Lost and Found: Will ECT Survive?

Prof Dr Edward Shorter Department of Psychiatry Faculty of Medicine University of Toronto Presentation for: NACT meeting, Tallinn, 23-24 May 2018

ECT: Is there trouble ahead?

 Thomas Gresham was a sixteenth-century English financier who formulated the famous law later named after him:

• "Bad money drives out the good."

• Trash will always triumph, in other words.

Gresham's Law

• Gresham's law may be applied to psychiatry:

 "Bad diagnoses drive out the good." (because they are heterogeneous and enlarge the pharmaceutical market)

• "Bad treatments drive out the good." (because they can be patented)

Here is an example of a bad treatment driving out a good one.

Lithium is **a good treatment**, among the most effective treatments for mood disorders, certainly for mania.

Lithium has been largely driven out by the "mood stabilizers."

[Here "Crazy Well" Texas in the 1920s, where the lithium in the water offered a benefit in "nervousness."

Lithium is among the oldest drugs in psychiatry.



Top, H. H. Milling's Mineral Wells sanatorium (author's collection). Bottom, promotion for the Crazy Well and a sample of the product labeling (A. F. Weaver, Mineral Wells).

Lithium is almost certainly more effective in the longterm treatment of mania than risperidone (Risperdal)

Yet Risperdal has become a multi-billion dollar drug, and today's residents, in North America, typically do not learn about lithium.



The term "depression" has driven out many effective treatments . . .

... And replaced them with a variety of agents, said to be "antidepressants," that may have a physiological effect on the body but not a pharmacological effect.

[Here, "Depression News." NB all the agents that seem to be "antidepressants." There are so many that we need a newsletter to keep track . . .

The efficacy of TCAs and ECT will surely be lost in a news-storm that emphasizes BoTox and baby aspirin. DEPRESSION NEWS

FEBRUARY 8, 2018

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DEPRESSION

GRAPE-DERIVED COMPOUNDS SHOW PROMISE AS FUTURE DEPRESSION TREATMENT

Two natural compounds derived from grapes could be developed into a new treatment for depression, scientists report in a study published online in *Nature Communications*.

Read the full story >

Additional Stories

DEPRESSION

Can Depression Be Treated With a Daily Baby Aspirin?

Psych Congress cochair Charles Raison, MD, discusses whether a daily baby aspirin is an appropriate treatment for patients with depression, given the link between depression and inflammation.

DEPRESSION

Trivia: How Do Repeated Low-Grade Infections Affect the Risk of Depression?

A recent nationwide, population-based cohort study examined the relationship between inflammation caused by mild infections and clinical depression. What did the researchers find?

DEPRESSION

Botulinum Toxin Alleviates Depression in 'Real-World' Study

Injecting botulinum toxin into a section of the forehead in a private practice setting significantly improved depression scores for a group of men and women, a study published in the *Journal of Psychiatric Practice* found.

DEPRESSION

Brain Changes From Cannabis Use May Lead to Emotional Disturbances

Chronic cannabis use seems to alter resting-state brain activity, which may explain the negative emotionality and higher risk of psychosis linked with the habit, according to a new study.

Here is an example of a bad *diagnosis* driving out a good one.

Melancholia was a good diagnosis.

In 1980, with DSM-III, "major depressive disorder" drove out melancholia, and collapsed the historic distinction between the two entirely separate mood disorders: melancholia and neurasthenia.

This was a historic loss because the various separate depressions had different treatments and prognoses:

---amphetamine, benzodiazepines and SSRIs for neurasthenia ---TCAs and ECT for melancholia

"MDD" doesn't actually exist, and represents a bad diagnosis driving out several good ones.



. 4: Melancholie mit Stupor bei einer jugendlichen Person.

Another example: "bipolar disorder" is becoming the monster that ate Psychiatry.

This is not Kraepelin's "manicdepressive insanity" [here], but the "bipolar disorder" of Karl Leonhard in 1957.

