

## Wind Turbine Syndrome: a communicated disease

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### Introduction

The world faces an existential threat from climate change, and the transition to clean, renewable energy is front and centre of global hopes for avoiding some of the worst forecasts. Today, remarkably, Australia has no peak national body or commission for climate change. Yet thanks to the efforts of four cross-bench politicians whose votes were courted by an appeasing government, we do have a Commissioner for Wind Farms. The National Health and Medical Research Council has no dedicated program of research focused on climate change, but it has a dedicated research fund for research on wind-farm disease (NHMRC 2015) which, as we shall see, is demonstrably a non-disease.

This paper considers how this happened and what it says about the erosion of truth in the post-factual era. But, first, some historical context because it is important to understand that what we today call “fake news” has long been part of popular culture in the form of factoids: items of unreliable information that are reported and repeated so often that they become accepted as fact.

Social media has massively facilitated the contagion of factoids. Bogus statements passed around face-to-face social networks in the pre-digital era moved at glacial pace compared with the speed at which claims circulate today.

### Previous Anxieties

New technology has a long history of attracting prolonged, impassioned and often crackpot attacks from those both fearful of and hostile toward mephistophilean artifice that offends the existing order of things. Linda Simon’s history of electricity, *Dark Light: Electricity and Anxiety from the Telegraph to the X-ray* (Simon 2004), notes that, although the discovery of electricity generated excitement and electricity companies worked hard to build the market for electrical power: “more than thirty years after Thomas Edison invented the incandescent bulb in 1879 and soon afterwards installed a lighting system in a business section of lower Manhattan, barely 10 per cent of American homes were wired. Even after the First World War that percentage rose only to 20 per cent.”

One reason for this was that community anxiety about the safety of electricity was widespread, with many news reports being published about the calamities that electricity caused those foolish enough to embrace it. Some also worried about going blind from reading by electric light. On 10 May 1889, *Science* noted:

A new disease, called photo-electric ophthalmia, is described as due to the continual action of the electric light on the eyes. The patient is awakened in the night by severe pain around the eye, accompanied by an excessive secretion of tears. (Simon 2004, xvii)

On 24 September in the same year, the *British Medical Journal* carried a report that the newly popular telephone could cause “telephone tinnitus,” claiming that victims “suffered from nervous excitability, with buzzing noises in the ear, giddiness, and neuralgic pains” (Simon 2004, xvii).

The article contextualised the perils of these new contraptions:

As civilization advances, new diseases are not only discovered, but are actually produced by the novel agencies which are brought to bear on man’s body and mind ... almost every addition which science makes to the convenience of the majority seems to bring with it some new forms of suffering to the few. Railway travelling its *amari aliquid* in the shape of slight but possibly not unimportant jolting of the nervous centres; the electric light has already created a special fear of ophthalmia; and now we have the telephone indicted as a cause of ear troubles, which react on the spirits, and indirectly on general health.

George Miller Beard, the prominent US neurologist, promoted what became the common diagnosis of neurasthenia from around 1869 (Beard 1881). His central thesis was that modern living and the pace of life among the well-to-do was causing a proliferation in a range of progressive symptoms.

Among the causes of all this nervousness, Beard included several new-fangled inventions: “wireless telegraphy, science, steam power, newspapers and the education of women; in other words, modern civilization”.

I am old enough to have lived through evidence-free public anxieties about television sets, electric blankets, microwave ovens, power lines and computer screens.

In recent years, we’ve seen apocalyptic predictions made about mobile phones doing to brain cancer what smoking did to lung cancer. Unfortunately for these forecasters, the incidence of brain cancer has flat-lined for over thirty years while mobile phone use has been almost universal for about 15 years (Chapman et al. 2016)

In 2006, two authors writing in *Electromagnetic Biology and Medicine* (Hallberg and Oberfeld 2006) predicted that by the end of 2017, 50% of the world’s entire population would be suffering from electrosensitivity and hoping to beat a retreat to the world’s ever-retreating electricity-free havens. Alarming, at this Society’s 2017 Forum there were only about 30 days to go.

