Death in a global age: Local responses to global trends in bodily disposal

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Outline of talk

• Key international and NZ trends in dying and how they impact the management of bodily disposal.
• Challenges these international trends present.
• Overseas responses to the challenges.
• UK based case study
Global trends linked to changing ways of living and dying

- New patterns of infectious diseases
- New patterns of non-communicative diseases & heath conditions
- New patterns of degenerative diseases
We now also live in a time of rapid and widespread global infectious disease surveillance. Customs officials and airline staff are duty bound to report any signs of illness on flights and at border crossings as they are one vanguard of global infections disease control. In March 2009, an outbreak of the new H1N1 “swine flu” pathogen was upgraded from level three to level four pandemic status by the WHO. The rapid, global spread of swine flu out of Mexico through handful of international flights out of Los Angeles was charted through hourly bulletins and warnings from WHO.

By the end of April 2009, the vast majority of about 2,000 cases had been identified in Mexico, with 51 in the US and 15 combined in the UK, Canada, New Zealand, Spain and Israel. All the 150-plus deaths from the swine flu were recorded in Mexico, with patients in other countries experiencing far less severe symptoms. The deputy head of the World Health Organisation, Fukuda, made explicit the global links and disparities between nations in connection with Swine flu. He urged countries to take the opportunity to prepare for a pandemic and suggested that special efforts should be made towards less rich nations which "really get hit disproportionately hard" by pandemics (Walker and Williams 2009).
Mr. Garza, a half-ton man, died of heart failure despite a rescue attempt that saw his bedroom wall demolished so he could be taken to hospital on the back of a lorry. The 47-year-old from Juarez, northern Mexico, was pronounced dead on arrival at hospital. He had always struggled with his weight but fell into a cycle of depression and overeating after his parents died within two weeks of each other. Weighing in at 70 stone 10lb (452kg) when he died, he had been bedridden for four months. The family wanted to cremate him but there was not an oven for someone his size. Funeral home worker Maribel Cantu said he is the biggest man they have buried. Mr. Garza’s coffin arrived at the cemetery in a white van. About 150 friends and family waited for more than four hours at the cemetery while carpenters built a special coffin and cemetery workers enlarged the grave. Twenty relatives and workers lowered him into the ground (Associated Press 2008).

Some populations seem particularly vulnerable to obesity including Hispanics, Māori, Pacific Peoples and African Americans (Swinburn, Sacks et al. 2011).

Obesity started to become a global problem over 30 years ago, and has been incrementing annually since then. Statistics show that in 2008, about 1.5 billion of the world’s adult population was overweight and over 500 million of these people were obese (Swinburn, Sacks et al. 2011).

Today obesity is responsible for over 2.8 million adult deaths per year worldwide (World Health Organisation 2011).

The growing prevalence of obesity related deaths nestles within a broader global trend. More people than ever before around the world are dying from what are called non-communicable diseases (NCDs).
The world’s population growth has a significant impact on death because it signals that the world’s population is aging.

A century ago, just one percent of the world's population was aged 65 and above a century ago. This figure has already risen seven-fold and will rise to around twenty percent by the middle of the 21st century.

In the UK today, eighty five percent of newborns can expect to celebrate their 65th birthday. And those now reaching 65 can expect to survive 16 more years if they are a man, or 19 years if they are a woman.

Over the course of the last half-century, life expectancy has continued to increase steadily by two years each decade. It is almost as if for every decade we have lived, we have gained an extra twenty percent free (Kirkwood 2001). The death rates of the older age groups are presently showing the greatest decline. It is these older age groups, those over 85 years, who now constitute the fastest growing segment of the population.

‘In 1960 Japan, there were 144 people who reached the age of 100 years; by 1997 Japan, 8,500 people became centenarians. In the UK in 1900 (Siddell and Komaromy 2003:44) twenty four percent of all death occurred to people over 65. In 1999, this figure rose to 83%’ (Kellehear 2007: 202).
Given that cemeteries are a feature of urban landscapes past and present, they are spaces that have long struggled with the difficulties associated with diverse and densely populated communities.

The problem of limited space has found new momentum. There is a global crisis in urban cemetery provision - and Christchurch is part of that.

This issue is now pressing because there are a series of pressures that are bringing the issue to a head and are briefly summarised in the box.

Different solutions to contemporary issues in bodily disposal abound and these solutions reflect the particular ways in which different authorities have negotiated their overarching concerns of limited space, hygiene, diversity and cultural integrity.