Leonhard thought there was a *psychopathologica*l difference between unipolar depression and the depression of bipolar disorder.

This set the stage for the emergence of "bipolar disorder" as a *separate disease*, with its own therapeutics.

And for a reluctance to use antimelancholic agents for fear of flipping the patients into mania.



So "bipolar disorder" has expanded steadily.

This is "pediatric bipolar disorder"



But we have a treatment for today's "bipolar disorder.

"Mood stabilizers" have been on the market since the 1970s.

"How long will her stability last?"



Forever!

If you prescribe "lamo" (Lamictal).

Look how her life has changed with Lamictal!

But I think it would be fair to say, that in North America there are some older clinicians who are uneasy about "bipolar disorder" and prescribe the traditional, proven antidepressants for the depressive phase of "bipolar disorder."



So, these are examples of bad diagnoses and indifferent treatments driving out good ones.

How about ECT? What dangers does it face?

What perils are these men looking at?

Giorgio Petrides, Max Fink, Charles Kellner at the APA, NYC, May 2018

They seem happy!

What dangers lie on the road ahead?



What's going on in ECT now?

Scandinavia leads the world in ECT. Sweden, Denmark, Norway in the top five.





Right now, we're at a moment of victory with ECT. But will the crown of victory be ripped from our heads?

Caution?

... I am indeed crying "caution" in a moment of victory.

The comeback today of ECT has been extraordinary.

Here are sales of the Thymatron device, 1985 to 2016 (and estimated to 2020).

By 2020, sales will be ten times what they were thirty years ago.

Thymatron sales increase steadily.

Period	Worldwide	Europe (+ Turkey)
1985-1995	268	268
1996-2000	452	184
2001-2005	668	216
2006-2010	986	318
2011-2015	1,298	312
2016-2020 (estimated)	3,560	780

Germany had been highly resistant to ECT.

ECT = "Nazi Terror Death" etc.

ECT in Germany: Where we are now.

2017: "reintroducing ECT after more than four decades of neglect"

So, the corner – even in Germany – has been turned.



ECT in Italy

Once seen as a barbarous "medieval" treatment.

Figures such as Franco Basaglia (1924-1980) at the Gorizia asylum led the attack on the biological therapies, which Basaglia and friends found difficult to reconcile with Leftist political doctrine.

No ECT for you patients! (They're doing a little dance.)

"La Legge Basaglia [the sense of it was anti-ECT]: Thirty years of civilized psychiatry."



ECT is now staging a comeback in Italy.

In 2007, led by Andreas Conca and the late Anastasios Koukopoulos, among others, the Associazione Italiana per la Terapia Elettroconvulsivante was founded.

It has grown rapidly in membership.

ARTICOLO DI AGGIORNAMENTO UP-DATE ARTICLE

Terapia elettroconvulsivante. Razionale per lo sviluppo di future linee guida da parte dell'Associazione Italiana per la Terapia Elettroconvulsivante (AITEC)

Electroconvulsive therapy. Rationale for the development of future guidelines by the Italian Association for Electroconvulsive Therapy (AITEC)

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Summary

Background

Many guidelines describe the theory and practice of electroconvulsive therapy (ECT). From a scientific and clinical point of view, ECT is an effective treatment for severe depressive episodes and depressive syndromes resistant to other treatments. Furthermore, ECT has been proven useful in schizophrenic, schizoaffective disorders and in manic episodes resistant to other treatments.

ECT has an important indication in malignant catatonia. It causes transient adverse effects. Of special importance for the patient are memory disturbances which sometimes persist after the end of the treatment. So, with successes like this, what could go wrong?

1. The rise of competing "stimulation" therapies

Is ECT about to be lost?

Pushed aside by newer techniques, such as brain stimulation?

Hmmm... here VNS (Vagal Nerve Stimulation). How many of you think VNS will relieve melancholia, mania, or catatonia?

