

On The Time Lag Between Awareness of a Public Health Problem and the Enactment of Preventive Legislation

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Abstract

Two case studies, one about white lead in paint and another about industrial deafness, are employed to reveal 19-year lags between the emergence of preventive legislation and initial awareness that a public health problem existed. A discussion follows about ethics, politics and the human condition and the main findings of this discussion are applied to the question of how legislative lags might be shortened.

1.0: Introduction

This paper inquires into the time lag between first awareness of deleterious technology-induced health externalities and the emergence of a discernible preventive public policy strategy response. Section 2 presents two case studies involving technology, which, in scientific terms, is relatively simple. Both cases demonstrate the existence public policy lags in the order of 19 years. Section 3 asks whether, in this age of third wave environmentalism, the care ethic, upon which preventive strategy is predicated, is a sufficiently strong basis for a renewed offensive against the harmful health effects of technology.

2.0: Case Studies

2.1: Case 1: Industrial Deafness

For at least 19 years after the publication of minimum permissible exposure limits that would largely eradicate industrial deafness, Statute Legislation in Queensland remained ineffective. That is to say, compensation claims continued to be made for industrial deafness and workers continued to be exposed to noise levels known to be implicated in hearing loss.

A Period of Neglect: 1960-1989

Before the end of 1989, Queensland's Occupational Health and Safety Legislation was fragmented and confusing. Responsibility for occupational health and safety (OH&S) was spread over a number of statutes and there was over-regulation, with a plethora of rules and regulations, some of them out of date. There was an adversarial stance between government and unions and between unions and employer groups. There was something of an uneasy truce between government and industry. This period was also a period in which the ruling government of the day enjoyed spectacular electoral success through a power play which, inter alia, involved union bashing whenever this was likely to enhance re-election, occasional showcase incidents and big stick-waving forays into industry to save the appearances for occupational health and safety purposes, and a go-slow on occupational and environmental health and safety in the belief that the lower costs thereby faced by industry would attract investment to Queensland from interstate and overseas.

There were further complications. There was no uniformity of approach or definition across the various statutes, and the statutes themselves were more the result of an ad hoc and haphazard response to perceived needs than to any systematic approach to accident prevention and loss control. There were gaps in coverage and no real auditing of whether or not the legislation caught new products, processes or systems. Cash payments made under *Workers Compensation Claims* were then (as now) made on a *no fault no blame basis*. The cash payments were generally not burdensome on industry. Payouts and increased insurance premiums may have appeared a cheaper option to some firms than options involving training and/or physical preventive changes to the working environment. In effect, the system frequently chose compensation over prevention, cure (then) being disqualified by the very nature of industrial deafness itself. The possibility of cure today (the bionic ear and the splendid work that has gone into its making, and the improved quality of life that it may bring) should of course not be allowed to weaken the resolve for prevention and eradication.

In addition there was also some political use made of the OH&S question by unions. At times safety issues were used to win increased money payments rather than to prevent and eradicate industrial accidents and disease. Once penalty rates were won for dangerous situations there was less interest in having those situations remedied, especially if remedy would see the disappearance of the danger money itself.

Finally there was the modus operandi of the statutes themselves. At the time under discussion, the statutes were of the *minimum standards/sanctions approach*. Under this approach, minimum standards (or in their absence, legal sanctions) were specified in regulations accompanying the Act, inspections were made, and punishment may or may not have followed revealed breach of regulations or abuse of sanctions. Industry soon learned to obey the letter of the law, rather than perhaps the spirit of the law, and beyond that to act only when prompted by government. Sometimes action could be avoided for considerable lengths of time through the application of well-proven and tried challenge strategy. Of course there are always exceptions and no doubt some establishments were serious about OH&S.

The lead set by government, was poor. If 1974–75 and 1976–77 are taken for illustrative purposes (most such time spans in the 70's and 80's would produce similar

numbers) there were 25,954 days lost for 1202 occurrences of industrial disease over the 74-75 period and 43,718 days lost as a result of 1695 such occurrences for 76-77. Diseases of the ear accounted for 5.4% and 8.7% respectively of these occurrences. During this time, *Rule 11* of the now repealed *Factories and Shops Act, 1960-1970* specified the requirements of the law. *Rule 11* called up a National Health and Medical Research Council nomogram and publication, which prescribed a 90 dB(A) come 85 dB(A) noise fence. In this nomogram a 0.33 factor would result in the 85 dB(A) fence and a factor of 1.0 would give the 90 dB(A). Although *Rule 11* specified a 1.0 factor, the specification was ambiguous in its prescription when interpreted against a general statement that was made about upper limits of 115 dB(A) and 150 dB(A). There was very little inspection and policing during this period, very little preventive education and virtually no financial or procurement (purchase) policy incentives that would encourage preventive strategy at the industrial design stage. In short, a cosmetic legislative recognition of industrial deafness, together with the relatively unimportant status of noise as an occupational health issue, ensured little, if any, improvement in the rate of amelioration of the disease.

Given the vested interests in danger money on the part of the employees, and the penchant of employers for payment of increased premiums as a least cost profit maximising strategy, it is little wonder that the price mechanism went to work for the selection of *compensation over prevention*. In effect the system ensured that *prevention* per se was placed in the too hard basket of *market failure* and this helped legitimise industrial accident and disease (in this case noise induced hearing loss) as something permanent and unavoidable in the modern industrial state.

The public policy environment described above existed in the face of information and knowledge, which clearly highlighted its insufficiency. For example even before 1960 Littler (1958) had sounded the warnings and throughout the 60's and 70's there was documentation of those levels of exposure that would cause industrial deafness: Murrell (1975), Burns and Robertson (1970). Furthermore, prestigious organisations well known in public policy circles had, by the mid 70's, produced criteria, standards and measuring devices which would allow policy makers to prescribe, define and measure safe noise environments: ACGIH (1969), CHABA (1966), BOSH (1971), ILO (7). In Australia *The National Health and Medical Research Council* was calling for an 85 dB(A) fence as early as 1976.

