Dissolve and Flush: Funeralized Alkaline Hydrolysis.
The Newest Technology for Disposing of Dead Human Beings.

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In the West, interment, inhumation, entombment have been the traditional methods of disposing of dead human bodies, that is, prior to the late 19th century with the revival of cremation as an alternative. Until about 1880, cremation was anathema, unless, occasionally, at times of extraordinarily large numbers or dead, such as during war time, during epidemics, or following natural disasters, mass graves or incineration of the corpses was preferred to avoid further catastrophe in terms of public health. Fire cremation was revived in the West as a quasi-pagan option attributed to non-Christian freethinkers and masons or simply to anti-social elements but then took a different tack by appealing to the public health and environmentally conscious elements in conventional society. Today, economic concerns both consumer and industrial take precedence. The dominant market economies in the industrialized West, particularly in the USA, UK, and some Western European countries, as well as the insatiable appetite of post-modern, post-Christian cultures for novelty and individualism, have left the door ajar for the entry into the funeralization professions of an industrialized process called alkaline hydrolysis (AH), an industrial process invented in the late 19th century as a way of dissolving in strong chemicals farm animal waste for use as fertilizer.¹

What was once the dignified and trusted funeral profession has now become a blasphemous waste disposal profession thanks to the greed and immorality of a vociferous, shameless few.

"Omnes homines terra et cinis." Sirach 17:32

¹ See also History of Alkaline Hydrolysis by Joseph Wilson. Wilson is the chief executive officer of Bio-Response Solutions, one of the first companies involved in the industrialization and marketing of alkaline hydrolysis for the disposition of human bodies. Joseph H. Wilson, *The History of Alkaline Hydrolysis*, e-pub, September 2013, 3, [http://www.goodfuneralguide.co.uk/wp-content/uploads/2013/09/History-of-Alkaline-Hydrolysis.pdf](http://www.goodfuneralguide.co.uk/wp-content/uploads/2013/09/History-of-Alkaline-Hydrolysis.pdf) (last accessed on October 29, 2017). The original patent filed by A.H. Hobson, U.S. Patent No. 394982 (1888), describes the process as a “... process of treating bones, which consists in digesting the bones in an alkaline solution in the presence of heat, then separating and concentrating the solution, thereby forming glue, gelatine, or size, in then digesting the remaining hone in a strong alkaline solution, so as to completely dissolve the remaining nitrogenous matter, and bring-the same into a more readily assimilable form...” (Claim 2), and as “certain new and useful improvements in the treatment of bones and animal waste or refuse generally for the purpose of rendering the same more suited for fertilizing purposes, and for obtaining gelatine, glue, and size...” ([https://docs.google.com/viewer?url=patentimages.storage.googleapis.com/pdfs/US394982.pdf](https://docs.google.com/viewer?url=patentimages.storage.googleapis.com/pdfs/US394982.pdf) last accessed on October 28, 2017).

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In a particularly beautiful description of how the pre-Vatican II Church thought of the human being, and in poetry that was possible only in a more sensitive epoch of human history, one reads: \(^2\)

“The old Church holds on to her dead with eternal affection. The dead body is the body of her child. It is sacred flesh. It has been the temple of a regenerated soul. She blessed it in baptism, poured the saving waters on its head, anointed it with holy oil on breast and back, put the blessed salt on its lips, and touched its nose and ears in benediction when it was only the flesh of a babe; and then, in growing youth, reconsecrated it by confirmation; and, before its dissolution in death, she again blessed and sanctified its organs, its hands and its feet, as well as its more important members. Even after death she blesses it with holy water, and incenses it before her altar, amid the solemnity of the great sacrifice of the New Law, and surrounded by mourners who rejoice even in their tears, for they believe in the communion of saints, and are united in prayer with the dead.

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\(^2\) By way of precluding any possible suggestion of supercessionism, I would like to state from the outset that I am citing Roman Catholic writers in much of this discussion not because I am so biased but because I would rather use as my foundation a more systematized, mature, and stringent authority, which, if necessary can be attenuated or mollified *mutatis mutandi* in further arguments, rather than a more loose, liberal, or permissive approach as represented by the more progressive Protestant or post-Christian denominations. Although I practice as an interfaith chaplain, I am steeped in a more classical tradition than many of my contemporaries, and I ask that my readers take that subjective proclivity into consideration when reading my statements.
happy in heaven, as well as with those who are temporarily suffering in purgatory. The old Church, the kind old mother of regenerated humanity, follows the dead body of her child into the very grave. She will not throw it into the common ditch, or into unhallowed ground; no, it is the flesh of her son. She sanctifies and jealously guards from desecration the spot where it is to rest until the final resurrection; and day by day, until the end of the world, she thinks of her dead, and prays for them at every Mass that is celebrated; for, even amid the joys of Easter and of Christmas, the memento for the dead is never omitted from the Canon. She even holds annually a solemn feast of the dead, the day after “All Saints,” in November, when the melancholy days are on the wane, the saddest of the year, and the fallen leaves and chilly blasts presage the season of nature’s death.”

