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PCR Tests and the Rise of Disease Panic

BY IAN MCNULTY DECEMBER 2, 2021 PUBLIC HEALTH 28 MINUTE READ

Investigating the cause of a disease is like investigating the cause of a crime. Just as the detection of a suspect's DNA at a crime scene doesn't prove they committed the crime, so the detection of the DNA of a virus in a patient doesn't prove it caused the disease.

Consider the case of *Epstein-Barr Virus* (EBV) for example. It can cause serious diseases like arthritis, multiple sclerosis and cancer. A Japanese study in 2003 found that 43% of patients suffering from Chronic Active Epstein-Barr Virus (CAEBV) died within 5 months to 12 years of infection.

Yet EBV is one of the most common viruses in humans and has been detected in 95% of the adult population. Most of those infected are either asymptomatic or show symptoms of glandular fever, which can have similar symptoms to 'long Covid.'

If an advertising agency attempted to create demand for an EBV treatment with daily TV and radio ads representing positive EBV tests as '*EBV Cases*' and deaths within 28 days as '*EBV Deaths,*' they'd be

prosecuted for *fraud by false representation* so quickly their feet wouldn't touch the ground.

How Viruses Are Detected

Before the invention of PCR, the *gold standard* for detecting viruses was to grow them in a culture of living cells and count damaged cells using a microscope.

The disadvantage of cell cultures is they need highly skilled technicians and can take weeks to complete. The advantage is they only count living viruses that multiply and damage cells. Dead virus fragments that do neither are automatically discounted.

The invention of PCR in 1983 was a game changer. Instead of waiting for viruses to grow naturally, PCR rapidly multiplies tiny amounts of viral DNA exponentially in a series of heating and cooling cycles that can be automated and completed in less than an hour.

PCR revolutionised molecular biology but its most notable application was in genetic fingerprinting, where its ability to magnify even the smallest traces of DNA became a major weapon in the fight against crime.

But, like a powerful magnifying glass or zoom lens, if it's powerful

enough to find a needle in a haystack it's powerful enough to make mountains out of molehills.

Even the inventor of PCR, Kary Mullis, who won the Nobel Prize in Chemistry in 1993, vehemently opposed using PCR to diagnose diseases: "PCR is a process that's used to make a whole lot of something out of something. It allows you to take a very miniscule amount of anything and make it measurable a*nd then talk about it like it's important.*"

PCR has certainly allowed public health authorities and the media around the world to talk about a new variant of Coronavirus like it's important, but how important is it really?

The Dose Makes The Poison

Anything can be deadly in high enough doses, even oxygen and water. Since the time of Paracelsus in the 16th century, science has known there are no such things as poisons, only poisonous concentrations:

> *"All things are poison, and nothing is without poison; the dosage alone makes the poison." (Paracelsus, dritte defensio, 1538.)*

This basic principle is expressed in the adage "*dosis sola facit venenum*" – the dose alone makes the poison – and is the basis for all Public Health Standards which specify *Maximum Permissible Doses* (MPDs) for all known health hazards, from chemicals and radiation to bacteria, viruses and even noise.

Public Health Standards, Science and Law

Toxicology and Law are both highly specialised subjects with their own highly specialised language. Depending on the jurisdiction, *Maximum Permissible Doses* (MPDs) are also known as *Health Based Exposure Limits* (HBELs), *Maximum Exposure Levels* (MELs) and P*ermissible Exposure Limits* (PELs). But, no matter how complicated and confusing the language, the basic principles are simple.

If the dose alone makes the poison then it's the dose that's the biggest concern, not the poison. And if Public Health Standards in a liberal democracy are regulated by the rule of law then the law needs to be simple enough for a jury of reasonably intelligent lay people to understand.

Although the harm caused by any toxin increases with the dose, the level of harm depends not only on the toxin, but the susceptibility of the individual and the way the toxin is delivered. *Maximum*

Permissible Doses have to strike a balance between the benefit of increasing safety and the cost of doing it. There are many Political, Economic and Social factors to consider besides the Technology (PEST).

Take the case of noise for example. The smallest whisper may be irritating and harmful to some people, while the loudest music may be nourishing and healthy for others. If the *Maximum Permissible Dose* was set at a level to protect the most sensitive from any risk of harm, life would be impossible for everyone else.