A Period of Reform: 1989-1994

Towards the end of 1989 new statute legislation, known as the *Workplace Health and Safety Act, 1989* was introduced. It is worth while mentioning in passing that this legislation came into existence in the dying days of a government that had been in power for a very long time and which was desperate to remain in office. This government was subsequently found to have been corrupt and members of its Cabinet were imprisoned. Whether such turmoil and desperation was needed for such radically different legislation to be introduced will probably never be established: likewise the *real* story of its introduction. The new Act was not shelved by the incoming government and whether this was due to pressure of work or for other reasons can not be easily determined. Certainly the new Act has had a substantial effect, and commentators put the case that, through the good work of the *Division of Workplace Health and Safety*, Queensland had raised the stakes in workplace health and safety

reform in Australia. It is quite possible that in the turmoil and change, Queensland got something quite more than it understood or that it bargained for. A number of general reviews of the new Act have since taken place but these are not central to the content of this paper.

How then was this Act different?

First, many of the old Acts were repealed by the introduction of the new Act. This Act was quite strong by comparison with previous Acts and it was different in philosophy and approach. Although the new legislation was civil rather than criminal, more substantial fines were to apply and jail sentences could be given. The *balance of probabilities approach* rather than the *beyond reasonable doubt* criterion was to be the benchmark employed to determine outcomes. Although prescription and policing remained, the new legislation brought with it a new philosophy. Government was no longer to be seen as directly “daddy smack” responsible for occupational health and safety. Rather, government, along with employers, employees and the citizens themselves were all to have a duty of care to ensure health and safety in the workplace. *Regulations* generally were to be replaced with *Codes of Practice*, and the inspectorate, although retaining its power to impose fines and issue notices, was also expected to educate and inform. (Whether or not Australian managers and their employees were able to be educated has been thrown into question of late with amendments to the Act allowing on-the-spot fines.) *Standards* and *Codes of Practice* called up in the legislation were to become part of the law and in situations where the *Workplace Health and Safety Act* contradicts other Acts, the contradiction is to be resolved in its favour.

The general provisions of the Act made it incumbent on employers to develop a *duty of care* to maintain a safe working environment, to maintain equipment so that it is safe, to ensure that materials are handled and stored safely, to provide and maintain personal protective equipment in good condition, and to instruct and warn employees in all matters of safety.

In one sense, and only in a sense, the legislation reverses the maxim of *innocent until proven guilty* in that once an accident has happened or an industrial disease has occurred, there has been a *de facto* breach of the Act. However the Act operates under general provisions about *practicability* and *reasonability* and these have considerable influence over whether or not a charge will be brought for breach of duty of care. Whereas agriculture was subsequently included, the rear guard action from mining caused considerable delay and it is interesting that these two big revenue earning sectors are also at the head of the list of those sectors whose industrial morbidity and mortality records are troublesome. There are also provisions in the Act which catch *repair, installation, and engineering design*.

The new legislation was specific in its provisions about industrial noise and is an improvement over the old *Rule 11*. Under the new legislation where employees are exposed to a daily noise dose that exceeds 0.33 the employer will, where practicable, take action to reduce noise exposure to the allowable limits by engineering noise reduction and/or work scheduling. Where the employer is unable to comply with this requirement they will notify the Director of Workplace Health and Safety of the reasons and also of proposed programs to be implemented for the purpose of

compliance; and of hearing conservation programs being proposed in the interim period. The Director may require at any time that the employer introduce hearing conservation programs. Where noise in any area exceeds the 85 dB(A) fence as defined by the relevant Australian standard this area will be declared a *Hearing Protection Area* and signs will be erected at the boundaries of such areas so as to clearly define them. It is the employer's duty to ensure that no person will enter this area unless they are wearing certified hearing protection. No person is to be exposed to noise in excess of 115 dB(A) and the Director may order that the employer arrange for audiometric tests and medical examinations of workers at the workplace. Queensland, in 1993, thus joined Japan, New Zealand and Singapore and caught up with the two Australian territories, all of which, by as early as 1987, had legislated for 85 dB(A). This level was, however, not enforceable in Japan.

The Act is interesting in the manner in which it deals with industrial noise. If adhered to it should largely eradicate industrial deafness. But there is a weakness. It allows *Hearing Protection Areas* as an interim measure and forbids persons not wearing protective equipment to enter those areas. At the same time it admits the possibility on grounds of *practicability* and *reasonability* that some of these areas are likely to be permanent.

At its most crucial test the new legislation is not unlike the old legislation. In the absence of genuine *duty of care* it must rely on policing and the enforcement of compliance in many factories by small numbers of inspectors. Lowering the noise fence will have no effect on those areas, which could not be *reasonably* and *practically* dealt with, under the higher level. On the other hand it could mean that there are more noise zones to police, not fewer. There may also be some unexpected heavy financial costs involved which, under *reasonability* and *practicability*, largely absolve industry from pursuing engineering controls in the short to medium term. While no doubt some noise will be *engineered out*, some noise could be *cemented in*. Given that the Act requires manufacturers to produce safe equipment, there appears to be a missed economic and financial opportunity that might be effective in those 5 decibels between 85 and 90. Government purchasing contracts and tax policy could favour those manufacturers who build quieter products.

Certainly these critical speculations should not be allowed to detract from the very welcome reform contained in the new Act. What is appalling however is that, using Litter (1958) as the starting point, it took some 31 years (or some 19 years if, say, the definitive Burns and Robinson (1970) article is used instead) to usher in statute legislation that would, if correctly administered, largely eradicate industrial deafness in sites under its jurisdiction. But whether good legislation combined with good administration is enough to ensure success is another question again and this will be dealt with in Section 3.

