of the upper or cortical brain.

Is there any sound scientific proof for such a series of assumptions? The medical journals are silent on this. On the contrary, there is more evidence, both empirical and otherwise, to argue that foolproof assumptions of such kind are not possible.

As I said earlier, it is known that the second stage of anaesthesia produces excitement and the person is not fully unconscious but in a trance-like state. Psychiatrists who have used this drug have thus talked of patients being very lucid in narco-analysis and have also talked about narco-hypnosis. Under such assumptions, for decades they used this drug to help victims of trauma, whose minds had suppressed their memories of the trauma or were reluctant to describe their trauma as in doing so they were reliving their painful experience, all of which were causing them psychological problems. After writing that editorial I interacted with a few psychiatrists to understand their viewpoints. I found some provided very good support, though many of them have still not written publicly on this issue. I also interacted with a psychiatrist from the armed forces who said that he had used this drug for narco-analysis to help his patients. He also told me that he discontinued its use as well as narco-analysis because while patients gave information in the hypnotic trance induced in the process, they also gave lots of misleading information. His contention, thus, was that the method was not reliable. However, at the same time, I must add, he said that he had full faith in the security agencies and contended that, in any case, the security of the nation was more important than human rights!

Narco-analysis and hypnotic suggestions: While I was giving a public lecture in Mumbai on narco-analysis, a person from the audience said that forensic experts planted ideas in the mind of his relative accused of a crime while he was undergoing narco-analysis. His question was whether it was possible to do so through suggestion during narco-analysis. I am not a scientist, and least of all an expert on this subject, to give a definitive answer. However, it is known that the trance-like state of hypnosis was used in psychoanalysis. and as a person was also considered more prone to suggestions in this state, it was also used in psychotherapy.

I have no scientific evidence, but common sense says that if sodium pentothal produces a trance-like hypnotic state at the second stage of anaesthesia, making a person talk with less inhibition in giving or recollecting information, then perhaps the reverse could also be true. Therefore, scientists who are

confidently using sodium pentothal to make a person speak the *truth* have an obligation to provide evidence that their assumptions and hypotheses do not work at all in reverse. Unless that is done, there will always be a suspicion that the *truth* found in narco-analysis could also be *manufactured truth*, planted by the interrogators themselves.

Narco-analysis and torture

Is narco-analysis a type of pharmacological torture? The United Nations' definition of torture (9) has four components. The first is that torture produces physical/mental suffering and is a degrading treatment. The second is that it is always intentionally inflicted. The third is that it is inflicted for certain purposes such as getting information, confession, etc. And the fourth is that it is inflicted by an official actor or an actor acting on behalf of an official. Narco-analysis satisfies all four components.

It is degrading because it deliberately uses a drug that attempts to alter the state of mind of a person against his/her wishes. It produces mental suffering in an individual, more so if he or she discovers that some of his or her fantasy revealed in the procedure is used to make accusation of a real crime. In the present Indian condition it is even more so because the police or forensic laboratory has on occasion released video clips of the actual narco-nalysis of a person to the media, where it is played out on the TV repeatedly when it is not even admissible as evidence in a court of law. Thus, it inflicts a high level of mental suffering and stigmatisation of the individual by society. The rest of the components of the definition are easily satisfied. Indeed, it is deliberately inflicted – so deliberately that it is systematically done in an operation theatre and not in a prison or police lock-up. It is also a method not only to extract information, but also to force confessions. And it is always done by police through its forensic laboratory and personnel employed there, along with the doctors in a hospital who are specifically appointed by the police to do the procedure (10).

We always thought of torture as gory, blood-soaked and barbaric. So we are often misled into believing that anything that does not look gory, spill blood or break bones cannot be barbaric and a form of torture. Torture, in fact, remains torture even if it does not spill blood, break bones, and is done in sterile, air-conditioned operation theatres. What is true of the procedure for the death penalty, which moved from gory and bloody firing squads and the guillotine to the electric chair and sterile lethal injections, holds true for torture as well. Narco-analysis produces torture as clearly as the lethal injection produces death.