Maximum Permissible Doses have to balance the costs and benefits of restricting exposure to the level of *No Observable Effect* (NOEL) at one end of the scale, and the level that would kill 50% of the population at the other (LD50).

Bacteria and viruses are different from other toxins, but the principle is the same. Because they multiply and increase their dose with time, maximum permissible doses need to be based on the minimum dose likely to start an infection known as the *Minimum Infective Dose* (MID).

Take the case of listeria monocytogenes for example. It's the bacteria that causes listeriosis, a serious disease that can result in meningitis, sepsis and encephalitis. The case fatality rate is around 20%, making

it ten times more deadly than Covid-19.

Yet listeria is widespread in the environment and can be detected in raw meat and vegetables as well as many ready-to-eat foods, including cooked meat and seafood, dairy products, pre-prepared sandwiches and salads.

The minimum dose in food likely to cause an outbreak of listeriosis is around 1,000 live bacteria per gram. Allowing a suitable margin of safety, EU and US food standards set the maximum permissible dose of listeria in ready-to-eat products at 10% of the minimum infective dose , or 100 live bacteria per gram.

If Maximum Permissible Doses were based solely on the detection of a bacteria or virus rather than the dose, the food industry would cease to exist.

Protection of the Vulnerable

The general rule of thumb for setting maximum permissible doses used to be 10% of the MID for bacteria and viruses, and 10% of the LD50 for other toxins, but this has come under increasing criticism in recent years: first with radiation, then Environmental Tobacco Smoke (ETS), then smoke in general, then viruses.

The idea that there is *no safe dose* of some toxins began to surface in the 1950s, when radioactive fallout from atom bomb tests and radiation from medical X-rays were linked with the the dramatic post-war rise in cancers and birth defects.

Although this was rejected by the science at the time, it wasn't entirely unfounded. There are many reasons why radiation may be different from other pollutants. Chemicals like carbon, oxygen, hydrogen and nitrogen are recycled naturally by the environment, but there is no such thing as a Radiation Cycle. Radioactivity only disappears gradually with time, no matter how many times it's recycled. Some radioactive substances remain dangerous for periods longer than human history.

All life forms are powered by chemical processes, none by nuclear energy. The last natural nuclear reactor on earth burned out more than 1.5 billion years ago. The nearest one now is isolated from life on earth by 93 million miles of vacuum.

As evidence mounted to show there was no safe dose of radiation, maximum permissible doses were lowered drastically, but limited doses were still allowed. If public health standards were based purely on the detection of radiation rather than the dose, the Nuclear Industry would cease to exist.

The susceptibility of any individual to any health risk depends on many factors. Most people can eat sesame seeds and survive bee stings without calling an ambulance, for others they can be fatal. In the US bees and wasps kill an average of more than 60 people each year, and food allergies cause an average of 30,000 hospitalisations and 150 deaths.

If public health standards were based solely on the detection of a toxin rather than the dose, all bees would be exterminated and all food production closed down.

Food allergies set the legal precedent. Where minuscule traces of something might be harmful for some people, the law demands that products carry a clear warning to allow the vulnerable to protect their own health. It doesn't demand everyone else pay the price, no matter what the cost, by lowering maximum permissible doses to the point of no observable effect.

Minimum Infectious Doses (MIDs) have already been established for many of the major respiratory and enteric viruses including strains of coronavirus. Even though SARS-CoV-2 is a new variant of coronavirus, the MID has already been estimated at around 100 particles. Whilst further work is needed, nevertheless it could serve as a working standard to measure Covid-19 infections against.

Are PCR Numbers Scientific?

As the philosopher of science, Karl Popper, observed: "non-reproducible single occurrences are of no significance to science."

To be reproducible, the results of one test should compare within a small margin of error with the results of other tests. To make this possible all measuring instruments are calibrated against international standards. If they aren't, their measurements may appear to be significant, but they have no significance in science.

PCR tests magnify the number of target DNA particles in a swab exponentially until they become visible. Like a powerful zoom lens, the greater the magnification needed to see something, the smaller it actually is.

The magnification in PCR is measured by the number of cycles needed to make the DNA visible. Known as the *Cycle Threshold* (Ct) or *Quantification Cycle* (Cq) number, the higher the number of cycles the lower the amount of DNA in the sample.

To convert Cq numbers into doses they have to be calibrated against the Cq numbers of standard doses. If they aren't they can easily be blown out of proportion and appear more significant than they actually are.