2.2: Case 2: White Lead in Paint

Recognition of Role of White Lead in Childhood Plumbism

John Lockhart Gibson appears to be the first person to diagnose lead poisoning in Australia. As a result of his report to the Medical Society of Queensland in March

1892 investigations by staff of the Brisbane Hospital for Sick Children were presented to the Intercolonial Medical Congress of Australia in Sydney in 1892. “Tinfoil used in wrapping sweetmeats was suspected as a causal agent but:

the evidence is (not) sufficient to justify the conclusion that all our cases received the poison into the system from this source; and we have not at present any other clue to bring forward, though the matter is still being investigated. (Gibson et al 1892, p. 83).

Within the next five years some 76 children with suspected plumbism were admitted to the hospital and of these seven died during their hospitalisation.

More cases were diagnosed and Gibson (1897), upon a re-evaluation of cases earlier diagnosed by Turner (Turner 1892) as a peculiar form of basal meningitis, suspected them to be plumbism. Cases were reported from disparate towns throughout the state and interest in the disease produced new ideas about causal agents.

Sweetmeats, tinfoil (some samples of which contain lead), ginger beer (in some specimens of which lead was found by analysis) have been suggested....painted toys, and other things have also been mentioned as possible sources. But none of these stood the test of inquiry (Turner 1897, p. 478).

Drinking water tested negative after tropical showers and positive after storage for several dry months. (Turner 1897). Henderson demonstrated a method for detecting lead in water but difficulties (due to the presence of trace lead in reagents) were pointed out by Taylor (1898). Enough was enough.

Children in Queensland are suffering in no small number from a preventable form of poisoning. All I wish to prove is that a case has been made out for inquiry into its causation. The most essential part of this inquiry will be the cooperation of a chemical expert, for this is really a chemical problem. The medical expert has done his part if he points out that the poisoning exists, and where it exists. Furthermore, he is entitled, I think, not as an expert but as a citizen to ask that the poisoning exists, and where it exists. Furthermore, he is entitled, I think, not as an expert but as a citizen to ask that the matter be investigated, that this large amount of suffering, disablement, blindness and death be put an end to (Turner 1897, p. 479).

A Government Commission was appointed on May 30 1898 to investigate lead poisoning in Queensland but to the bewilderment of some of the investigators it was terminated with something of indecent haste.

On the 18 July, when in addition to the necessary analysis of reagents, etc, sufficient time had elapsed for the analysis of only six samples in connection with the cases, a progress report was asked for to enable the Home Secretary “to decide on the desirableness or otherwise of proceeding further in the matter” and on the 28th July the Board are informed that “Mr Dickson desires that the inquiry may now be directed

to a conclusion". In the absence of any reason being assigned by the Home Secretary, the Board are unable to conceive on what grounds an inquiry of such vital importance to the community should be stopped so soon after its commencement and consider that they are entitled to an explanation on that point (Taylor 1898, p. 762).

Political mileage was to be made and on December 7, 1898 Taylor, through his colleague Forrest, used the Legislative Council to seek an inquiry into the *cause of the disease of the brain and the nervous system prevalent among children of this colony*. (Queensland Parliamentary Debates 1898b p.1388). It appears that in Australia even as early as 1898 Government could be in turmoil but not in motion and Forrest's words are uplifting (well to some anyway).

We find the Hon Dr Taylor saying in his letter to the Under Secretary on the 10th October "It is evident, therefore, that this is a matter of grave importance to the community. An insidious poison is yearly prostrating a number of children with pain and disease and of these a large majority – about 70% are permanently paralysed, blinded or killed". Whatever stronger evidence does the Government want; or is half the country to be buried before anybody is going to be put in motion. If that cannot put the Government in motion it is difficult to conceive any sort of evidence that would. (Queensland Parliamentary Debates 1898b, p.1392).

And again:

we want the facts, and in order to arrive at them we must have an exhaustive enquiry. With that view I now ask the House to press upon the Government the necessity for making this enquiry, for evidently they will not make it without some pressure being brought to bear on them. (Queensland Parliamentary Debates 1898b, p.1394).

Forrest's motion was passed but the Government failed to take action of the kind required and complexity became the handmaiden of inactivity. Why weren't adults affected, why only children? Why weren't all children affected? Why wasn't lead present in the urine of all lead-affected patients? Why was the disease more prevalent in Queensland than elsewhere?

But then an intuitive serendipity sleepwalking solution emerged.

It occurred to me in this way. I had four fairly severe cases of plumbic ocular neuritis at the Children's Hospital. I was worrying as to how they got the lead, while loafing on a Sunday afternoon on my verandah. Suddenly I went for a piece of linen cloth and rubbed off some of the powdery white paint from my verandah rails. This I took to the Government Analyst, with the question, "Is it lead in a soluble form?" The answer came, "A soluble carbonate of lead".

My next step was prompted by the mother of one of the four ocular neuritis cases, as he had another child, who, though without symptoms, had a marked blue line on his gums. I told her they got the lead from

verandah rails, and carried it to their mouths by their fingers. She immediately said, “And those are the only two of my children who bite their nails” (Gibson 1917, p.203).

The Long Road to Preventive Legislation

Gibson (1904 p.149) made “a plea for painted walls and railings as the source of the lead and for the biting of finger-nails or sucking of fingers, as in the majority of cases, the means of conveyance of the lead to the patients” and in 1905, presented a paper on the action of lead on the optic and ocular nerves at the Intercolonial Medical Congress of Australasia in Adelaide. A resolution was passed and reported to the full Congress for transmission to the Government. The Government’s response on 13 December was in total, a confirmatory communication from the Home Secretary acknowledging lead poisoning, pointing out lead in paint as the cause, admitting that it is desirable that non lead based paints should be used on surfaces within the reach of children, and instructing parents to prevent their children from nail biting and eating with unwashed hands.