Contemporary issues in cemetery use (international)

Marked by urban communities with significant characteristics

- Ageing
- Diverse communities with different needs, plus new death awareness movement
- Political awareness of environmental footprint
- Global interest in heritage/ genealogy

Impact on cemeteries

- Predicted spike in demand in next 30 years (baby-boomers).
- Diverse expectations & demands made of cemeteries from community members (different ethnic/religious needs & increasing personalisation of death by non-religious).
- Increasing limited land availability & land use restrictions.
- Demands for preservation of old burial sites.

Increased pressure on existing cemetery provision
The first example is of a Chinese cemetery in Hong Kong. It illustrates how a highly urbanised society has achieved the provision of spaces for housing human remains that satisfies a mix of cultural needs while conserving and reusing land.

This image of the Victoria Rd Chinese Christian Cemetery in Hong Kong shows how traditions are upheld as different forms of internment are developed. In the image we can see on the skyline high rise columbaria with the older more traditional headstones in the foreground.

Fengshui is present in both forms of bodily internment in that both command impressive views of the sea – as seen in the second image. The sea view is auspicious, the underpinning principle of fengshui that is getting carried through from ancient to contemporary cemetery design that allows for longstanding beliefs and practices to adapt and exist in very contemporary, highly technical and urbanised settings. At the same time fengshui requires that people are interred in the most auspicious situation possible - an expansive view in sight of water.
The next example is Igualada cemetery, Spain. Here, the environment is less densely populated but more inhospitable. This has encouraged planners to develop highly innovative, recycled sites for respectful bodily disposal. Igualada Cemetery incorporates many innovative land uses.’ The Igualada Cemetery opened in 1990 and was the result of a design competition won by Enric Miralles (1955 – 2000) and Carme Pino’s (b. 1954) in 1985.

The cemetery has a remarkable context, as it is located at the edge of an industrial estate in a small town near Barcelona. There are no adjacent housing areas but instead the cemetery sits within a rough and deeply eroded river valley, which is colonised by native plants. Constructed from concrete, steel, wood and stone filled gabions, the cemetery will, over time, decay and the surrounding vegetation will gradually colonize the site’ (Clayden and Woudstra 2003:203).
Currently, there are a wealth of creative solutions being developed to cope with the internationally recognised issues in cemetery use.

These also include the development of eco-burial grounds, a legislative move to allow for grave re-use in the United Kingdom and the resurgence of community action groups seeking to turn closed, historical cemeteries into community gardens as a means to preserve the past.

http://www.independent.co.uk/environment/the-london-cemetery-pioneering-the-reuse-of-its-much-needed-burial-plots-9847672.html

New Zealand has its own set of issues that make its circumstances and solutions unique. For instance, New Zealand has not embraced eco-burials as rapidly or as much as other nations, preferring to use existing cemeteries in new ways by either developing specific areas or combining culturally diverse forms of memorialisation. New Zealand as a formally recognised bi-cultural nation with a increasingly diverse multi-cultural population has a unique situation: Maori burial grounds are separate from local authority cemetery provision, however, given the increasing mobility of people around NZ and from elsewhere, local authorities are responding by creating sections for non-local Maori within existing city cemeteries.
The New Zealand Context

• Growing population and limited availability of land – many city cemeteries near capacity and full within next two decade.
• Changed perception of acceptable land use
  – Ecological Sustainability
  – Cultural recognition (bi cultural and multi-cultural)
  – Heritage
Christchurch Cemeteries Master Plan

- The purpose of the Cemeteries Master Plan is to:
  - Guide, influence and advocate for the on-going integrated management and development of the cemeteries as public open space
  - Recognise the cultural and spiritual values in relation to burials and cemeteries and the sites of significance to Ngāi Tahu
  - Promote the protection and enhancement of the cultural and historical features of the sites
  - Ensure provision of land suitable for burial and ash interment for future generations
  - Promote and ensure safe public access in all cemeteries
  - Ensure the right of residents to be interred in any of the “open” cemeteries in the District
  - Retain, manage and promote the unique character of each cemetery
  - Advocate the use and management of the cemeteries as public open space reserves
  - Encourage the use of some cemeteries for public social activities

\textit{this list does not address the BIGGEST TENSION found in my research of overseas trends in cemeteries and cremation and that's the tension between hi tech and low tech sustainable bodily disposal infrastructures}

This summary of the Chch cemeteries master plan follows current convention in trying to meet all the expected needs and demands.

However, this list does not address the BIGGEST TENSION found in my research of overseas trends in cemeteries and cremation and that’s the tension between hi tech and low tech sustainably bodily disposal systems
Lobbyists for alternative models of disposal are split – not along lines of sustainability but the technological path to it.

“One interviewer noted that ‘the natural burial lobby have already lost the argument because what they propose isn’t demographically viable’ i.e. There is not enough space and too many numbers are dying for it to be anything more than a niche market for the wealthy & ecologically inclined (while it has eco-cache)"

Divide is ideological and between high tech and low tech solutions.