Take an advertisement for a car for example. With the right light, the right angle and the right magnification, a scale model can look like the real thing. We can only gauge the true size of things if we have something to measure them against.

Just like a coin standing next to a toy car proves it's not a real one, and a shoe next to a molehill shows it's not a mountain, the Cq of a standard dose next to the Cq of a sample shows how big the dose really is.

So it's alarming to discover that there are no international standards for PCR tests and even more alarming to discover that *results can vary up to a million fold*, not just from country to country, but from test to test.

Even though this is well-documented in the scientific literature it appears that the media, public health authorities and government regulators either haven't noticed or don't care:

- "It should be noted that currently there is *no standard measure of viral load in clinical samples*."

- "An evaluation of eight clinically relevant viral targets in 23 different laboratories resulted in *Cq ranges of more than 20, indicative of an apparently million-fold difference in viral load*

in the same sample."

- "The evident lack of certified standards or even validated controls to allow for a correlation between RT-qPCR data and clinical meaning *requires urgent attention from national standards and metrology organisations*, preferably as a world-wide coordinated effort."
- "*Certainly the label "gold standard" is ill-advised*, as not only are there numerous different assays, protocols, reagents, instruments and result analysis methods in use, but there are currently no certified quantification standards, RNA extraction and inhibition controls, or standardised reporting procedures."

Even the CDC itself admits PCR test results aren't reproducible:

- "Because the nucleic acid target (the pathogen of interest), platform and format differ, *Ct values from different RT-PCR tests cannot be compared*."

For this reason PCR tests are licenced under emergency regulations for the detection of the type or 'quality' of a virus, not for the dose or 'quantity' of it.

- "As of August 5, 2021, all diagnostic RT-PCR tests that had received a US Food and Drug Administration (FDA) Emergency Use Authorization (EUA) for SARS-CoV-2 testing were

qualitative tests."

- "The Ct value is interpreted as positive or negative but *cannot be used to determine how much virus is present* in an individual patient specimen."

Just because we can detect the 'genetic fingerprint' of a virus doesn't prove it's the cause of a disease:

- *"Detection of viral RNA may not indicate the presence of infectious virus or that 2019-nCoV is the causative agent for clinical symptoms."*

So, while there's little doubt that using PCR to identify the genetic fingerprint of a Covid-19 virus is the gold standard in molecular science, there's equally no doubt that using it as the gold standard to quantify Covid-19 '*cases*' and '*deaths*' is "ill-advised."

The idea that PCR may have been used to make a mountain out of a molehill by blowing a relatively ordinary disease outbreak out of all proportion is so shocking it's literally unthinkable. But it wouldn't be the first time it has happened.

The Epidemic That Wasn't

In spring 2006 staff at the Dartmouth-Hitchcock Medical Center in New Hampshire began showing symptoms of respiratory infection

with high fever and nonstop coughing that left them gasping for breath and lasted for weeks.

Using the latest PCR techniques, Dartmouth-Hitchcock's laboratories found 142 cases of pertussis or whooping cough, which causes pneumonia in vulnerable adults and can be deadly for infants.

Medical procedures were cancelled, hospital beds were taken out of commission. Nearly 1,000 health care workers were furloughed, 1,445 were treated with antibiotics and 4,524 were vaccinated against whooping cough.

Eight months later, when the state health department had completed the standard culture tests, not one single case of whooping cough could be confirmed. It seems Dartmouth-Hitchcock had suffered an outbreak of ordinary respiratory diseases no more serious than the common cold!

The following January the *New York Times* ran the story under the headline "Faith in Quick Test Leads to Epidemic That Wasn't." "Pseudo-epidemics happen all the time," said Dr. Trish Perl, past president of the Society of Epidemiologists of America. "It's a problem; we know it's a problem. My guess is that what happened at Dartmouth is going to become more common."

"PCR tests are quick and extremely sensitive, but their very sensitivity makes false positives likely" reported the *New York Times*, "and when hundreds or thousands of people are tested, as occurred at Dartmouth, false positives can make it seem like there is an epidemic."

"To say the episode was disruptive was an understatement," said Dr. Elizabeth Talbot, deputy epidemiologist for the New Hampshire Department of Health, "I had a feeling at the time that this gave us a shadow of a hint of what it might be like during a pandemic flu epidemic."