Cases continued to occur, some in subtropical Australia (Gill 1905), and in 1908 at the Australian Medical Congress in Melbourne, Turner spoke on paediatric lead poisoning in children. He noted its widespread prevalence among children, the causal and behavioural agents, and certain particulars of the manner in which this disease differs between children and adults. Evidence continued to accumulate. Breinl and Young (1914) claimed that their findings of lead in the urine and faeces of children clinically suspected of plumbism “proved beyond doubt that lead poisoning is not an uncommon occurrence among children.” Lead was not found in the urine of healthy children living under the same conditions.

Turner and Gibson continued to agitate for legislation which would “prevent ill health and suffering, crippling, hopeless and permanent blindness and occasionally death” (Turner 1908); which would prohibit “the use of lead paint within the reach of children” (Gibson 1911 p.753); and which would end the question of “Why our Government cannot be induced to make it penal to use lead paint for surfaces within the reach of children” Gibson 1917 p.753). This last question was one which, for Gibson, “annoys greatly.” The reformers continued their struggle.

After a meeting of the Queensland Branch of the British Medical Society it was resolved: “that a deputation from the Branch, together with Dr J I Moore, the Commissioner of Public Health, should wait on the Home Secretary for the purpose of using the Government to introduce a bill to protect the community from damage to health produced by lead poisoning” (Med J Aust 1917, p.365).

They waited on the Home Secretary until 1919 and then Gibson went to the heart of the matter.

How any man expressing an interest in young children can bring himself as our master painters bring themselves, to oppose the exclusion of lead from painted surfaces within the reach of young children, passes my comprehension. Zinc white has been used on my verandah for the last

thirteen years and has proved it to be a better and more lasting paint than white lead. And it will not poison the children.

One senior master painter jokingly complained to me that zinc white, “lasted too long”. Surely this cannot be the explanation. Painters are required to put on zinc paint quite as much as to put on lead paint, so it is impossible to see how they can be “put out of business” by the substitution of zinc white for white lead on surfaces within the reach of children.

Surely also, our children are of more importance than the obligations painters may be under to the manufacturers of white lead (Gibson 1919, p.274).

It was in 1920 when the Australasian Medical Congress in Brisbane adopted the following resolution:

That this Congress desires to express its profound dissatisfaction with the continued absence in this state of any regulations to enforce certain elementary, easy and much needed methods of preventing disease, to wit:

(1).....
.....

(2) the prohibition of the use of paint containing white lead in verandah railings and other outdoor surfaces exposed to the hands of small children, from which causes every year there are contributed cases of paralysis and blindness, while in other children are sown the seeds of ultimately fatal disease of the kidneys (Med J. Aust 1920, p. 302-303).

Perhaps the Brisbane congress was a little close to home for the Home Secretary, perhaps not, but a 1921 promise under his hand (which also admitted the determined opposition from *powerful moneyed interests*) put it that the forthcoming Health Act *will contain a clause prohibiting the use of lead paint on verandah railings.* (Council of the Queensland Branch of the British Medical Association 1922b, p.152).

A High Noon Showdown

However the battle had not really begun. The New South Wales Board of Trade allowed the subject of lead poisoning to be introduced at an inquiry. One Dr S A Smith, tutor in medicine at the University of Sydney and Honorary Physician and Assistant Honorary Physician respectively at St. Vincent’s and Royal Prince Alfred Hospitals, offered opinions:

Q9606: Would you think that lead poisoning could be contracted by children rubbing their hands on verandah posts and fences and the like, when it had reached the stage that decomposition had set in and it was in a form that removable by touching it?

Smith: No, I do not think so.

Q9607: This is one of the grounds that is put forward by the persons advocating the prohibition of lead?

Smith: Yes.

Q9610: And of sufficient duration to warrant you thinking that permanent harm would come to the children?

Smith: Yes, I think that if every particle of lead that a child, by rubbing his hands upon the fence, would introduce into his body through the gastro-intestinal tract, were introduced, no harm would result.

Q9602: I take it, from the little attention given to the matter, that Dr Gibson's theory is that optic neuritis in children as it occurs in Brisbane is probably caused by the ingestion of lead?

Smith: He goes further, he says definitely that it is caused by lead.

Q9603: Is it the ingestion of lead, not the inspiration of lead?

Smith: No, the ingestion of lead from the fingernails of the children who rub their hands along the palings. I should say that his investigations are such as would not carry weight with a scientific body.

Q9656: You were asked about blindness in children. Have you ever seen a case of blindness in children as caused by lead?

Smith: No and I have never heard of a case occurring in Sydney.

Q9657: You were also asked about ocular neuritis in Queensland and I understood you to say that there was no proof that that was due to lead?

Smith: No, there was no satisfactory proof that there was lead at all. It was largely an assumption on the part of Dr Lockhart Gibson that it was due to lead, because he could not account for it in any other way.

Q9570: There is a statement attributed in the press to Dr Dodds, which I will read and ask your opinion on. The statement is "The President of the Association, Dr Dodds, made the alarming statement that lead poisoning was frequently the cause of blindness in children, deaths of infants, paralysis and abnormalities, and of the high death rate in Queensland due to eisanthema in pregnant women. It was also the cause of the death rate through kidney disease of adults". This is published in the Brisbane Chronicle. Did you hear that opinion attributed to Dr Dodds?

Smith: Yes.

Q9571: Do you agree with that view?

Smith: I think it is a very ridiculous statement.

Q9575: This is a statement attributed to Dr Dodds in the Brisbane newspaper and I ask for your expression of opinion of it.