The most recent panics about “modern worries” include Wifi, smart electricity meters, solar panels on roofs and my focus today, wind turbines.

### Wind Turbines

My new book with Fiona Crichton, *Wind Turbine Syndrome: a Communicated Disease*, is published by Sydney University Press (Chapman and Crichton 2018). I now summarise why it is clear that adverse reactions to wind turbines are case-book examples of psychogenic illness which spread by exposure to negative publicity. I will then focus on the opposition to wind farms in Australia and the forlorn factoid “science” that has driven it.

In our book, we list 247 different diseases and symptoms in humans and animals which have been attributed by wind-farm opponents to wind farms and particularly to sub-audible infrasound. These include lung cancer, skin cancer, haemorrhoids, gaining weight, losing weight and my favourite, disoriented echidnas. But most are classic symptoms of anxiety: things that can happen to you when you are very worried.

From at least the time of Francis Bacon in the 15th century, scholars have observed that people can worry themselves sick. (“infections...if you fear them, you call them upon you”) (Bacon 2005). The nocebo effect, the evil twin sibling of the healing placebo effect, has been documented in a vast research literature in both clinical and real-world settings, including in relation to wind farms (Crichton et al. 2014). When some people are exposed to frightening information about agents or exposures, expectancy effects just as powerful as placebo effects can operate to make people feel sick with worry or anxiety.

However, 25 scientific reviews published since 2003 (Chapman and Simonetti 2015) have concluded that there is very poor evidence for any claim that wind turbines are the *direct* cause of any disease. For any social scientist, there is a herd of uncontested elephants in the room that points unavoidably to a conclusion that “wind turbine syndrome” is a *communicated* disease: you catch it by hearing about it and then worrying about it.

In our book, we summarise what we know:

- A small minority of wind farms have a small minority of residents who claim to be affected. The direct causation hypothesis would predict that *all* wind farms should affect some people;
- The great majority of complaints occur in English-speaking nations, despite the proliferation of wind farms in Europe, China, and many other non-English speaking nations. Somehow, it is a disease that only speaks English?
- Wind farms with a history of being targeted by opposition groups are more “affected” by wind turbine syndrome. Just

6 farms in Australia have had 74% of all complaints (Chapman et al. 2013);

- Those with negative views about wind farms are more likely to report symptoms than those with positive views;
- Those being paid to host turbines very rarely complain, suggesting that the drug “money” may be a powerful preventive;
- Claims about only “susceptible” individuals, like those who get motion sickness while others don’t, struggle to explain why there are apparently no susceptible people in, for example, all of Western Australian or Tasmania, where they are wind farms but no records of health complaints;
- Claims about “over 40” Australian families having to abandon their infrasound affected homes have never been validated, with those making the claims saying that many of the “wind-farm refugees” do not want publicity;
- While some complain of acute effects within minutes of exposure, the first known complaints about wind farms date from 2002, although many wind farms were operational for many years prior to that. So why then were there no reported acute effects occurring prior to 2002?
- Experimental subjects randomised to be exposed or not exposed to negative news footage about wind farm harms and then exposed to infrasound and sham infrasound show that prior exposure to anxiety-producing messages increases reporting of symptoms (Crichton et al. 2014) even to sham infrasound.

We devote a chapter to exploring the eccentric views of several of Australia’s most prominent opponents of wind farms, including what courts have said about their professed expertise. For example, Sarah Laurie, an

unregistered doctor told a South Australian court in 2011 that wind turbines can make people's lips vibrate "from a distance of 10 kilometres away" (Barnard 2014). That's about the distance from downtown Sydney to the northern suburb of Chatswood. Indeed, she believes these vibrations are "sufficient to knock them off their feet or bring some men to their knees when out working in their paddock". The television program "Myth Busters" may find that an interesting claim to put to the test.

Laurie also *claims* some people are "so exquisitely sensitised to certain frequencies that their perception of very, very low frequency is right off the shape of the bell curve, such that they can, for example, from Australia, perceive an earthquake in Chile." Chile is a mere 11,365 kilometres from Australia's east coast.