Dr. Cathy A. Petti, an infectious disease specialist at the University of Utah, said the story had one clear lesson. "The big message is that every lab is vulnerable to having false positives. No single test result is absolute and that is *even more important with a test result based on PCR*."

The Swine Flu Panic of 2009

In the spring of 2009 a 5-year old boy living near an intensive pig farm in Mexico went down with an unknown disease that caused a high fever, sore throat and whole body ache. Several weeks later a lab in Canada tested a nasal swab from the boy and discovered a variant of the flu virus similar to the H1N1 Avian flu virus which they labelled

H1N1/09, soon to be known as 'Swine Flu.'

On 28 April 2009 a biotech company in Colorado announced they had developed the *MChip*, a version of the *FluChip*, which enabled PCR tests to distinguish the Swine Flu H1N1/09 virus from other flu types.

"Since the FluChip assay can be conducted within a single day," said InDevR's leading developer and CEO, Prof Kathy Rowlen, "it could be employed in State Public Health Laboratories to greatly enhance influenza surveillance and our ability to track the virus."

Up until this point the top of the World Health Organisation (WHO) Pandemic Preparedness homepage had carried the statement:

> *"An influenza pandemic occurs when a new influenza virus appears against which the human population has no immunity, resulting in several simultaneous epidemics worldwide with enormous numbers of deaths and illness."*

Less than a week after the MChip announcement, the WHO removed the phrase "enormous numbers of deaths and illness," to require only

that “a new influenza virus appears against which the human population has no immunity” before a flu outbreak to be called a ‘pandemic.’

No sooner had the laboratories started PCR testing with MChip than they were finding H1N1/09 everywhere. By the beginning of June almost three-quarters of all influenza cases tested positive for Swine Flu.

Mainstream news reported the rise in cases on a daily basis, comparing it with the H1N1 Avian Flu pandemic in 1918 which killed more than 50 million people. What they neglected to mention is that, although they have similar names, Avian Flu H1N1 is very different and much more deadly than Swine Flu H1N1/09 .

Even though there had been less than 500 deaths up to this point compared to more than 20,000 deaths in a severe flu epidemic people flocked to health centres demanding to be tested, producing even more positive ‘cases,’

In mid-May senior representatives of all the major pharmaceutical companies met with WHO Director-General, Margaret Chan, and UN Secretary General, Ban Ki Moon, to discuss delivery of swine flu vaccines. Many contracts had already been signed. Germany had a contract with *GlaxoSmithKline* (GSK) to buy 50 million doses at a

cost of half a billion Euros which came into effect automatically the moment a pandemic was declared. The UK bought 132 million doses – two for every person in the country.

On 11 June 2009 WHO Director-General Margaret Chan, announced:

> *"On the basis of expert assessments of the evidence, the scientific criteria for an influenza pandemic have been met. The world is now at the start of the 2009 influenza pandemic."*

On 16 July the *Guardian* reported that swine flu was spreading fast across much of the UK with 55,000 new cases the previous week in England alone. The UK's Chief Medical Officer, Professor Sir Liam Donaldson, warned that in the worst case scenario 30% of the population could be infected and 65,000 killed.

On 20 July a study in The *Lancet* co-authored by WHO and UK government adviser, Neil Ferguson, recommended closing schools and churches to slow the epidemic, limit stress on the NHS and "give more time for vaccine production."

On the same day WHO Director-General, Margaret Chan announced

that “vaccine makers could produce 4.9 billion pandemic flu shots per year in the best-case scenario.” Four days later an official Obama administration spokesman warned that “as many as several hundred thousand could die if a vaccine campaign and other measures aren’t successful.”

The warnings had the desired effect. That week UK consultation rates for influenza-like illnesses (ILIs) were at their highest since the last severe flu epidemic in 1999/2000, even though death rates were at a 15-year low.

On 29 September 2009 the Pandemrix vaccine from GlaxoSmithKline (GSK) was rushed through European Medicines Agency approval, swiftly followed by Baxter’s Celvapan the following week. On 19 November the WHO announced that 65 million doses of vaccine had been administered worldwide.

