

# Act 1: From Paint to Plumbism

## 1890 to 1922

### Scene 1: Dr Turner's Surgery - First Treatment of an Unknown Disease



- Enter Dr Alfred Jefferis Turner
- Born Canton (Guangzhou) PRC 1861, Died Brisbane Australia 1947
- Treats in 1890, what is later diagnosed as a case of lead poisoning.
- “A man of slight almost translucent figure, quiet small voice and an inability to sound his Rs; yet, through the quaintness, he showed a subtle humour and some unusual quality of strength”

Source for Photo and Quote :

<http://adbonline.anu.edu.au/biogs/A120324b.htm>

## Act 1, Scene 2: Laboratories, Conference Sessions in and Around Brisbane and Wider Colonial Australia



- 1892 Dr. J. L. Gibson presents his diagnosis of lead poisoning to the Medical Society of Queensland
- The diagnosis is controversial
- Staff from Brisbane Hospital for Sick Children investigate.
- Findings are presented at Third Session of the Inter-Colonial Medical Congress of Australasia in Sydney 1892. (10 cases plus Dr Turner's case).
- Born 1860 Ipswich Australia; Died Brisbane, 1944. Studied in Scotland, Austria, Germany and England

Source of Photo:

[http://www.publichealthreports.org/userfiles/120\\_3/120294.pdf](http://www.publichealthreports.org/userfiles/120_3/120294.pdf)

## Act 1, Scene 3: Restless Doctors Agitate and Disorder Follows in the House

- By 1897, 76 more cases of suspected lead poisoning were admitted to BHSC, 7 of whom died
- Doctors Turner, Love, Macnamara, Hopkins and others express annoyance and push for an inquiry
- May 30 1898 Commission is appointed and then closed down prematurely by the Home Secretary (October 3)
- December 3 1898 A Successful motion is passed by the Legislative Assembly but the Government does not act

## Act 1, Scene 4: Eureka! on the Veranda of a Queenslander



- 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". White lead = basic lead carbonate ( $2\text{PbCO}_3 \cdot \text{Pb}(\text{OH})_2$ )
- My next step was prompted by the mother of one of the four ocular neuritis cases, as she 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)

## Act 1, Scene 5: Enlisting the Cavalry

- Gibson 1905 presents a paper at the Intercolonial Medical Congress of Australasia in Adelaide
- Congress passes a resolution and transmits it to the Government
- Government acknowledges the problem but takes no action
- 1908 Turner presents a paper at the Australasian Medical Congress in Melbourne
- 1908 to 1917 Turner and Gibson continue to agitate for preventive legislation
- 1917 Gibson gains support from the Queensland branch of the British Medical Association who wait on the Home Secretary
  - 1921 Government promises draft legislation but takes no action

## Act 1, Scene 6: Manoeuvres, Battle, and Final Victory

- Master painters and lead producers bring on a Board of Trade Inquiry in New South Wales
- Dr S A Smith gives evidence which is used in the press against the British Medical Association position
- The Government sits on the fence
- Smith and the lead interests are silenced
- Preventive Legislation passed (September 1922) and enacted in 1923
- The time lag: 33 years from 1890 to 1923; 18 years from discovery of cause

## Act 2: From Plumbism to Kidney Disease

### Scene 1: Queensland Australia mostly from 1933 to 56 - Morgues, Hospital Wards and Laboratories



**RESTYLE YOUR HOME THE MODERN WAY**— old houses can be given attractive new looks with modern paint styling that emphasizes best features, subdues bad angles. Do it the economical way with long lasting white lead paint.

#### Early Suspicions

- 1897 Green: chronic nephritis in a 7 year old cadaver causally linked to lead poisoning
- 1897 Halford: granular contracted kidney in under 35s more prevalent in Brisbane than elsewhere
- 1917 Mathewson notes his lead poisoning patients returning 10-15 years later with chronic nephritis which he attributes to lead
- 1922 British Medical Association (Qld) suggests chronic nephritis is a late result of lead absorption

## Act 2, Scene 2: Investigations

- 1929 Croll: chronic nephritis death rate abnormal for Queensland (1309 for Queensland compared with 418, 421 and 436 respectively for New South Wales, South Australia and Queensland for under 40's (1917-1926.)
- 1929 Nye: of 86 chronic nephritis sufferers almost all had a history of exposure to lead
  - Finds higher hospital admissions in Queensland for lead poisoning
  - Performed physical examination and renal function tests on children previously diagnosed with lead poisoning
  - Implicated lead from weather board houses, nail biting, and thumb sucking
  - British Medical Association (Qld) presses Commonwealth Director for Health for an Inquiry who appoints R W Cilento.