The low tech solutions are for the elite, while the high tech are for the ‘standard’ disposition.

The natural burial lobby have already lost the argument ‘because what they propose isn’t demographically viable … There is not enough space and too many numbers are dying for it to be anything more than a niche market for the wealthy & ecologically inclined (Co-op’).

Raises the question of should there be different options depending on wealth?
Big players are hedging their bets.

- While green and eco-burials seem to be the ‘new thing’, internationally, the big providers understand this is a niche market for the wealthy. While happy to service that niche, effective solutions to the real problems of lack of land, more deaths, and changing consumer attitudes and expectations (more culturally specific and more ecologically sustainable) puts the focus on high technology end of sustainable bodily disposal.

Recognised need for new technologies because


Cremation: Issues of phenomenal energy use and poisonous emissions (e.g. mercury) from existing cremation

Certain needs and problems need to be addressed:
- space, energy consumption, emissions, shifting cultural values and social expectations associated with disposition of the dead.
But I want a sustainable end...

- is green burial actually sustainable?
  - Low tech locks up considerable amount of land in perpetuity, there is also often a ‘hidden’ hi-tech component e.g. the use of digital markers and on-line memorialisation (in lieu of headstones) requires and relies on global satellite positioning infrastructure etc.
- hi tech options
  - being more energy efficient with what we’ve already got (e.g. recovery and reuse of wasted heat from crematorium in Worcestershire where recycles heat from burners in local swimming pool - met with strong community support and approval.)

Flashpoints around sustainability

ways this was talked about include - a sustainable form of bodily disposal has to be able to actually deal with the sheer number of dead bodies in a respectful and effective way that does not unduly impact upon the living.

Tensions include: low-tech and hi-tech –

is green burial actually sustainable? Many doubt it because it locks up considerable amount of land in perpetuity, there is also often a ‘hidden’ hi-tech component e.g. the use of digital markers and on-line memorialisation (in lieu of headstones) requires and relies on global satellite positioning infrastructure etc.

e.g.

between land use (as energy that gets ‘locked up’ and no longer usable in low),

being more energy efficient with what we’ve already got (e.g. recovery and reuse of wasted heat from crematorium in Worcestershire where recycles heat from burners in local swimming pool - met with strong community support and approval. [http://www.telegraph.co.uk/news/politics/9101874/Minister-praises-plan-to-heat-swimming-pool-from-fires-of-crematorium.html](http://www.telegraph.co.uk/news/politics/9101874/Minister-praises-plan-to-heat-swimming-pool-from-fires-of-crematorium.html)

And developing new technologies that can ‘merge’ with existing systems and infrastructures.
Hi-tech current contenders

- Three current contenders
  - Alkaline Hydrolysis (chemical dissolution) patented in U.S in 1888
  - Promession (using liquid nitrogen & vibration)
  - Flameless Combustion (using microwave and infrared energy)

- Focus on alkaline hydrolysis as is furthest along in terms of development of process, equipment and interest shown by key stakeholders in bodily dissolution (e.g. UK cremation society, funeral organisations, etc).
Oversight and regulation

• Catch 22 in UK
  – Not illegal so no requirement for legislative framework
• Uncertain legislative status in Australia and USA.
  – In practice, states in USA and Australia are ambivalent.
  – What kind of regulation (for health and safety and protection of the consumer would be needed) needs to be addressed.

Black holes
Not illegal so no requirement for legislative framework
To get a legislative framework – prompted by a ‘scandal’
Risk-averse … Funeral industry unwilling to provoke a scandal so as to prompt development of legislative framework or protection… …

there would be at least two tensions associated with the casket issue

One is putting in and taking out of the body. A traditional casket is still used for the funeral ceremony; the sealed silk coffin which is resomated with the body is placed inside. This means that after each resomation, there is a coffin left over’. While reusing coffins is one of the ‘scare stories’ of the funeral trade, this is a deliberate outcome of the process (because the alkali can only break down certain organic materials – not a standard coffin.)

Currently in the UK there is a push by the funeral industry to put regulations in place about the size, strength material and lining of coffins because they are increasingly finding that when people buy over the internet, the coffin isn’t strong enough to ‘hold’ the body. Or it is of an unusual size and shape - crematoria visited did mention they had had incidents when they had to shove and push a non standard coffin into the crem box as it wouldn’t fit into the unit. There are also accounts of the bottom detaching from the sides as the coffin has been lifted causing Occupational Hazard – lifting and also the possibility of fluid leakage which crem staff do not want to have anything to do with.