Health & wellbeing

Hitting the right nerve: the electronic neck implant to treat depression

For people with severe depression who don't respond to standard treatment, vagal nerve stimulation (VNS) offers new hope



Monday 2 October 2017 06.00 BST



🕖 Neck fix ... the VNS implant sends out weak electrical pulses. Composite: Getty/Guardian Imaging

S teve Collins is a 45-year-old unemployed architect who has been living with severe depression for 15 years. "I'm like a hermit crab hiding under rocks, crouching in dark spaces and only venturing out occasionally; there's no light, no hope, no way in or out. I've been in therapy for years and must have taken at least six different antidepressant drugs. I had ECT (electroconvulsive therapy) and that literally shocked me out of it for a bit, but the depression came back - and the idea of ECT was so shocking for my family. People say: 'Well, at least you haven't got cancer.' But, honestly, I'd rather have almost anything than live like this."

A new type of treatment, vagal nerve stimulation (VNS), may offer hope for people like Collins who don't improve with conventional depression treatment. A

Here Vagal Nerve Self-Stimulation

Do we think this picture will beat ECT?

We probably don't, but there are lots of "stimulation" advocates who think these treatments can replace ECT.



TMS is a significant threat.

The profusion of such patented stimulation treatments is worrisome because their proponents speak of "well tolerated" rather than "efficacious." This is a proxy for saying "ECT will harm your brain."

Getting Better Electrically?

Transcranial Magnetic Stimulation (TMS)

For the past decade TMS has been used by psychiatrists in the U.K., U.S.A. and Canada to treat clinical depression. Focal electromagnetic induction with an insulated coll conducting an electric current is placed on the surface of the packen's scalp. By changing the currents through the coll magnetic fields are generated. Reid et al., 1998 claim that these currents have the capacity to internant and facilitate neuron function. The left prefrontal cortex appears to be an important stimulation site for patients with depression. Several authors suggest that TMS will replace ECT as a treatment of choice for depression.





Subject treated with a Cadwell water cooled TMS device, c. 1980s, top, Thompson's electromagnetic stimulator, 1910, above, and an early electrotherapeutic device, 1786, right. Hasey, 1999, suggests that "Better understanding of the combined use of pharmacotherapy with TMS may allow more rapid and longer-lasting improvement in psychiatric conditions and in neurological diseases such as epileose and Parkinson's disease."

Magnetic stimulation of the skull for thempeutic purposes is not a new idea.

"D'Assorval, 1896, and Thompson, 1910, built large electromagnetic stimulators but they could not produce magnetic fields intense enough with the available technology." (Hasey, 1999)

r. 8

Yet the evidence says that TMS does not beat ECT

We may be experiencing with TMS and the rest the commercial hype, on behalf of patent-protected treatments, that we experienced with the launch of the SSRIs. And we know how that story came out.

A Randomized, Controlled Trial With 6-Month Follow-Up of Repetitive Transcranial Magnetic Stimulation and **Electroconvulsive Therapy for Severe Depression**

Article

Savitha Eranti, M.D.,	Michael Philpot, F.R.C.Psych.	
M.R.C.Psych.	Sophia Rabe-Hesketh, Ph.D.	
Andrew Mogg, M.R.C.Psych.	Renee Romeo, M.Sc.	
Graham Pluck, Ph.D.	Kenee Komeo, w.sc.	
	John Rothwell, Ph.D.	
Sabine Landau, Ph.D.		
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Rick Purvis, B.Sc.	Declan M. McLoughlin, Ph.D.,	
Richard G. Brown, Ph.D.	M.R.C.P.I., M.R.C.Psych.	
actuard S. Brown, Phile	initia en al a a a a a a a a a a a a a a a a a a	
Robert Howard, M.D., M.R.C.Psych.	Objective: Repetitive transcranial mag- netic stimulation (rTMS) has been re- ported to be as effective as electroconvul- sive therapy (ECT) for major depression. The authors conducted a multicenter ran- domized, controlled trial to test the equivalence of rTMS with ECT.	
Martin Knapp, Ph.D.		
	Method: Forty-six patients with major	