Smith: If Dr Dodds did say that – personally I do not think that he did – but if he did say it, it was an entirely ridiculous statement.

The Queensland Branch of the British Medical Society noted that the Master Painters used Smith's evidence (and the Medical Journal's defence of his right to give that evidence) *to further their determined opposition to the exclusion of the lead paint from verandah railings.* (Council of the British Medical Association 1922a p. 26).

The response was lively.

Dr Smith has either not read the literature on the aetiology of plumbism in Queensland children, or he is singularly deficient in scientific imagination.....There is no doubt poisoning does occur through ingestion of lead into the digestive tract. Most of the well-marked cases of lead poisoning, or even of epidemics of lead poisoning, occurring through the ingestion of lead into the digestive tract, have been instances of a non-industrial character. There is no doubt that it can occur by a transfer from the hands, etc to the digestive tract. Must we believe that an ordinary person may be poisoning from his hands, but a Queensland child cannot? Perhaps Dr Smith will kindly explain (Council of the Queensland Branch of the British Medical Association 1922, p.283).

It was also noted that Q9602 by the Commissioner *is incorrectly put.* In other words the Commission itself, by its own reading of Dr Gibson's research, had misinformed itself.

Further, after stating that the first part of Dr Smith's answer to Q9603 is incorrect they advise him that his answers to Q96556 and Q9657 are *not in accordance with the facts* and that he should read Dr Gibson's papers more carefully.

Although members from the Southern States may have no first hand knowledge of the matter in dispute; we have always thought them competent to weigh the evidence we had to lay before them. (Council of the Queensland Branch of the British Medical Association 1922a, p. 283).

But it gets better when the methods of the Commission are inspected. Answers to certain questions provide:

an amusing example of the way in which Commissions obtain evidence. A nonsensical extract from a non-existent newspaper is flung at a witness and he is asked what he thinks of it. We are able to give a more correct report.

Dr Epsie Dodds stated that lead poisoning was a cause of blindness and paralysis in children, occasionally of death, and probably the cause of the

high Queensland death rate from eclapsia in pregnant women, and of kidney disease in young adults, in children.

This is not a ridiculous statement by any means, but a very grave statement. The first half of the statement has been proved beyond any reasonable doubt: the second half is a probable opinion for which much might be said. (Council of the Queensland Branch of the British Medical Association 1922a, p. 283).

Smith responds. Why he asks, does the disease not occur *in other places in which children bite their nails, suck their thumbs, and inhabit verandahs with painted railings and floors?* (Smith 1922, p.284). He follows up with some faulty claims that no investigation has been made about ingestion and particle size, the amount of lead available via the hands and fingers and that:

no effort has apparently been made to prove the ingestion of lead, since no adequate record exists of nay investigation of the faeces for lead in a series of children living under the conditions in question (Smith 1922 p. 284).

And finally Smith delivers his best shot. He had been involved in a Technical Commission of Inquiry at Broken Hill, among other things, a lead producing area, and had addressed ingestion, intoxication and absorption. On this basis he could pronounce that:

in spite of the fact that lumbar puncture has been regularly performed in these cases, there is no record of any bacteriological examination of the cerebo-spinal fluid. Nor apparently, has the blood been examined.

Further deficiency in the evidence is apparent when one remembers that owing to the favourable course of the disease, no post mortem evidence has been obtainable. To summarise, there is hardly any clinical evidence to correlate these causes to lead poisoning (Smith 1922, p. 285).

These statements mobilised the defence. Croll et al (1922, pp. 367-68) expressed an opinion that Smith does not:

offer any suggestion as to what these cases may be if they are not lead, and, if they are lead, he does not suggest any other possible source. Dr Smith's attitude is nothing new to us. Nearly everybody, on first hearing on these cases, adopts the same, but after a short experience of them becomes converted. The different in Dr Smith's case is that, although he has never seen the cases, his evidence is being used to block the long-sought preventive legislation, which we hope is near realisation.

McDonald (1922), Gibson (1922) and Turner (1922, p.366) all entered the fray with Turner later declaring that Smith:

has not answered the criticism of the council of the Queensland Branch of the British Medical Association. The Council quoted his actual words and

accused him (i) of giving in a very positive manner erroneous evidence on a matter of which he had no first hand knowledge, (ii) of having failed to read or failed to understand the evidence already published, (iii) of having given self contradictory evidence on a very important point, (iv) of having displayed an exaggerated opinion of his own standing as a scientific member of our profession. Instead of meeting these charges, Dr Smith has performed to make an attack on Dr Gibson and myself (Turner 1922, p.336).

Turner continues.

By rubbing weatherboard verandah railings I can get the palms of my hands covered in white powder in two minutes. How much a child of three or four years may get on its hands in six months, is a question I cannot answer. It would be very interesting if some patient observer would try to make a correct estimate (Turner 1922, p.366).

But the final quote given below for Turner is perhaps the most entertaining:

Dr Smith in his evidence did not express doubt as to the children being poisoned by lead paint. He expressed flat disbelief. He roundly declared that it was impossible. His evidence gave much pleasure in those interested in lead paint. Apparently he did not foresee that it would gravely displease those interested in the health of children. Nor does it seem to have occurred to him that mental blindness in a scientific expert in Sydney is a potential cause of actual physical blindness in Brisbane (Turner 1922, p.366).

Those campaigning for the removal of white lead from paint had finally won the day (or had they?). On July 1 an amendment to the Health Act became law. Inter alia, it prohibited that paint containing more than 5% soluble lead be used or *put within four feet of the floor*. (Health Act in Queensland Statutes Vol 12 1922-23, p.10023). Presumably the lead available in 1923 was of a kind that did not oxidise into the environment as powder.