## Act 2, Scene 3: A Series of Inquires

- 1930-32 Commonwealth Government Inquiry (R W Cilento): admitted some form of a relationship between lead poisoning and chronic nephritis but clouds the issue
  - Suggesting other associations: lead acting on otherwise morbid kidneys resulting from measles, syphilis, undiagnosed scarlet fever
  - Devalued the verandah theory
  - His conclusion: further investigation required
- 1933 Nye replies and demolishes Cilento's findings
- 1933 Queensland Government instigates an inquiry
  - Walter and Elizabeth Hall Institute/Dr. Keith Fairley
    - ★ Links lead poisoning to chronic nephritis
    - ★ Debunks: scarlet fever and other infections, drinking water from zinc tanks, lead arsenate spray
    - ★ Accepts the veranda theory as valid
    - ★ British Medical Association (Qld) agitates for total prohibition of lead paint in certain situations
    - ★ Queensland Government ignores the report of its own inquiry
- 1936-1939 R E Murray/Commonwealth Health Department
  - Vindicates white lead from paint as the source of lead poisoning
  - Links lead poisoning causally to chronic nephritis
  - Found a decreased incidence of lead poisoning which was attributed to education, better child care, and improved paint technology.

## Act 2 Scene 4: A Victory of Sorts



- 1945 Establishment of the Queensland Institute of Medical Research
- 1951-1958 Henderson research into lead poisoning
- 1956 Amendment to the Health Acts 1937 to 1949
- No white lead paint outside or inside of houses, on fences or gates, or on furniture
- No white lead paint can be manufactured or sold
- Exception: lead chromate paint can be used for trimmings

## Director's Cut (1)

Didactic Focus	Chosen Focus
The nature of scientific method	
The nature of political and or economic power	
Health communication	
Epidemiology and technology	
The power of one or of the few	
Bureaucratic systems	
Decision making under uncertainty	
Mind, will and morality	✓
Duty of care as an ethical driver for intervention to harm from work	✓
Professional ethics	

# Why the interest in the cognitive aspect of intervention to harm from work



- 1970s and 80s concern that sub clinical levels of body lead might be implicated in psychomotor impairment, hyperactivity and behavioural disturbances
- Griffith University study of lead in deciduous teeth of children
- History appears to repeat itself during the study
- Players
  - Lead research team members
  - Director of Industrial Health Queensland
  - Medical Superintendent of the Royal Children's Hospital
  - Occupational Physician to a Lead Producer
  - Specialist Paediatrician
  - Ghost: Foundation 41



Sources for Pictures: <http://www.science.org.au/academy/memoirs/walsh2.htm>;  
<http://www.griffith.edu.au/about-griffith/campuses/nathan-campus/photo-tour>

## Director's Cut (2)

### Societal Intervention to Harm from Work

Dimension ↓	Intervention Domains →							
	Diagnosis Clinical	Research	Political Drafting and Enacting Legislation	Public Adm. Law	Education	Technology	Design for Environment	Mores Reason Will
Ethical								
Political								
Philosophical								
Legal								
Economic								
Social								
Human Cognition								✓

# Cognitive Environments

## Premodern

- Right reason just desire
- The good life: reason with justice
- Reasoned demonstration

## Modern

- Reason falls to sentiment
- Hume's scepticism
- Moral sentiment: cognition is emotional
- New interest in the will

## Postmodern

- Humans construct their own realities
- Humans hold multiple truths and trot them out as appropriate
- If it works use it: anything goes
- Little interest in the will

## Three Insights

- Eric From: *Anatomy of Human Destructiveness*
- Manfred F R Kets de Vries and others
- Antonio Damasio: *Descartes' Error*

# Descartes' Error



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## Research Interests

The neurobiology of the mind, specifically, the understanding of the neural systems which subserve memory, language, emotion, and decision making

Photo Source: <http://www.facebook.com/pages/Antonio-Damasio/53118366563?v=photos#/pages/Antonio-Damasio/53118366563?v=wall>

## Descartes Error

- Descartes was wrong when he separated mind from brain and body. Yet his “I think therefore I am” rather than “I am therefore I think” pervades modern thought and to some extent compromises its potential.
- The separation of the most refined operations of mind from the structure and operation of a biological organism is wrong.

- Main purpose is to investigate the relation between reason and emotion
- Somatic marker hypothesis – emotion could assist reason rather than necessarily hinder it
- When emotion is absent from the reasoning process reason is more flawed than when it (emotion) plays bad tricks on reason
- Emotion marks certain aspects of a situation and certain outcomes of possible actions revealed overtly as gut feeling or covertly through chemical flows that can change the behaviour of neuron groups involved in choice.
- The brain systems involved in emotion and decision making are also involved in the management of social cognition and behaviour
- Without emotion social and ethical rules governing behaviour are not learned in the first place (early onset)
- Without emotion social and ethical rules learned in the first place are not acted on (late onset)
- Herein lies the basis for building a bridge between neurobiology and the humanities

# Conclusion

## Interventions to Harm from Work Possible ICOH Activity

- Reallocate funding to ensure all nations have ICOH secretariats
- Take a position on issues championed by the ILO and WHO and electronically communicate that position through its members for redistribution to national NGOs
- Establish a refereed electronic portal so that proceedings of all Scientific Committee Conferences can be distributed freely
- Work more closely, expediently and efficiently with major NGOs in good standing with the Economic and Social Council of the UN
- Participate with those groups or independently in selected major campaigns championed by the major groups under the work of the Commission for Sustainable Development