th major depression referred for ECT were randomly assigned to either a 15-day course of rTMS of the left dorsolateral prefrontal cortex (N=24) or a standard course of ECT (N=22). The primary outcome measures were the score on the 17-item Hamilton Depression Rating Scale (HAM-D) and the proportion of patients with remissions (Hamilton score, ≤8) at the end of treatment. Secondary outcomes included mood self-ratings on the Beck Depression Inventory-II and visual analogue mood scales, Brief Psychiatric Rating Scale (BPRS) score, and both self-reported and observer-rated cognitive changes. The patients were followed up after 6 months.

Results: HAM-D scores at the end of treatment were significantly lower for ECT, with 13 patients (59.1%) achieving remission in the ECT group and four (16.7%) in the rTMS group. However, at 6 months the HAM-D scores did not differ between groups. Beck scale, visual analogue mood scale, and BPRS scores were lower for ECT at the end of treatment and remained lower after 6 months. Self- and observerrated cognitive measures were similar in the two groups.

Conclusions: rTMS was not as effective as ECT, and ECT was substantially more effective for the short-term treatment of depression.

(Am | Psychiatry 2007; 164:73-81)

Here is the latest! Neuromodulation.

This looks just so advanced!

Do you think this will beat ECT?

On August 24-26 2018 in New York City join thought leaders from medicine, academia, and industry, for the most dynamic conference on the future of neuromodulation. The joint meeting of the **2018 NYC Neuromodulation Conference and NANS Summer Series** is produced by neuromodec.com and the North American Neuromodulation Society (NANS).



Digital Healthcare + Neuromodulation

The joint NYC Neuromodulation and NANS Summer Series conference spans the continuum or healthcare technologies. Wearable technologies and sensors, online platforms and apps, VR, connected devices, and machine learning and Al driven therapy design are integrated into all aspects of neuromodulation. Leaders from industry, academia, and medicine will clarify the immediate applications and frontiers of digital healthcare in neuromodulation. Topics include: use of wearables and apps in clinical trials and treatment, search for optimization treatment and individualized therapy, and enhancing patient expertness and clinician interactions.

Will ECT be lost to "brain tickling"?

 No, it won't be, because ECT does something no other therapy can do: relieve seriously ill patients swiftly and reliably.

• Neuromodulation doesn't do that.

2. The second headwind that ECT struggles against is antipsychiatry. ("Warning . . .)



Antipsychiatry feeds on the cultural prejudices of the population against ECT (often stoked by Scientology). This Scientology ad appeared in a major metropolitan newspaper in North America.



This anti-ECT prejudice is overwhelming in countries like Italy and France, strong in Scandinavia.



But Sweden too. . .

Here is an apparent example: An important Swedish study

Brus, O., Cao, Y., Gustafsson, E., Hultén, M., Landen, M., Lundberg, J., Nordanskog, P., Nordenskjöld, A. (2017). *Self-assessed remission rates after electroconvulsive therapy of depressive disorders.* European Psychiatry, 45, 154-160.

doi:10.1016/j.eurpsy.2017.06.015
The Brus study: plus's

- A large N (>1600)
- Careful psychopathological assessment

But do these Scandinavian studies have a generic fault?

- Namely, fear of "memory loss."
- In Scandinavia one hears this mantra constantly: "memory loss, memory loss."
- But this is losing sight of the therapeutic objective: the main thing is getting the patients better, not protecting their memories.

This is an aside . . .

• In any event, the consensus in the field is that memory effects of ECT are mild and transitory.

 (It's like obsessing about weight gain in second-generation antipsychotics like clozapine: These are not weight-control drugs. The point is to get the patients better.) Back to the Brus study: Possible consequences of the memory-loss mantra: They used less effective forms of ECT (supposedly "memory-sparing")

- ---RUL
- --- UBP (ultra-brief pulse) in one-third
- ---seeing ECT as a "singular" therapy: one brief course of 6 treatments, then stop --
- Fink: "This seems much like an antibiotic for an infection, but the practitioner has chosen a minimally effective antibiotic." Fink emphasizes: ECT is not a quick fix; it is much more like dialysis for kidney failure. "C-ECT is essential."