As the year drew to a close it became increasingly obvious that swine flu was not all it was made out to be. The previous winter (2008/2009) the Office for National Statistics (ONS) had reported 36,700 excess deaths in England and Wales, the highest since the last severe flu outbreak of 1999/2000. Even though the winter of 2009 had been the coldest for 30 years, excess deaths were 30% lower than the previous winter. Whatever swine flu was, it wasn’t as deadly as other flu variants.

On 26 January the following year, Wolfgang Wodarg, a German doctor and member of parliament, told the European Council in Strasbourg that the major global pharmaceutical corporations had organised a "campaign of panic" to sell vaccines, putting pressure on the WHO to declare what he called a "false pandemic" in "one of the greatest medicine scandals of the century."

"Millions of people worldwide were vaccinated for no good reason," said Wodarg, boosting pharmaceutical company profits by more than $18 billion. Annual sales of *Tamiflu* alone had jumped 435 percent, to €2.2 billion.

By April 2010, it was apparent that most of the vaccines were not needed. The US government had bought 229 million doses of which only 91 million doses were used. Of the surplus, some of it was stored in bulk, some of it was sent to developing countries and 71 million doses were destroyed.

On 12 March 2010 SPIEGEL International published what it called "Reconstruction of a Mass Hysteria" that ended with a question:

> *"These organizations have gambled away precious confidence. When the next pandemic arrives, who will believe their assessments?"*

But it didn't take long to find an answer. In December the *Independent* published a story with the headline "*Swine flu, the killer virus that actually saved lives*."

> *The latest ONS report on excess winter deaths had shown that instead of the extra 65,000 swine flu deaths predicted by the UK's Chief Medical Officer, Professor Sir Liam Donaldson, deaths in the winter of 2009 were actually 30% lower than the previous year.*

Instead of the low death rate proving that swine flu had been a fake pandemic, confidence in the organisations that had "gambled away precious confidence" was quickly restored by portraying swine flu as something that "actually saved lives" by driving out the common flu.

PCR and Law

Portraying something as something it isn't is deception. Doing it for profit is fraud. Doing it by first gaining the trust of the victims is a confidence trick or a con.

In England, Wales and Northern Ireland fraud is covered by the Fraud

Act 2006 and is divided into three classes – 'fraud by false representation,' 'fraud by failing to disclose information' and 'fraud by abuse of position.'

A representation is false if the person making it knows it *may be* untrue or misleading. If they do it for amusement, it's a trick or a hoax. If they do it to make a gain, or expose others to a risk of loss, it's '*fraud by false representation.*'

If someone has a duty to disclose information and they don't do it, it might be negligence or simple incompetence. If they do it to make a gain, or expose others to a risk of loss, it's '*fraud by failing to disclose information*.'

If they occupy a position where they are expected not to act against the interests of others, and do it to make a gain or expose others to a risk of loss, it's '*fraud by abuse of position.*'

In Dartmouth Hitchcock's case there's no doubt that using PCR to identify a common respiratory infection as whooping cough was 'f*alse representation,*' but it was an honest mistake, made with the best of intentions. If any gain was intended it was to protect others from risk of loss, not to expose them to it. There was no failure to disclose information and nobody abused their position.

In the case of swine flu things aren't so clear. By 2009 there were already plenty of warnings from Dartmouth Hitchcock and many other similar incidents that using PCR to detect the genetic fingerprint of a bacteria or virus *may be* misleading. Worse still, the potential of PCR to magnify things out of all proportion creates opportunities for all those who would gain by making mountains out of molehills and global pandemics out of relatively ordinary seasonal epidemics.

The average journalist, lawyer, member of parliament or member of the public may be forgiven for not knowing about the dangers of PCR, but public health experts had no excuse.

It may be argued that their job is to protect the public by erring on the side of caution. It may equally be argued that the massive amounts of money spent by global pharmaceutical corporations on marketing, public relations and lobbying creates enormous conflicts of interest, increasing the potential for suppression of information and abuse of position across all professions, from politics and journalism to education and public health.

The defence is full disclosure of all information, particularly on the potential of PCR to identify the wrong culprit in an infection and blow it out of all proportion. The fact this was never done is suspicious.

If there were any prosecutions for fraud they weren't widely publicised, and if there were any questions raised or lessons to be learned about the role of PCR in creating the 2009 Swine Flu panic they were quickly forgotten.

