

# ECT: shock, lies and psychiatry

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File: ECT History

Although Cerletti is often attributed with the introduction of ECT (1938), references are available which highlight earlier use. "In England, in 1872, Clifford Allbutt used the passage of electric current through the head for the treatment of mania, brain wasting, dementia and melancholia" (Strabeneck, 1986). It was, however, the independent practices of Meduna and Sakel who set the precedents for the induction of epileptic fits as a form of treatment. In 1938 Cerletti supplied the electricity.

The first electro shock was given to an Italian man known only by his initials as S.E. He had been arrested by the police department for vagrancy and was referred to hospital for observation. After a diagnosis of schizophrenia, he was identified as a first subject in the study. Although Cerletti sought permission to experiment on hogs he did not pursue the same procedure when conducting this human trial. He administered the first shock, which failed to induce a convulsion, because the voltage had been set too low. Whilst Cerletti discussed with colleagues how to proceed, S.E. (who had been listening to this conversation) stated, "Not another one! It's deadly" (Berke, 1979). Despite this man's expressed wishes, Cerletti proceeded with his experimentation, and using a higher voltage, induced a convulsion.

Today, psychiatrists claim to administer modified ECT. It is presented as a safe treatment far removed from Cerletti's crude experiments. In fact, modifications do little to increase the safety of ECT and are more damaging. For example, there have been major changes in the way that psychiatrists now view the administration of ECT. First, they consider the use of a muscle relaxant essential. This is now given routinely with all ECT to prevent the orthopaedic complications of dislocation and breakages, which were common side effects associated with ECT in the past. Muscle relaxants sedate the brain and it is much more difficult to induce a seizure. Therefore the voltage has to be increased even higher than with unmodified ECT to reach the threshold necessary to produce a convulsion. The result of this improved procedure is a higher degree of damage to the brain.

Another modification is the administration of unilateral, rather than bilateral, ECT. This procedure assumes that one side of the brain is less valuable than the other. Humanistic psychologists would not agree. Instead, they might argue that the non-dominant side is essential to creativity. The placing of electrodes unilaterally increases the concentration of current in one part of the brain and the damage to this part is more severe than in bilateral ECT (Breggin, 1989). EEG results one month after unilateral

ECT confirm that it is possible to detect which side of the brain is damaged (Weiner, 1980). Modified ECT is not scientifically proven. Psychiatrists claim that it is a safe technique in an attempt to control popular opinion. In general, many psychiatrists have insufficient regard for the brain. For example, Pippard and Eilam found that some clinics did not give their clients oxygen, thus risking anoxic brain damage and that nearly a quarter of clinics were using obsolete shock machines. These delivered an untimed shock, resulting in clients receiving excessive amounts of current (Pippard and Eilam, 1981; Editorial, 1981). The most recent update confirms that not much has changed (Pippard, 1992). The Royal College of Psychiatrists' guidelines also recommend bilateral ECT (Freeman, 1989).

## how ECT works

ECT is presented in current psychiatric literature in an edited form. The rationale for ECT is often that the electrical current rearranges brain chemistry positively. Another explanation given has its roots in psychoanalytic terms, suggesting that individuals benefit when they get in touch with their need to punish themselves. Current psychiatric literature highlights that most of these theories are without supportive data and identifies that the mechanism of ECT is unknown. The rationale for the continued use of ECT is that many medical treatments have been essentially helpful, despite the medical profession's lack of knowledge about the way in which they work.

The truth about how ECT actually does work is always omitted in current psychiatric publications. Electro-convulsive therapy is effective by damaging the brain. Advocates of ECT were the first to identify this. It is only more recently that this has been presented in a positive way by the insistence that this damage is negligible and transient, a concept which is hotly disputed by many people who have undergone ECT.

ECT has been repackaged in a manner designed to censor public opinion. Empirical research, based on adequate methodological data, does not exist to back up its continued use. However, psychiatrists continue to quote from obsolete and inaccurate studies misrepresenting the original outcomes to suggest positive conclusions.

## psychiatry and ECT maintenance

Many psychiatric treatments, for example major tranquilizers, lobotomy and ECT, reduce an individual's potential to experience emotion: it is acceptable to stuporise people, rather than to enable them to get in touch with their own distress.