What kind of regulation (for health and safety and protection of the consumer would be needed) needs to be addressed
The technique, sometimes referred to as bio-cremation or resomation, uses a mixture of water and sodium hydroxide (lye), and involves heating the body at a high temperature, as well as at a high pressure, which allows the body to effectively be broken down into its chemical components. The result is a thick liquid substance and fine bone fragments which can be turned into ashes and returned to the family. The sterile liquid remains are then flushed into the sewer system or used as a fertilizer. A bit graphic to think of, but that’s how it works.

One commentator noted at some length that there is a huge problem with the fluid …. The example was given that there are technical and symbolic issues with the fluid - while the fluid is slightly alkaline, it can be safely put down the drains – in the same way that blood is flushed into existing sewage systems. However, it was suggested that the fluid from this process has much more symbolic weight that must be attended to somehow and the place of water in cultural symbolism would pay a significant part in the uptake of it as an option

‘here in the north, many have made their living on the sea –the North Sea – there is a strong cultural abhorrence of being lost at sea- a ‘watery grave’ etc. I just don’t see this process taking off in this part of the country – so there would be great variation because of symbolic reasons.

Bones sourced from
How re-useful and recyclable?

- Contradictory discourses
  - Flushing granny down the drain...yet blood from embalming goes into sewer system...
  
  - The yuck factor of re-using pristine artificial joints... but organ re-use is commonplace ...

One interviewer was at pains to stress that there is something missing from a lot of the work being done on resomation – putting it directly (I think he’s from Yorkshire!) These guys are a bit clueless about the symbolic side of the process – especially in terms of what you are left to deal with at the end...

Compatibility – was perception that there was a problem with compatibility in terms of existing beliefs, values and practices –

- people will have a problem with that ...(what exactly they’d have a problem with was ‘the fluid’. (flushing granny down the drain. Not in the north east as a watery end is culturally problematic- fishing / drowning.)

- but there was some confounding examples given of innovative adaptations in existing technologies – e.g. using waste heat from crematory burners to heat swimming pools, met with strong local support.

as what to do with what’s left e.g. Implants... Another rather significant benefit from resomation is that if you have any gold teeth or artificial hip joints, they will come out looking shiny and new – and can be used again.

This might appear to be rather distasteful but given that as a society we accept the idea of re-using other people’s organs, I can’t see that this would be any worse.
Building momentum?

• It requires acceptance and uptake by service providers before it can be offered as a choice for funeral consumers.  
  – This is because the units are expensive $500,000 investment in the ‘plant’ before can make it available alongside e.g. burial or cremation.
• Early innovators have been those who want to use the technology for their own needs (Mayo Clinic). Also, large international cremation industry service companies (Matthews International, USA and Aquamation Industries Australia) are incorporating the units into their product lists.

Innovators are NOT the inventors, but those who use the invention in the real world. They are using the invented technology to do new things in the world with it.

Who are the early adopters? “This is trailblazing,” said Steven Schaal, the division manager of sales and marketing for Pittsburgh-based Matthews International, one of the companies selling the machines. “We’re getting a lot of inquiries from places like California, Oregon, Washington. They have an audience that is already environmentally aware. They already go to Whole Foods. They already drive hybrid cars.” Since 2002, Mayo has used alkaline hydrolysis to dispose of about 500 bodies that had been donated for medical research. Next of kin are given the option of choosing other means of disposal, he said, and only one family has asked for a more traditional cremation, by fire.

Alkaline hydrolysis Emerged, like cremation, from bio-safety of contaminated bio-material. (Cremation was first used in Argentina to dispose of typhoid & cholera infected corpses- Encyclopedia of Cremation). Current technical form of alkaline hydrolysis developed in response to need to dispose of toxic bio-matter. (BSE etc)  
  Developer saw it may have application in funeral industry as a more sustainable, energy efficient technology that would maintain respectful and dignified transformation of the body into component parts (ash).  
  Two existing patented units – Resomation (rolling out in USA) and Aquamation (rolling out in Australia)  
  Key early adopters of the technology have been medical hospitals who use the process, alongside cremation units to render contaminated/ toxic body parts inert for subsequent disposal. (Mayo Clinic)
On the brink

• Bio-cremation is ‘on the brink’ as an effective third option for bodily disposal in the UK, USA & Australia.

• Solutions? Make it morally and economically affordable. Incorporate new methods into existing infrastructure and many people will accept it more willingly than expected.
Conclusion

• Popular and media focus is eco or green burial but REAL trend is towards hi-tech sustainable solutions that can ‘nest inside’ existing infrastructure and service provision.

• Key tensions to negotiate
  – Legislation and regulation

  – Integrating into existing infrastructure

  – How customers perceive the new technologies in relation to their own cultural beliefs and values.