And the Brus results were not optimal:

- ---64 percent had rapid reductions in MADRS scores for the psychotic sample, 38 percent for the non-psychotic.
- ---In properly conducted ECT (bitemporal, 0.5-1.5 ms pulses, continuation-ECT), 90 percent of the psychotic depressions (melancholia) should remit, 80 percent of the non-psychotic. (bipolar as well as unipolar)

Are these "political" results?

 Is the science being driven by politics and by the folkloric prejudices of the culture?

One more Swedish example!

Many Syrian refugee children in Sweden have fallen ill.

They go into a kind of catatonic stupor. Fear is said to be the major psychological component of the stupor.

This probably is some kind of catatonia, as opposed to the unusual diagnoses posed by some Swedish psychiatrists, such as "Pervasive Arousal Withdrawal Syndrome" (PAWS)

Let's not worry about diagnosis. How about treatment? Lorazepam and ECT would be the two standard anticatatonic treatments.



st the will to live. "They are like Snow White," a doctor said. "They just fall away from the world."

PHOTOGRAPHS BY MAGNUS WENNMAN

ECT is highly effective in catatonic stupor.

ECT is certainly known in Sweden. So have these children been given a trial of ECT?

Neither they nor any other children in Sweden receive ECT. A Swedish psychiatrist writes, in a recent personal communication:

"The Scandinavian shyness for ECT is based on the fact that this kind of treatment is but little esteemed by the Swedish public – and the fact that there is no experience of using this at all in child psychiatry."

Internationally, ECT is becoming the standard of care in pediatric psychiatry.



Similar results in Germany: great fear among the populace.

- In 2017, JC Müller et al described their difficulties in reintroducing ECT into the Hamburg-Eppendorf Medical Center (where ECT was last used during WWII). "There was strong resistance on the part of non-medical staff and patient representatives mainly based on misinformation."
- Müller JC et al., abstract, "Change Management in Psychiatry: Reintroducing ECT After More than Four Decades of Neglect," *Brain Stimulation*, 10 (2017), 456.

In Canada, we are not immune to wellintentioned but counter-therapeutic resistance

- Here is an email of 14 Dec 2017, from Dr LW, a specialist in pediatric catatonia who often prescribes ECT:
 - "Just got off this call from British Columbia Children's Hospital
- [Child is] Complete disaster
- Put on loxapine and ended up in the PICU [Pediatric ICU] with symptoms of MC [malignant catatonia]
- No response to lorazepam squat [none] even up to 20mg/day not even a glimmer of hope."
- •

.

- "Get this in BC, the local adult hospital is willing to provide the child 3 ECT at weekly intervals [once a week for a total of three!]
- No more
- b/c he is 9, and has autism
- •
- "The ECT provider has no problem treating the child, but the administrators have set this limit.
- How nice.
- in the meantime the child is in 4-point restraints and engages in SIB [Self-Injurious Behavior] attempts 22/24 hours daily."

These are misguided attempts to "protect the children from psychiatry." So, don't think I'm holding Canada up as a paragon. This residual cultural resistance makes people turn to the "stimulation" treatments, even though they're less efficacious.

3. A third threat to ECT: "the banalization of mental illness"

Banalization meaning the massive use of psychotropic drugs – that means the *chronic use*, not just the occasional Ambien for sleep.

(the ad is a joke, but Zoloft [sertraline] is the most commonly prescribed psychotropic in the US, 2016)

The average number of prescriptions per user is 5.8.

This is long-term (chronic) use.

Why would you consider ECT when you have Zoloft?



I want to show you two slides that illustrate the "banalization" of mental illness.

Here is the percent of schoolchildren x country x age who consider themselves "depressed."