For some people long term treatment can become a reality, although not a necessity. In an overstretched staff team, the frustrations of managing a difficult, self-destructive or impulsive individual can often lead to the introduction of an aggressive ECT regime. This renders the person passive, docile, predictable and easily manageable. Staff can misinterpret this lack

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of affect as an improvement in the person's psychological state. It is at a great personal cost to the individual that psychiatric teams often meet their own goals.

ECT is a way in which psychiatrists, families and sometimes clinical teams deal with challenging and troublesome people. It is surely wrong to add force to the administration of ECT, though sectioning people under the Mental Health Act remains an option. People who are about to undergo ECT receive an abundance of information based on psychiatric literature, which fails to acknowledge the risks involved. They are often not given a clear picture of the risk of death, permanent brain damage and loss of memory (Hughes, Barraclough and Reeve, 1981). With this information, people are coerced into taking a voluntary decision to receive ECT.

## the repackaging of ECT

Although many studies have been undertaken to evaluate ECT, few have reached the minimal requirements necessary to establish scientific validity. With the limited material available to support the therapeutic use of ECT, the underlying basis for the widespread use of this intervention should be explored.

One explanation is that the way in which ECT is documented presents an imbalanced view. Although clinical evidence exists to demonstrate that ECT damages the brain. For example, "Generalised EEG-slowing both regular and irregular in morphology is the most prominent electro-physiological correlate of ECT. It is a non-specific abnormality consistent with diffuse cortical and sub-cortical impairment" (Weiner, 1980). Weiner concluded that although the slowing had usually returned to baseline levels by three months, in some people it can persist for longer. This information is rarely quoted.

In contrast, leading texts promote ECT as a safe treatment, devoid of serious side effects. The uniform view is dismissive of many specific case histories in which extensive side effects are noted. For example, a survey (Freeman and Kendall, 1980) found that 30 per cent of shock victims reported permanent memory impairment following treatment. In another example (Frank, 1990) "Each shock treatment was for me a Hiroshima. The shocking destroyed large parts of my memory including the two-year period preceding the last shock". In addition, alternative literature which suggests that ECT is harmful is either ignored, or dismissed as a campaign by a minority group with extreme views.

Significantly, an overview of psychiatric literature demonstrates that the method of presenting ECT has changed. Early texts included many references to the incidence of brain damage associated with ECT. For example, Bini (1938) suggested that the "favourable transformation of the morbid psychic picture in schizophrenia was brought about by very severe and irreversible alterations in the nervous system". Fink (1958) wrote that "the biochemical basis for convulsive therapy is similar to that of cranial cerebral trauma"; Hirsch Gordon achieved in plain English, "imbecility replaces insanity" (1948).

Many articles documenting long-term impairment, personality changes and brain damage following ECT appeared in psychiatric journals in the 1940s and 1950s. In the 1960s the neurologist Symonds stated, "after a series of bi-weekly treatments the clinical picture is like that of a more severe head injury" (Symonds, 1966). In addition Lewis admitted that electro shock certainly produced tissue damage in the brain and concomitant impairment of mental functions including perception and capacity to learn (Lewis, 1967). Neither Symonds nor Lewis were anti-psychiatrists.

An example of the change in the way that ECT is promoted is the "disappearing memory loss trick". In the first (1946) edition of *Psychiatry: theory and practice for nurses*, this quote appears: "There is a possibility of damage to the brain substance. Furthermore convulsions not only result in amnesia for the fits, but also enlarge memory gaps which may extend far back into the past". By the fifth edition of the same book in 1962 the possibility of damage to the brain substance had become "remote" and a disclaimer had been added: "most of these memory gaps are eventually closed" (Beccle, 1946).

Advocates of ECT introduced the contra-indications of brain damage and many sources refer to "the need for careful consideration when deciding upon ECT as a treatment for clients who rely on their memory for employment". Herskovitz, writing in the *Philadelphia Psychiatric Society Journal* in 1943, reported finding memory deficits among 174 people treated with ECT "to be rather general and prominent. Therefore patients whose occupation requires intellectual ability are selected for treatment with caution" (quoted in Frank, 1990). Current texts often fail to report the negative consequences of ECT although adequate research to dismiss the possibility of permanent memory loss does not exist.