As with Case 1 there can only be celebration of the work of Drs Gibson and Turner and their colleagues. And, as in Case 1, it is appalling that the legislative lag from discovery to preventive policy was some 18 years. It would be lovely to be able to conclude that the passing of the Amendment ended the suffering. It did not. And as the children grew into adults the plumbism grew into chronic nephritis. But this tragedy will not be addressed here.

In respect of to-day's (this paper's) interpretation of yesterday's cases: it is acknowledged that, from hindsight, policy options that might have been, suggest themselves more clearly and appear more simple. It is also recognised that scientific knowledge is often complex and contradictory in nature and that the rate and direction of scientific change is rapid and no doubt will continue to perplex early detection of deleterious health externalities. But notwithstanding this, the gap from acknowledging a disease, to preventative legislative strategy against it, is too long and this claim is further discussed in Section 3.

3.0: Public Policy Strategy, Politics and the Human Condition

3.1: A Difficult Question Asked

The cases above can be read in a number of ways: as a study in scientific method and politics, as a study of the nature of scientific knowledge and science and technology in the emerging industrial state, as a study of legislative inertia and public policy failure, as a study of the power of moneyed interests, or as a study of the “power of one”.

And each of these approaches can provide its own explanation as to what might be the cause of the legislative lag. For example could it be the complexity of the phenomena themselves? Were the lags caused by lack of sophistication in public policy strategy, a trade off between costs and health, hegemony, or face saving and duplicity in the political process? Was it natural dullness on the part of the legislators or was it studied cunning in the legislative cosmeticisation of a simple to understand but difficult to prevent industrial disease? Was it poor (or more to the point silenced) technical advice? Was it a general lack of education? Was it a poorly developed sense of *duty of care* on the part of government, employers and workers alike? Was it ignorance on the part of the bulk of the medical profession, or a lack of courage on their part to speak out? Was it because of the accepted need to defer to science for definitive analysis of the causes of the alleged problem and for scientific solutions? Was it because we really have little will to act, individually and collectively? Was it because we no longer are able to distinguish right from wrong action? Or, was it because of some combination of these reasons, together with political and business reality at the time? The list goes on.

Undoubtedly one may settle on any number of these explanations according to conviction and/or prejudice. But the fact remains that employers, employees and government, through awards made within the established industrial court system, and through an exchange of money, agreed to legitimise unhealthy and unsafe working environments. This *honour among thieves* thankfully, is not permissible under present legislative arrangements that prevent award payments based on the “danger money” concept. The “new” legislation adopts *duty of care* as its core element and in so doing recognises *care* as a necessary precondition to laissez-faire self-policing action of the kind desired.

But is *care* per se a sufficient basis upon which to build public policy strategy defence? Is *care* strong enough to generate public policy strategy which, irrespective of its being technically brilliant and administratively perfect or not, can be made more effective in its time response to industrial and environmental morbidity and mortality? In short, is mankind capable of *duty of care* in practice rather than in the ideal? Intellectual traditions both old and new have struggled with this question.

3.2: A Difficult Question Addressed

The cases reported in this paper relate an all-too-common story of the time it takes to enact legislation to address a problem of contested status. If we choose to look, contemporary circumstances provide many such examples of such cases, both national and international. If we do look, the terrain appears to be congested and contested. So much so that it is difficult for even a disinterested person to see clearly how problems might be articulated and resolved. The congestion arises from the many perspectives brought to bear on the issue, not all of which are purely scientific in nature. The contested nature of the issue arises from the many clamouring voices over what should be done; none of which can defeat the other in reason. With the help of electronic information systems, issues are widely reported. Unfortunately, solutions and actions appear to have become more and more difficult to find and while extensive reporting may raise awareness, it may also heighten inaction. The cases reported are examples of a very modern problem.

Why do we take so long to act?¹ The next section of the paper will explore the contribution of reason and will to the malaise of inaction.

3.3: Possible Origins of the Problem

The West's, and increasingly the world's, embrace of technology and its promises is indicative of the importance of science (and scientific reasoning) in the 'awareness-action' link. Implicitly, we have given science pride of place in our affairs. In the process we may have contributed to the very problem of failing to act in the interests of humanity. It is quite simple to point to the positive contributions of science to human life and wellbeing. It is not surprising, therefore, to find that we look more and more to science for explanations and solutions. We even carry over the methods of science to politics and economics (and other social sciences) to ensure that we adopt "correct" methods in our enquires. We are in awe of science because science works. Unfortunately, while we seek more and more scientific input and results, our action is often delayed and perhaps our ability to act is diminished. Could our pursuit of science and its fruits have led us to an action impasse?

If it has, this may explain our reluctance to act until all the scientific evidence has been sifted and conclusions reached. It may explain, as well, our failure to act once the scientific conclusions have been delivered to the community or government. This is because the very success of science has led us to doubt the distinction between good and evil. This makes it difficult to choose a course of action. If the human condition is to be improved everywhere, particularly where it is very poor, such issues will have to be addressed.

¹ To be sure there is rapid mobilisation and response to the media event catastrophes of flood, famine and quake. And there have been some heartening stands taken against tyranny and bullying. And the work done by some has been brave and splendid. But a different issue is under consideration here, prevention rather than reaction. Sometimes of course the difference is semantic.

3.4: A Legal Solution?

What is being done at present? The hope of the contemporary world appears to be based on the effectiveness of the enshrinement of the notion of *duty of care* and/or *due diligence* in legislation and regulations. Inclusion of these provisions in legislation indicates that many in the community still defer to a set of implicit standards regarding human action. These are most visible in the modern discussion of human rights, rights which are derivative from a fundamental right to life and the comforts of life. While the recognition of these rights has resulted in much needed action in many parts of the world, the very basis of those rights (and therefore the actions) remains elusive.