- 1. Low at age 11, no gender difference
- 2. By age 13, it's started to grow; a gender difference emerge
- 3. By age 15, it's dramatic: far more girls than boys feel "depressed."
- Look at Norway: one in ten girls "depressed."

And Hungary: one in three!

This is the recruitment basin for the future population of adult depressives. One in three women in Paris, for example.

But maybe these people are really ill?





' See Table 45 in Appendix C.

Austria

Finland

Norway

Poland

Spain

Belgium

Canada

Wales

Scotland

Hungary

Male Female

No, I don't think so.

Here are US data on the percent of the population with "serious psychological distress." Read melancholia. This was a careful epidemiological survey that would rule out the "depressives" who are just unhappy, dysphoric, neurasthenic, whatever. (The NHIS asked: "So sad that nothing could cheer you up?" "Hopeless?" "Worthless?")

The figures for serious psychological distress are **very low**.

Adults 18-44	3.1%
Adults 45-64	4.5%
Adults over 65	2.3%

This is the core population who are candidates for ECT.

But, if the idea arises that "mental illness" is so common that drugs are fine, ECT will be stigmatized. Early Release of Selected Estimates Based on Data From the National Health Interview Survey, January-September 2017

Figure 13.2. Percentage of adults aged 18 and over who experienced serious psychological distress during the past 30 days, by age group and sex: United States, January–September 2017



All these "depressed" people end up on "antidepressants."

Here, one American in 10 currently on "antidepressant" medication.

Females 40-59 (the tall green column on the right): 22.8 percent

That's one in four.

About one in 10 Americans aged 12 and over takes antidepressant medication.

Figure 1. Percentage of persons aged 12 and over who take antidepressant medication, by age and sex: United States, 2005–2008



One in four.

This is the catastrophic side of "banalization," because there is no medical indication for this massive, chronic use of psychotropics.

Psychotropic drug use increases every year in the US. How are you going to convince these people that, for some, there is a benefit in ECT?

Here she is , poor depressed thing.



Here she is again, after Effexor!

Maybe not she, but in her family, among her friends, among her colleagues at work, there will be someone with a melancholic depression.

Yet when these people use the term depression, what they think is "Effexor." It worked so well for Sally.

They don't think convulsive therapy!

This is the heaviest headwind for ECT today.



But it's not just popular culture.

The commercial pressures on behalf of the "antidepressants" are enormous.

Here is a GSK internal document, discovered in litigation, for the benefit (to the company) of Paxil. It shows the sales force how important it was to *minimize* issues associated with discontinuing Paxil. (an SSRI with severe discontinuation symptoms).



ECT is battling against this enormous wall of money.

What is the "bottom line"?

It is that psychiatry will lose yet another highly effective treatment – like the TCAs, the MAOIs, and even the benzodiazepines – if we are not careful.

The advocates of ECT, in Sweden, Germany, Italy and France, must speak out.

Above all in the media. Physicians normally hate and fear the media.

But there are big stakes here.

(This is an example of a non-physician speaking out.)



Dr. Edward Shorter says the benefits of ECT are outstripped by its bad public image, such as its portrayal in the movie One Flew Over the Cuckoo's Nest.

Shock therapy's second coming

Recent studies suggest it's time to let go of the fear and reconsider this effective psychotherapy

by David Hodges

TORONTO | It's with a slight air of contemptuous awe that Dr. Edward Shorter will describe how the climatic ending of the 1975 movie One Flew Over The Cuckoo's Nest pervasively vilified electroconvulsive shock therapy (ECT) as a dangerous, inhumane practice in popular culture and all but signalled the death knell for its clinical use in recent decades.

Indeed, few can forget the Oscar-sweeping film's finale, in which troubled antihero Randle Patrick McMurphy (played by Jack Nicholson)—a recidivist criminal who is sent to a mental institution in the early 1960s—forcibly receives unmodified ECT as punishment for his nonconformist behaviour. A gruesome scene depicts Nicholson's character thrashing and jerking with anguish, see Doctor | page 56 Thank you.