ECT results in acute brain syndrome. Sament, a neurologist, published his views on the brain-damaging effects of ECT in a letter to the editor of a professional journal, "I have seen many patients after ECT and I have no doubt that ECT produces effects identical to those of a head injury" (quoted in Frank, 1990).

Salzman (1947) investigated what he termed the "malignant effects of shock therapy on the personality of the individual". He discovered that "the most persistent impression obtained is that shock patients show a picture resembling the post lobotomy syndrome". McClelland (1988) believes that the changes Salzman observed in shock patients—disinhibition, euphoria and blunting are the classic signs of injury to the frontal lobes of the brain.

The debate remains about whether the damage is permanent, and if so, what is the incidence and severity? Anderson noted that every psychiatrist has seen such (post shock) amnesia last for years after treatment (1951). Memory impairment is a recognised side effect of ECT (Freeman, 1989). Valentine (1968) gave the following description of memory loss: "a patient with marked ECT amnesia is likely to have substantial memory loss for the sequence of events immediately prior to treatment and also a very partial and scattered amnesia particularly for names, people and events extending backwards in time for many months". Current psychiatric literature frequently does not address if this damage is permanent.

Such selective reporting invites the interpretation that ECT has been repackaged, and is now strategically promoted in a manner designed to avoid the censure of critical public opinion. This misrepresentation of data is created by the existence of poor standards to monitor ECT. In the absence of accurate data, results from invalid studies are now quoted indiscriminately as fact.

For example, a study completed by Freeman and associates in 1978, is frequently quoted to support ECT. The study involved 40 clients who were randomly assigned to two groups. One group had the first two treatments of a course of ECT replaced by placebo. Despite the design protocol of this study, Freeman then administered ECT to both groups. The study concluded that ECT is more effective than placebo in the treatment of depression. In reality this clinical trial is invalid because Freeman, "felt it ethically unjustified to withhold for a complete course a treatment generally regarded to be effective" (Freeman, Basson and Crighton, 1978).

Lambourn and Gill (1978) completed one of the first contemporary trials to evaluate ECT. They concluded that "in this group of patients suffering from depressive psychosis, six brief pulse unilateral ECTs did not produce a significantly therapeutic effect when compared with a simulated procedure". Gangadhar et al. (1982) completed the only trial to give the controls an antidepressant drug, in conjunction with a simulated shock. At the end of the trial there was no difference between the shock or the control group. Psychiatrists have taken these not wholly impressive results as proof of the effectiveness of ECT.

Evaluations which are valid, suggest that ECT is of value in the treatment of severe depression, which is characterised by the risk of suicide (Leicester trial, 1984; Nottingham trial, 1985). The Northwick Park double blind study in 1980 (regarded by many as the most thorough investigation of ECT yet) measured follow-up improvement in relation to the effectiveness of ECT. It concluded that although people receiving ECT were significantly better in the short term, no differences were shown between the control group and the ECT group at one month and six month intervals. Analysis of the results confirmed that with intensive nursing and medical care, people can recover from the most severe depression without receiving ECT.

Claims in mainstream psychiatric literature that ECT can prevent suicide are quoted as fact. Statistical evidence to support this is unavailable. Furthermore, admission to psychiatric institution can increase the risk of suicide (Frank, 1990).

## USE OF ECT

Many psychiatrists try to convince people that abuse or overuse of ECT is a thing of the past, that today there is agreement among psychiatrists regarding its use, and that it is only used as a treatment for severe "depressive illness". This is not the case.

The average number of treatments in a course is about 6.5 (although there are still some people getting "maintenance" shock) so about 20,000 people a year were getting ECT in the 1980s. Since the Department of Health

started keeping a record in 1979 the total number has fallen by about 30 per cent. However, these figures are for NHS patients only, and do not include the people getting ECT in private hospitals. (In some countries, for example USA and Italy, ECT is used more in private hospitals than in state hospitals.)

Although modern texts refer to ECT as "the standard treatment for depression in the 1950s", a psychiatrist at that time estimated that ECT was being given to about 20,000 people a year (Jarvie, 1954), approximately the same number as today. This may well have been an underestimate, as he was counting only the number of new admissions, but even so, it raises an awkward question. Why didn't the introduction of antidepressant drugs at the end of the 1950s do more to reduce the use of ECT?