Mr George Papadopolous, a rural pharmacist, may be such a person. He has written that, "On another occasion, and by far the worst of all days, the problem had dissipated when arriving at Young about 100km from the closest turbines ... Truly these figures appear subjective, outrageous, and for most, impossible to believe. However, I am reporting my findings that have taken hours and days to determine. I'm not just plucking figures out of the air" (Papadopolous 2012). Mr Papadopolous for a time worked as an "assessor" for something called the Geovital Academy, an entity which sells blankets, shields, paints and pillows to protect gullible people from the evils of electromagnetic radiation invading their houses. Its website once had an endorsement from "Noble [sic] Prize winner Ivan Engler Dr.med.univ., PhD." No one named Ivan Engler ever won a Nobel Prize in any category. He may have

won a Noble prize, whatever that might be. (Chapman and Crichton 2017: 216).

Mr Noel Dean, an objector from the Waubra area in Victoria, once told an anti-wind-farm meeting at Baringhup in Victoria in 2013 that wind turbines started charging his mobile phone without it being plugged in (Chapman and Crichton 2017: 216): "I've had my ... mobile phone go into charge mode in the middle of the paddock, away from everywhere."

This extraordinary claim would certainly be of great interest to manufacturers of mobile phones, who to date have apparently not advised that this remarkable charging ability is something all phone users should be aware of.

Ann Gardner, perhaps Australia's most prolific wind-farm complainant, believes she is adversely affected by wind turbines even when they are switched off (Chapman and Crichton 2017: 120).

And finally, Bruce Rapley, who in 1995 publicised the visit to New Zealand of a prominent Australian anti-immunisation advocate, worked up to a farrago of outrage in his oral evidence to the 2015 Senate wind farm committee:

In the future, I believe that the adverse health effects of wind turbines will eclipse the asbestos problem in the annals of history. In my opinion, the greed and scientific half-truths from the wind industry will be seen by history as one of the worst corporate and government abuses of democracy in the 21st century (Chapman and Crichton 2017: 218).

The World Health Organization estimates that 125 million people are today occupationally exposed to asbestos and that about half of all occupational cancers are asbestos-caused (WHO 2017).

The sort of claptrap I have described is what passes for science and evidence in the imaginary “debate” that has now caused the Australian parliament and two state parliaments to investigate wind farms on no fewer than five occasions between 2011 and 2015.

By far the most egregious of these was the 2015 Senate enquiry (Commonwealth 2015) headed by ex-Senator John Madigan, a blacksmith before entering parliament. The Madigan Committee’s report is a travesty of science. It failed to even mention what is universally acknowledged to be the largest, most robust and important longitudinal study of wind farms and health run by Health Canada (2014). This study provided no support for the direct cause hypothesis.

The \$2.5m Office of the Wind Farm Commissioner released its first annual report (ONWFC 2017) in 2017. As anyone following this issue closely could have predicted, it was not stampeded by complainants.

Wind-farm opponents have grasped the straw that the evidence that wind turbines are dangerous is poor, and argue that we therefore need to invest in research that they just *know* will prove their point. There’s also “poor evidence” that UFOs, the Loch Ness monster and leprechauns exist, but no serious scientific body thinks investing research in such claims is sensible, other than the politically pressured NHMRC which in 2015 allocated \$2.5 million into wind and health research.

A senior NHMRC official wrote that the decision to allocate funding to wind turbine and health research reflected the “macro-political environment.”

Let me finish by describing the tactics that have been used against my efforts to ask awk-

ward questions about the claims made by anti-wind-farm interests.

These have included:

- Serial complaints to senior officials in my university that I was belittling wind-farm victims. Their claims were apparently beyond question;
- Taunts that I refused to ever meet victims and “see for myself” (I was never invited);
- Taunts that I should get a wind turbine in my own garden;
- Complaints to my institutional ethics committee that I was conducting research without ethics approval;
- Constant false claims that I am in the pay of the wind industry;
- Regular attacks on my academic credentials;
- Attacks under parliamentary privilege (by two politicians);
- Two defamation suits;
- Regular slander on an anonymous website.