The First Rough Draft of History

The first rough attempt to represent things in the outside world is journalism. But no representation can be 100% true. 'Representation' is literally a re-presentation of something that symbolises or 'stands in for' something else. Nothing can fully capture every aspect of a thing except the thing itself. So judging whether a representation is true or false depends on your point of view. It's a matter of opinion, open to debate in other words.

In a free and functioning democracy the first line of defence against false representation is a free and independent press. Where one news organisation may represent something as one thing, a competing organisation may represent it as something completely different. Competing representations are tried in the court of public opinion and evolve by a process of survival of the fittest.

Whilst this may be true in theory, in practice it isn't. Advertising proves people choose the most attractive representations, not the truest. News organisations are funded by financiers who put their

own interests first, not the public's. Whether the intention is to deliberately defraud the public or simply to sell newspapers by creating controversy, the potential for false representations is enormous.

Trial By Media

Despite the CDC's own admission that PCR tests "*may not indicate the presence of infectious virus*," its use to do exactly that in the case of Covid was accepted without question. Worse still, the measures taken against calling PCR into question have become progressively more draconian and underhanded since the very beginning.

The mould was set with the announcement of the first UK death on Saturday 29 February 2020. Every newspaper in Britain carried the same front page story:

"EMERGENCY laws to tackle coronavirus are being rushed in after the outbreak claimed its first British life yesterday," screamed The *Daily Mail*.

The first British victim contracted the virus on the Diamond Princess cruise ship in Japan, not Britain, but it didn't matter. With less than 20 cases in the UK and one 'British' death in Japan, the media had already decided it justified rushing in emergency laws. How did they know how dangerous it was? How were they able to predict the future? Had they forgotten the lessons of the 2009 Swine Flu panic?

After almost 2 weeks of newspaper, TV and radio fearmongering, Prime Minister Boris Johnson made it official at the Downing Street press conference on Thursday 12 March 2020 when he said:

> *"We've all got to be clear. This is the worst public*

> *health crisis for a generation. Some people compare it to seasonal flu, alas that is not right. Owing to the lack of immunity this disease is more dangerous and it's going to spread further."*

None of that statement stood up to scrutiny, but none of the hand-picked journalists in the room had the right knowledge to ask the right questions.

After 20 minutes blinding the press and public with science, Johnson opened the floor to questions. The first question, from the BBC's Laura Kuenssberg, set the mould by accepting the Prime Minister's statement without question:

> *"This is, as you say, the worst public health crisis for a generation."*

Any journalist who remembered the 2009 Swine Flu panic, might have asked how the PM *knew*, after just 10 deaths, that it *was* the worst public health crisis in a generation? He didn't say it *may* be or *could* be but definitely '*is.*'

Did he have a crystal ball? Or was he following the same Imperial College modelling that had predicted 136,000 deaths from mad cow disease in 2002, 200 million deaths from bird flu in 2005 and 65,000 deaths from swine flu in 2009, all of which had proved completely wrong?

As the BBC's chief political correspondent Kuenssberg wouldn't be expected to know any more about science, medicine, or PCR than any other member of the general public. So why did the BBC send their chief political correspondent to a press conference on public health and not their chief science or health correspondent? And why did the PM choose her to ask the first question?

But the BBC wasn't alone. Six other correspondents from leading news outlets asked questions that day; all were chief political correspondents, none were science or health correspondents. So none of the journalists allowed to ask questions had the necessary knowledge to subject the PM and his Chief Scientific and Medical Officers to any degree of real scrutiny

With the rise in the number of coronavirus 'cases' and 'deaths' reported on a daily basis and the Prime Minister's solemn warning that "*many more families, are going to lose loved ones before their time*" filling the headlines the following morning, questioning what the numbers actually meant became more and more impossible.

If the press and the public had forgotten the 2009 Swine flu panic, and those who helped calm it down had dropped their guard, those whose intention was to make a gain had learned their lesson.

Subject the Corona Crisis of 2020 to close scrutiny and it begins to look more like a carefully orchestrated advertising campaign for vaccine manufacturers than a genuine pandemic. But that scrutiny has been made impossible for all kinds of reasons.

'*Follow the money*' was once the epitome of investigative journalism, popularised in the movie of the Watergate scandal, *'All The President's Men'* which followed the money all the way to the top. Now following the money is called 'Conspiracy Theory' and is a sackable offence in journalism, if not yet in other professions.