The figures for the Regional Health Authorities show wide variation between regions, from 125 treatments per 100,000 population in Oxford to nearly 400 in Wessex (1987/88), and figures for the districts within the RHAs show even greater variation. In the absence of any demographic explanations, these figures confirm that there is still wide disagreement about the usefulness of shock.

A study of individual consultants in one region (Gill and Lambourne, 1981) demonstrated that approximately one third of shock is given where 85 per cent of consultants would not use it. Further, 15 per cent of consultants are responsible for 40 per cent of shock. Gill and Lambourn concluded that their survey "throws up some very embarrassing questions which remain to be answered".

What is the difference between psychiatrists who use shock more than 20 times a month and those who use it less, or not at all? One survey (Pallis and Stoffelmayr, 1973) found that psychiatrists who favoured physical treatments tended to have conservative social values and be tough-minded. They concluded that their findings raised two important issues (which, like Gill and Lambourn's embarrassing questions, have been ignored ever since):

*Firstly, psychiatrists should realise that there is an association between the social attitudes they hold and the treatment they recommend for their patients. Secondly, statements which are frequently made with some ideological fervour about the value of different treatment should perhaps be viewed with more caution. It is likely that if treatment orientation is embedded in general social attitude, discussion about the advantages of the various treatments will not be guided by factual arguments.*

There are very few psychiatrists in Britain who never use shock. Pippard and Ellam (1981) completed a study where only one per cent were wholly opposed to the use of ECT, and 97 per cent of clinical consultants working at least partly in adult psychiatry/psychogeriatrics regarded ECT as "at least occasionally useful...". As ECT is always prescribed by senior doctors (consultants and senior registrars) but usually administered by junior doctors, psychiatrists will give a lot of people ECT before they can make decisions about whether or not to prescribe it. R.A. Johnson, a psychiatrist who publicly criticised shock in the 1970s described the problems he faced

when he refused to prescribe ECT. "When eventually I was in a position to refuse to give any more I was blacklisted from further promotion in a psychiatric career and was obliged to transfer to general practice."

The Royal College guidelines (Freeman, 1989) endorse ECT as a treatment not only for "severe depressive illness" but also for "less severe depressive illness", and as having a place in the treatment of mania, anorexia and schizophrenia (research to support the guidelines does not exist, nor are they a legal document).

In 1984 the medical newspaper *Pulse* reported that a Dr Woodland had for years used Electroconvulsive Therapy on his patients in general practice. According to the report, he had given more than 10,000 treatments to his patients in Paignton, Devon, and then in London. At some point one in seven of the patients on Dr Woodland's list were receiving ECT as treatment. Dr Woodland claimed it helped patients suffering from arthritis, indigestion, irritable bowel syndrome and aphthous ulcers. He admits that he did not always obtain informed consent from his patients. Can these actions be justified? Many doctors think not. Dr Woodland has addressed meetings where audiences walk out. He has described his work as "research" and claims that stricter controls on research would "limit basic freedoms to practise medicine". One can conclude that psychiatry presently is beyond the law.

### elderly people

There has been a dramatic increase in the number of elderly people who receive ECT. In the 1940s only four per cent of people given ECT for depression were over 66 (Karagulla, 1950); today half are over 65 years of age. Doctors claim that this group respond well to ECT and do not tolerate antidepressant drugs.

Is ECT-incurred brain damage, then, to be termed senility?

### ethnic minorities

People from ethnic minorities appear to be over-represented among people who have received ECT when the diagnosis is schizophrenia, but not among people being treated for depression (Fernando, 1988).

### women

Women form the majority of shock patients, with a ratio of 1: 2.27 (Pippard and Ellam, 1981). Professor E. Paykel (*Daily Telegraph*, 31 January 1990) states that women suffer from depression more than men because life is more difficult for women. If this is so then ECT can be viewed as a punitive, oppressive, rather than curative, intervention which stops women complaining about their difficult lives.

### children

Some psychiatrists administer ECT to children. This has constituted criminal assault (Baldwin and Jones, 1990). The youngest child reported to have received ECT was 34.5 months old (Bender, 1974).