Why have communities resorted to the use of legislation to ensure that care exists in the community? Will such legislation result in appropriate types of care and the exercise of sufficient amounts of care? In seeking an answer to the first question, it might be suggested that there is a type of community failure occurring and that legislation is needed to correct that failure. This is similar to the economic case for legislation on grounds of market failure. If so, what is the nature of this community failure? Could it be the result of a failure of individuals and institutions/organisations to act morally, itself the result of the downgrading of moral or virtuous action in human affairs? Has legislation become the last refuge of virtuous action? That is, people and institutions must be *made* to take account of their duty of care.

It is by no means clear whether or not legislation will result in appropriate types and levels of care in the community. Certainly, legislation should redress the worst abuses in the community. However, it is unlikely to address the general problem to the satisfaction of most members of the community. For this to happen, individuals must have an incentive to act appropriately. Legislation, together with financial inducements, might go part of the way in solving the problem, but these would require very extensive coverage to be effective. In any case, a bureaucratic solution might simply be part of the problem and not a real solution at all. Action may still take too long; the precariousness of life will continue to be accentuated rather than diminished.

3.4: Explaining Inaction?

Why, if science has been so successful, has the malaise of inaction developed? It is difficult at first glance to see how this could occur. Science is, after all, the application of human reason to unlock the secrets of nature and to provide the power to 'control' nature. At least that seems to have been the rationale for modern science after Bacon and Descartes. Our modern standards of living are clearly dependent on the use (and misuse?) of that power. Yet, power is one thing, its use is another. As Leo Strauss (1964, p.7) notes:

science cannot teach wisdom. There are still some people who believe that this predicament will disappear when social science and psychology catch up with physics and chemistry. This belief is wholly unreasonable, for (these), however perfected, can only bring about a still further increase in man's power; they will as little teach men how to use his power over man or non-man as physics and chemistry do.

We can trace this recognition of the importance of human reason back to the dawn of Western thinking (and most likely to other sources as well, though with more difficulty). It has been the cultivation of reason that has led to the development of modern science and technology and the question is raised here whether or not the action lags are but one manifestation of elements inherent in the very cultivation of reason itself. Two explanations are raised: (a) has there been a detour – has reason been lead off the track? and (b) has the essential nature of reason itself undergone an important change over time.

Has there been a detour? Has the development of science and its concomitant embrace of technology, been the result of a detour at the dawn of Western thinking? If, as Heidegger (1998, p. 182) suggests:

whatever happens with historical human beings always derives from a decision about the essence of truth that was taken long ago and is never up to humans alone

then we may be seeing results of that choice in our awe of science and yet our inability to act quickly to remedy problems arising from the application of that science. This view that there has been a detour (i.e. that reason pursued what is right in the sense of being objective and measurable rather than what is right in the sense of good or bad) is hard to pin down.

Has the very nature of reason undergone important change over time? In this respect, we might note the break with classical political philosophy effected by Machiavelli and subsequent writers (such as Hobbes, Locke and Adam Smith). It was Machiavelli who exhorted the new princes (the radical young of his day?) to take their bearings from what mankind did most of the time, not by some unattainable standards such as those posited by Plato or Aristotle and re-echoed in the work of St Thomas Aquinas. His was a teaching of success by the use of reason (cunning?) and force to overcome chance or fortune. No longer did human action depend on reason about what should be done and the operation of chance, now reason (cunning?), together with force (fear) would 'carry the day' As Machiavelli (1640, p. 91) notes:

the gulf between how one should live and how one does live is so wide that a man who neglects what is actually done for what should be done learns the way to self-destruction rather than self-preservation.

As mentioned earlier it is difficult to pursue the implications of Heidegger's 'detour' in respect to the question here, viz our current ability, or inability, to act. His fundamental question of 'why is there something, rather than nothing,' is likely to lead to inaction to the extent that it paralyses reason and, therefore, reasoned action. All that is left is the insatiable appetite for more and more technology, itself the outcome of scientific activity. Another possibility is that it will lead to increasingly unreasoned action of a gentle or brutal type. To the extent that Heidegger's analysis of contemporary technological society is correct, lack of action may be seen as the result of a lack of appeal to reason or, perhaps, as an unwillingness to recognise the fundamental legitimacy of reason. Perhaps it is the 'presencing' of beings from which

language and reason proceed. Any action that does happen may be the result of a constellation of haphazard forces at work. What is there to do, but to sit back and wait for a new god who might take care of everything?

In the case of Machiavelli and writers in this tradition, it is possible to develop a slightly different perspective on the problem of inaction. With the emerging focus on self-interest and the associated development of axiomatic theories of human action, the split between the 'is' and the 'ought' resulted in the relativity of all 'value' and the view that norms of action (values) were outcomes of historical periods in which people were captive of their times. This leads eventually to the view that all values are equal, or at least that none can be defended across time. Thus the practices of any society, even the most brutal, rank equally with those of the most cultured. Reason can no longer guide us in our choices of means and ends. Once we see that the voice of reason is easily silenced, values can only reflect an arbitrary assertion backed up by the will. We are reminded of Nietzsche's 'overman' (1892, p. 129) who creates new values and of his contempt for the despicable last men of the 'end of history' who only ask to be happy.

'What is love? What is creation? What is longing? What is a star?' Thus asks the last man, and he blinks.

In the world of the last men, no one wants to rule², no one wants to be ruled; both activities are too troublesome. While this is not a recipe for inaction in general, it is a recipe for particular actions for which either reason is impotent, or will is non-existent or deficient in power. There is the attractive possibility, however, of the creation of new values by a new leader. Could this be a way out, possibility fraught with danger, of the inaction impasse? Nietzsche's recognition of the last men points to a future that is already with us. From what have we departed? A fleeting glance at earlier doctrine on practical virtue may be instructive.