Doctors, ethics and narco-analysis

The last point that I want to make is regarding the relationship of narco-analysis to doctors and their medical ethics. As I said earlier, sodium pentothal is a very dangerous drug if not judiciously. It needs to be tested in small doses to rule out the possibility of producing shock or an allergic anaphylactic reaction. The anaesthetist also needs to know how to identify any bad effects that may jeopardise a person's life. The drug can suddenly lower blood pressure, cause cessation of respiration, apnoea, unexplained constriction of the larynx or a laryngeal spasm (needing emergency surgery). It can also cause delirium, nausea and headache. But it is also used very commonly in surgeries simply because it is used very carefully by properly trained anaesthetists in the setting of an operation theatre in a hospital. That is why you will find that, although a forensic laboratory will claim that it did narco-analysis, it was actually performed in an operation theatre of a hospital, mostly in a public hospital. The Godhra accused were narco-analysed not in a laboratory, but in the SSG Hospital in Baroda, a public hospital with a medical college (11).

That means narco-analysis is a method that cannot be carried out without the assistance of doctors. Indeed, it is also not disputed that one or more doctors directly participate in it, are continuously present during the interrogation, and the work these doctors do is nothing but assisting the interrogators. And they not just assist, but are actually responsible for creating the conditions for the interrogation to proceed, continue and conclude as desired by the interrogators. Clearly, doctors are directly involved in this procedure fo pharmacological torture. Besides, since there is a possibility of a series of life-threatening adverse outcomes, some other doctors, including a surgeon, have to be on call. And above all, there is also the association of the hospital and its head, who is normally a doctor, with the procedure. He/she not only allows the procedure, but also makes all critical facilities of the hospital – physical as well as human resources, which includes doctors and nurses – available to the interrogators to conduct this torture in the name of scientific medical procedure.

What does this mean to human rights and human rights defenders? All the exemplary work that was done by human rights activists, and all the gains of human rights in relation to medicine that were achieved in the 1970s and 1980s are being thrown out of the window. The achievement and gains of human rights were these: the doctor, himself or herself, will not participate in torture, will not remain present where torture is carried out, and, not only that, if he or she comes to know about such torture as a doctor, he or she will immediately report it.

Health professionals must recognise that they are being forced or persuaded under various pretexts to violate their own professional ethics. Their participation is giving out a message to society that the medical profession tolerates those members who are performing medical procedures in violation of the wishes of the individuals on whom they are carried out, thus also violating the ethical principle of informed consent (12). This is also an important issue even in terms of the history of the medical profession. For instance, during the 19 months of the Emergency in the 1970s, we all know about the forced vasectomies performed on men. But who performed those vasectomies? Doctors did. They willingly participated in the name of a top-priority national programme, they felt an urgency or emergency to sterilise people without consideration of whether the persons brought by the police and other government officials were in any way coerced, forced or, for any

other reason, were unwilling to undergo the operation.

This is a very important issue for associations of various health professions. The World Medical Association (WMA) issued the Tokyo Declaration against torture and on doctors' role in torture way back in 1975. In response to events that followed 9/11 in 2001, it revised this declaration recently to ensure that there was absolutely no ambiguity in the prohibition on doctors' participation in torture (13). The Indian Medical Association is a member of the WMA, is signatory to the declaration, and thus has a moral obligation to stop doctors from participating in torture and the death penalty.

To conclude, the participation of doctors in narco-analysis and the death penalty, and the tolerance of medical associations for their unethical acts, are eroding the very core of the medical profession. It is in the best interest of health care professions, the human rights movement and society in general that doctors and nurses are immediately removed – completely and unequivocally – from participation in narco-analysis, from police interrogations of all kinds, and also from their participation in the death penalty.

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