### worldwide

ECT is administered to people in Great Britain, Scandinavia and many third world countries. It is less available in France, Germany, Holland and Italy (Fink, 1984).

### in conclusion

In a changing health care system all professional services are required to demonstrate effectiveness. This is a major change for the medical profession which has historically enjoyed autonomy and not been subjected to such intense scrutiny. Society places tremendous pressure on doctors to "provide cures for all ills" and it is difficult for the medical profession to disclose a lack of advanced techniques in some clinical areas.

Within psychiatry it is not surprising that with the introduction of clinical audit some psychiatrists are now being confronted with their own lack of adequate training and professional skills to deal with complex human dysfunction. Psychiatrists threatened by their own professional limitations feel out of control and can often resort to using machinery and invasive physical techniques to achieve results. In some instances, as the psychiatrist's personal power is restored even bad results seem better than no results at all. Advocates of ECT will give many explanations to rationalise its continued use. ECT has been so strategically repackaged that other professionals often tolerate and condone the use of ECT even with the most controversial client groups. Recently some of the most radical and frightening ideas to surface have been expressed by Max Fink (Fink, 1990). His recommendations have no scientific basis but appear in mainstream literature. Fink recommends the use of ECT not only in major depressive disorders but especially in those disorders marked by psychosis, melancholia, mania, catatonic states and Parkinsonism. He dismisses the medical risks associated with ECT and claims it is now safe to administer it with people previously considered to be in a high risk category. For example, people with heart/lung conditions, osteoporosis, brain pathology such as tumours, multiple sclerosis and even in pregnancy. As previously noted the same Fink in 1958 wrote that "the biochemical basis for convulsive therapy is similar to that of cranial cerebral trauma". Today he completely ignores that ECT works by damaging the brain and recommends maintenance ECT for people who relapse quickly. In fact Fink is also of the belief that manufacturers of ECT devices should design a machine with higher energy levels, thus advocating more damage to the brain.

Little has changed since 40 years ago when one psychiatrist wrote about constantly seeing:

*...patients who have some serious trouble, some constant anxiety or fear, who have been given insulin, convulsions (shock treatment), prolonged narcosis or what not, yet no-one has taken them aside and treated them as human beings... These physicians who rush to apply mechanical treatments without proper psychological investigations are demonstrating their own ignorance*

and maltreating their patients. Man (sic) is worthy of better treatment than a car or wireless set, and those who do not give it to him are betraying their trust (Allen, 1949).

Today psychiatrists' accounts of ECT seldom deviate from the standard safe-and-effective-life-saving version, but early commentators were more candid:

*This method of treatment has several advantages which are generally agreed upon. It is cheap. It can be administered with limited help within a short time, and many cases can be treated concurrently, which may make it possible to continue it even in wartime... results are usually obtained quickly, if not lastingly (Nussbaum, 1943).*

Nussbaum went on to point out that, even if patients benefited little from shock, the treatment nevertheless brought relief to nursing staff and gratitude from relatives.