## Conclusion

The history of social panics over new technology shows they have a natural history. There are doubtless a few people left who still fear television sets and microwave ovens. The heyday of fearing cell phone towers came and went in the 1990s. Wind-farm anxiety is now thankfully rapidly receding, with the desultory complaint volumes submitted to the Wind Commissioner [24] showing the phenomenon has all but passed.

But the delays this panic caused in driving Australian renewable energy harvesting were major. Our book’s final chapter explores the

lessons in how we might avoid the next wave of “modern health worries.”

### References

- Bacon, F. ([1597] 2005). “Of envy,” in *The essays or counsels civil and moral of Francis Bacon*. Digital edition at <http://bit.ly/2yOMpm4>
- Barnard, M. (2012) Bad day in court for anti-wind campaigner Sarah Laurie. *RenewEconomy*, Nov 27. <http://bit.ly/2i7LdT0>
- Beard, G.M. (1881) *American Nervousness, Its Causes and Consequences: A Supplement to Nervous Exhaustion (neurasthenia)*, Harvard: Putnam
- Chapman, S., Azizi, L., Luo, Q., Sitas, F. (2016) Has the incidence of brain cancer risen in Australia since the introduction of mobile phones 29 years ago? *Cancer Epidemiology* 42: 199-205.
- Chapman, S., Crichton, F. (2017) *Wind Turbine Syndrome: a Communicated Disease*. Sydney: Sydney U. P. <https://ses.library.usyd.edu.au/handle/2123/17600>
- Chapman S., Simonetti T. (2015) Summary of main conclusions reached in 25 reviews of the research literature on wind farms and health. University of Sydney eScholarship Repository <http://bit.ly/2zQs9k9>
- Chapman S., St George A., Waller K., Cacic V. (2013) The pattern of complaints about Australian wind farms does not match the establishment and distribution of turbines: support for the psychogenic, “communicated disease” hypothesis. *PLoS One* 8(10): e76584. doi:10.1371/journal.pone.0076584, 16 Oct
- Commonwealth of Australia (2015). *Select Committee on Wind Turbines: Final Report*. Senate Printing Unit, Canberra. [August https://www.aph.gov.au/Parliamentary\\_Business/Committees/Senate/Wind\\_Turbines/Wind\\_Turbines/Final\\_Report](https://www.aph.gov.au/Parliamentary_Business/Committees/Senate/Wind_Turbines/Wind_Turbines/Final_Report)
- Crichton, F., Chapman, S., Cundy, T., Petrie, K.J. (2014) The link between health complaints and wind turbines: support for the nocebo expectations hypothesis. *Frontiers in Public Health* doi: 10.3389/fpubh.2014.00220
- Crichton, F., Dodd, G., Schmid, G., Gamble, G., Petrie, K.J. (2014) Can expectations produce symptoms from infrasound associated with wind turbines? *Health Psychology*, Apr 33(4):360-4. doi: 10.1037/a0031760.
- Hallberg, O., Oberfeld, G. (2006) Will we all become electrosensitive? *Electromagnetic Biology and Medicine* 25: 189–191.
- Health Canada (2014). *Wind Turbine Noise and Health Study: Summary of Results*. Government of Canada, 30 October. <http://bit.ly/1wn3Joc>
- National Health and Medical Research Council (2015). *Targeted Call for Research (TCR) into Wind Farms and Human Health*. <https://www.nhmrc.gov.au/grants-funding/apply-funding/targeted-and-urgent-calls-research/targeted-call-research-tcr-wind-farm>
- Office of the National Wind Farm Commissioner (2017) *Annual Report to the Parliament of Australia*. Canberra, 31 Mar. <http://bit.ly/2y7dzrn>
- Papadopoulos, G. (2012) *Wind turbines and low frequency noise: Implications for human health*. *Wind Watch*, Sep 24. <http://bit.ly/2ciZ7lk>
- Simon, L. (2004) *Dark Light. Electricity and Anxiety from the Telegraph to the X-ray*. Orlando, Fl.: Harcourt.
- World Health Organization. (2017) *Asbestos: elimination of asbestos-related diseases*. Aug. [www.who.int/mediacentre/factsheets/fs343/en/](http://www.who.int/mediacentre/factsheets/fs343/en/)