The idea that there may be real conspiracies to make false representations with the intention of making a gain or exposing others to a risk of loss has now been driven so far beyond the pale it's

literally unthinkable.

If PCR has been tried by media in the court of public opinion, the case for the prosecution was demonised and dismissed at the outset and prohibited by emergency legislation soon after.

The Last Best Hope

The last line of defence against false representation in both science and the media is the law. It's no coincidence that Science and Law use similar methods and similar language. The foundations of the Scientific Method were laid by the Head of the Judiciary, the Lord Chancellor of England Sir Francis Bacon, in the *Novum Organum*, published exactly 400 years ago last year.

Both are based on 'laws,' both rely on hard physical evidence or '*facts,*' both explain the facts in terms of '*theories,*' both test conflicting facts and theories in '*trials*' and both reach verdicts through juries of *peers*. In science the peers are selected by the editorial boards of scientific publications. In law they're selected by judges.

In both law and science trials revolve around '*empirical*' evidence or '*facts*' – hard physical evidence that can be verified through the *act* of experiencing with our five senses of sight, sound, touch, smell and

taste.

But facts by themselves are not enough. They only '*make sense*' when they are selected and organised into some kind of theory, narrative or story through which they can be interpreted and explained.

But there's more than one way to skin a cat, more than one way to interpret the facts and more than one side to every story. To reach a verdict on which one is true, theories have to be weighed against each other rationally to judge the ratios of how closely each interpretation fits the facts.

Trial By Law

The ability of PCR to detect the genetic fingerprint of a virus is proven beyond reasonable doubt, but its ability to give a true representation of either the cause, severity or prevalence of a disease hasn't. To say the jury is still out would be an understatement. The jury has yet to be convened and the case yet to be heard.

Testing coronavirus particles in a swab is no different to testing apples in a bag. A bag of billiard balls rinsed in apple juice would test positive for apple DNA. Finding apple DNA in a bag doesn't prove it contains real apples. If the dose makes the poison then it's the quantity we need to test for, not just its genetic fingerprint.

Grocers test the amount of apples in bags by weighing them on scales *calibrated* against standard weights. If the scales are properly calibrated the bag should weigh the same on any other set of scales. If it doesn't, local trading standards officers test the grocer's scales against standard weights and measures.

If the scales fail the test the grocer can be prohibited from trading. If it turns out the grocer deliberately left the scales uncalibrated to make a gain they can be prosecuted for 'false representation' under section 2 of the Fraud Act 2006.

Testing the quantity of viral DNA in a swab, not the quantity of live viruses, is like counting billiard balls rinsed in apple juice as real apples. Worse still, in the absence of standards to calibrate PCR tests against results, tests can show a "*million-fold difference in viral load in the same sample.*"

If a grocer's scales showed *a million-fold difference* in the load of apples in the same bag they'd be closed down in an instant. If it can be shown that the grocer *knew* the weight displayed on the scales *may* have been untrue or misleading, and they did it to make a gain or expose customers to a loss, it would be an open-and-shut case, done and dusted in minutes.

If the law applies to the measurement of the quantity of apples in

bags, why not to the measurement of coronavirus in clinical swabs?

By the CDC's own admission, in its instructions for use of PCR tests:

> *Detection of viral RNA may not indicate the presence of infectious virus or that 2019-nCoV is the causative agent for clinical symptoms.*

From that statement alone it's clear that PCR tests *may* give a false representation that is untrue or misleading. If those using PCR tests to represent the number of Covid cases and deaths know it *may* be misleading and do it to '*make a gain,*' either monetary or just to advance their own careers, it's '*fraud by false representation.*'

If they have a duty to disclose information and they don't do it it's '*fraud by failing to disclose information.*' And if they occupy positions where they're expected not to act against the interests of the public but do it anyway it's '*fraud by abuse of position.*'

If the law won't prosecute those in authority for fraud, how else can they be discouraged from doing it?

As Dr. Trish Perl said after the Dartmouth Hitchcock incident,

“Pseudo-epidemics happen all the time. It’s a problem; we know it’s a problem. My guess is that what happened at Dartmouth is going to become more common.”The potential of PCR to cause problems will only get worse until its validity to diagnose the cause and measure the prevalence of a disease is tested in law. The last word on PCR belongs to its inventor, Kary Mullis: “The measurement for this is not exact at all. It’s not as good as our measurement for things like apples.”

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