## References

- Allen, C. (1949) *Modern discoveries in medical psychology*. London: Macmillan
- Anonymous (1872) A review of J.C. Browne (ed.) *The West Riding Lunatic Asylum Medical Report 1872. Practitioner*, 9, 362-364
- Anderson, E.W. (1951) Mental diseases: physical methods of treatment. *Medical Annual*, 173-183
- Baldwin, S. and Jones, Y. (1990) ECT and children. *Changes*, 8(1), 30-39
- Beckle, H.C. (1946) *Psychiatry: theory and practice for nurses*. London: Faber
- Bender, L. (1974) *One hundred cases of childhood schizophrenia treated with electric shock*. Transactions of the American Neurological Association, 72nd annual meeting.
- Berke, J. (1979) *I haven't had to go mad here*. Harmondsworth: Penguin
- Bini, L. (1938) Experimental researches on epileptic attacks induced by electric current. *American Journal of Psychiatry*, 172-174
- Breggin, P. (1989) As stated in paper given at *Advocacy Conference*, New York
- Carletti, U. (1956) The great physiodynamic therapies. In A.M. Sackler et al. (eds) *Psychiatry: an historical reappraisal*. New York: Harper
- Fernando, S.J.M. (1988) *Race and culture in psychiatry*. London: Croom Helm
- Fink, M. (1958) Effects of anti-cholinergic agent, diethazine on EEG and behaviour: significance for theory of convulsive therapy? *Archives of Neurology and Psychiatry*, 80, 380-387
- Fink, M. (1984) Meduna and the origins of convulsive therapy. *American Journal of Psychiatry*, 141, 1034-1041
- Fink, M. (1990) Electro convulsive therapy. *Current Opinion in Psychiatry*, 3, 58-61
- Frank, L.R. (1990) Electroshock: death, brain damage, memory loss and brainwashing. *Journal of Mind and Behaviour*, 11(3-4), 489-512
- Freeman, C.P.L. (1989) *The practical administration of electroconvulsive therapy*. London: Royal College of Psychiatrists
- Freeman, C.P.L., Basson, J.V. and Crichton, A. (1978) Double-blind controlled trial of ECT and simulated ECT in depressive illness. *Lancet*, 1, 738-740
- Freeman, C.P.L. and Kendall, R.E. (1980) ECT: 1. Patients' experiences and attitudes. *British Journal of Psychiatry*, 137, 8-16
- Gangadhar et al. (1982) Comparison of ECT with Imipramine in endogenous depression, a double blind study. *British Journal of Psychiatry*, 141, 367-371
- Gill, D. and Lambourn, J. (1981) The indications for ECT: a profile of its use. In R.L. Palmer (Ed.) *Electro-convulsive therapy: an appraisal*. Oxford: OUP
- Gordon, H.L. (1948) Fifty shock therapy theories. *Military Surgeon*, 103, 397-401
- Hughes, J., Barraclough, B.M. and Reeve, W. (1981) Are patients shocked by ECT? *Journal of the Royal Society of Medicine*, 74, 283-285
- Jarvie, H.F. (1954) Prognosis of depression treated by electric convulsion therapy. *British Medical Journal*, 132-134
- Johnstone et al. (1980) The Northwick Park ECT trial. *Lancet*, 20/27 December
- Karavalla, S. (1950) Evaluation of electric convulsive therapy as compared with conservative methods of treatment in depressive states. *Journal of Mental Science*, 96, 1060-1091
- Lambourn, J. and Gill, D. (1978) A controlled comparison of simulated and real ECT. *British Journal of Psychiatry*, 133, 514-519
- Lewis, A. (1967) Disorders of nervous system integration and adaptation. In P.B. Boeson and W. McDermott (eds) *Cecil Textbook of Medicine*. Philadelphia: W.B. Saunders
- McClelland, R.J. (1988) Psychosocial sequelae of head injury: anatomy of a relationship. *British Journal of Psychiatry*, 153, 141-146
- The Nottingham ECT Study. A double blind comparison of bilateral, unilateral and simulated ECT in depressive illness. *British Journal of Psychiatry*, 146, 520-524
- Nussbaum, K. (1943) Observation on electric shock treatment. *The Psychiatric Quarterly*, 17, 327-336
- Pallis, D.J. and Stoffelmayr, B.E. (1973) Social attitudes and treatment among psychiatrists. *British Journal of Medical Psychology*, 46, 75-81
- Pippard, J. (1992) Audit of electro convulsive treatment in two National Health Service regions. *British Journal of Psychiatry*, 160, 621-637.
- Pippard J. and Ellam L. (1981) Electroconvulsive treatment in Great Britain. *British Journal of Psychiatry*, 139, 563-568
- Salzman, L. (1947) An evaluation of shock therapy. *American Journal of Psychiatry*, 103(5), 669-679
- Strabaneck, P. (1986) Convulsive therapy: a critical review of its origins and value. *Irish Medical Journal*, 79(6), 157-165
- Symonds, C.P. (1966) Disorders of memory. *Brain*, 89, 625-640
- Valentine, M. et al. (1968) A comparison of techniques in electro-convulsive therapy. *British Journal of Psychiatry*, 114, 989-996
- Weiner, R.D. (1980) The persistence of ECT induced changes in the electroencephalogram. *Journal of Nervous and Mental Disease*, 168, 224-228

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