3.5: Aristotle and St Thomas - Looking Back Before Looking Forward

Our brief discussion of possible underlying causes of inaction has served to suggest that failure to act morally (and therefore with appropriate speed) has deep seated roots which have a link to the development of thought on human action over the last two thousand years or so. While it may be, as Fukuyama suggests (1999), that there are cycles of morality in human society, should we look again, perhaps with renewed urgency, to the teachings on the moral order of the classics? While not a popular topic, the problem of the negative effects of the Enlightenment on the moral order of society has become a subject of more than passing interest in recent times (Martins 1998). Earlier work addressing this problem (for example, Pangle 1992) has often been ignored even though problems of the modern doctrines were articulated carefully. We must return, however briefly, to this teaching to see if it affords any way out of the lack of care and inaction problem.

² Some might though still seek out the trappings and privileges of the ruling classes.

The famous teaching of Aristotle's *Ethics* that the life of happiness is the virtuous life is all but forgotten in today's discussion (or lack of it) about how we ought to live. That teaching is regarded, along with his *Physics*, as outmoded and incorrect. We have moved on to more interesting and valid doctrines; few speak seriously any more of the development of character. However, while Aristotle's physics might not 'gel' with modern physics (which has been demonstrably successful), it does not follow that his teaching on ethics is similarly to be found wanting. In this connection, it is revealing that all the great philosophers have found it necessary to meet the challenge posed by Plato and Aristotle's teaching on the good life, the life lived according to reason. Recognition of this need must make us ask how successfully they have met that challenge. We have to remain open to the possibility that they may not have succeeded. And further, we have to recognise the possibility that Aquinas' welding of Classical and Christian teaching is equal, or superior, to both the classical and later philosophical accounts in this respect.

What is the essence of the Aristotelian teaching? For our purposes it is sufficient to note that, for him, ethics (along with politics and economics) was a practical science. It dealt with human activity for which the precise methods of the necessary sciences (such as mathematics) were not applicable. Aristotle was careful to note that we can only use the amount of precision suitable to the task at hand. This is a salutary reminder to those who seek to use mathematical methods in the explanation and prediction of human activity.

The moral virtues identified by Aristotle (for example: courage, temperance, liberality, magnificence, and justice) include two peaks: for private virtue that of magnanimity and for public virtue that of justice. His teaching is that the moral virtues are a type of intermediate or mean between two extremes (such as fear and confidence in the case of the virtue of courage) and that habituation is needed for the virtuous life. Thus the desire to act in a virtuous manner, to seek the good, has to be developed from early life. Only then, with the development of reason, can the virtue of practical wisdom be practised, along with the other moral virtues. We deliberate about the means, but not the ends.

This teaching is based on his proposition that nature does nothing in vain. Nature provides the standard and this is accessible at the practical level through human reason. While the moral or practical virtues operate within their own horizon, from time to time they may need theoretical defence: hence the link to intellectual virtue. Nature is the standard and provides the ground for moral virtue; for life lived in accordance with the highest possibilities for humanity, rather than the lowest. Furthermore, what is right by nature can be uncovered by unassisted human reason. While this provides a seemingly stable basis for action, it is not to say that natural right (what is right according to nature) is unchangeable. Aristotle does not suggest an unalterable set of ends.

3.6: Towards a solution of the action impasse?

How might such ancient doctrine be of assistance on solving the inaction issue? Although it is necessary to realise that Aristotle's polis is the all embracing community (not to be confused with modern notions of the state) and that for him

politics is the supreme practical science, it is clear that here is a teaching which emphasises the responsibility of each individual for their actions, both private and public. Further, here is a teaching that reinforces the need for habituation to moral virtue and yet recognises the central importance of reason. If the balance between the pursuit of self-interest in a calculating manner and moral action could be swung in favour of the latter, we might be much more successful in recognising and acting upon problems that impair the human condition. In such a world, people would be vitally interested in not only their own welfare but also that of other members of the community. It is unlikely that long time gaps between recognition of a problem and remedial action would be tolerated. Public spirit in action could be expected to be very observable. However, it seems the time is late. Recent wholesale acceptance of the move to 'globalisation' may have ensured the victory of calculated self-interest and installed the 'last men' as the mindless long term (or may be short term) inhabitants of the earth.

4. Conclusion

This paper used two cases to demonstrate that inordinately long lags can exist between awareness that a problem exist and the emergence of corrective legislation to counteract that problem. Why this is so, when simple but invidious technology is involved, is uncertain for in times of crises, response (and even preventive action) can be relatively swift. Explaining the delay turned out to be more difficult than at first expected. We are more certain in our belief that more work needs to be done on the explanation of time lags than we are in our ability to pinpoint possible main causes of them. Two categories of factors were suggested to be involved. The first category includes that plethora of elements common to business life and the human condition. These categories e.g. complexity, cost, time availability, can if worked on, be usually overcome.

The second category of factors, reason and will (and an associated framework of natural right) are quite something else again. But it is thought that the first category of factors very much depends on the robustness of reason and will and the moral and ethical framework through which they come into play. Three questions were asked. (1) Has reason been derailed in that its vision is fixed on measurement and "objectivity" rather than on discernment of right from wrong? (2) Has reason, which is often silenced by beauty, authority, bullying, and eros, now been silenced, in respect of its ability to discern right from wrong, by science. (3) Has humanity somehow lost its will to act? That is to say is humanity seriously flawed in the very basis of that thing which distinguishes it from other species, i.e. human reason?

Whatever the answer to this last question, all is not lost. We can agree on a noble lie. That is we can agree that humanity matters and function on the simple decision rule that it is unpardonable for one person's profit to be another's ill health and death. So let's all continue to work on, against any odds we face, to make this world a healthier and safer place.

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