The Church of bygone days frequently used prose poetically and quoted liberally from the Church Fathers and even from the ancient philosophers and historiographers like Plato, Seneca, Socrates, Cicero many of whom, though pre-Christian, did not eschew the notion of the immortal soul. St Augustine writes, “We should not despise nor reject the bodies of the dead; especially we should respect the corpses of the just and the faithful, which the Spirit hath piously used as instruments and vessels in the doing of good works...for those bodies are not mere ornaments but pertain to the very nature of humankind.”

Cremation made an occasional appearance in isolated periods of Western history or in outlier regions where Christianity had not yet attained dominance; cremation was largely associated with non-Christian, pagan cultures.

In the East, in places where Hinduism and Buddhism had a firm foothold, cremation was and continues to be the norm. In some geographical areas such as in parts of Tibet, where the ground is unfavorable to interment and wood is a scarce and valuable resource, exposure of the corpse or dismemberment of the corpse and consumption by carrion-eating birds, so-called sky-burial or, in its form where the dismembered corpse is cast into a fiver for consumption by fishes, water burial, is practiced.

A similar practice of exposure is found in Zoroastrian communities in Iran, in the so-called towers of silence or dakhma, where the dead are brought, exposed, and consumed by vultures; the skeletal remains are then later collected for disposal.

While isolated instances of cremation are reported both in the Old Testament and in the New Testament, burial or entombment was conspicuously the norm. In the Judeo-Christian tradition, burning of a corpse was a final act of abomination, reserved for only the worst elements of society.

One of the common misapprehensions of the Church’s aversion to or discouragement of incineration of the human body as a routinely available option for final disposal is that it was associated with pagan or freethinker practice, or with attempts to dissuade believers from faith in a bodily resurrection. While this might have some historical substance and may be represented by some early writers, it is but a minor hypothesis.

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As Eusebius describes early Christian aversion to flame cremation in a statement that still holds plausible, ""they (the Pagans) did this (cremated) to show that they could conquer God and destroy the resurrection of the bodies, saying, now let us see if they will arise." In other words, cremation was a challenge to the belief in bodily resurrection as taught and believed in the early Church.

Furthermore, no less a figure than Cicero advances the notion that incineration was of ancient practice in Rome, and suggests that inhumation was a practice that predated the Roman practice of cremation. In fact, some noble Roman families never permitted their bodies to be burned, and Sulla is said to have been the first Roman who ordered his body to be cremated after death, *lest his bones should be scattered by his enemies.* The pontiffs of pagan Rome would not acknowledge a funeral to be complete unless at least a single bone cut off from the corpse, or rescued from the flames, had been de posited in the earth.

Ancient Greece and Rome did practice cremation at various points in their histories but the ultimate disposal of the remains continued to be burial; either a part not consumed by the flames or the “bones” of the cremated corpse were ultimately buried in the earth. Cremation was by no means consistently the norm or the preferred method of disposal in Greece or in Rome.

Pope Boniface VIII forbade all violent modes of disposing of the dead as savoring of barbarism. "The respect due to the human body requires that it should be allowed to decay naturally, without having recourse to any violent system;" so says Grandclaude. A forcible argument against cremation is also found in the Catholic custom of preserving and honoring the relics of the Saints and putting their bodies or portions of them in the altar. It would be no longer possible to have the most important relics of future Saints if their flesh were to be consumed by fire.

That brief sampling of ancient teachings and beliefs regarding the question of incineration of human remains, arguably a “violent system” of disposing of human remains, should suffice to provide a background for the remainder of this discussion. For a more detailed discussion, I refer the reader to the Reverend Bann’s article cited above.

It was only in the late 19th century that a cremation movement came into being, and then only owing to the deplorable conditions in the cities which were rapidly outgrowing their boundaries due to

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5 Desecration by scattering of one’s bones appears to be a thread running through much of ancient human history. Compare Sulla’s concern with the Biblical account (I Kings 31:12) of the incineration of the bodies of Saul and his sons to prevent desecration by the Philistines.
immigration from rural areas, and the resulting encroachments on the previously outlying churchyards and, with population growth and densification, poor sanitation, and high mortality rates, consequent overfilling of existing cemeteries literally to the point of overflowing.

Such were the conditions that gave rise to the public health concerns of reformers who claimed that the dead in the cemeteries were evil, that their miasmas leached out into the water and the spaces of the living, causing disease, suffering, and death. It was the evil dead rotting in the earth and their juices that were public health enemy No. 1. The open sewers and living conditions of the larger cities, and the putrid waters of the rivers flowing through them, of course, were not to blame.

And so, an alternative method of disposal of the dangerous and filthy dead had to be found, one that did not threaten to gobble up valuable real estate, and one that could be justified in the face of Church and religious objections. Cremation was the most obvious answer for purifying the unclean corpses. After all, since time immemorial fire was the great purifier.

In the beginning, therefore, the initial impetus was the miasma theory of pestilence, and corpses were to blame. Then, around 1880, the germ theory of disease was born. It debunked the established miasma theory of disease, and stated that disease was caused by specific organisms, germs. No problem for the cremationists, who were quite agile in dropping the miasma theory and accepting the germ theory but corpses were not yet off the hook, so to speak.
If germs were the cause of many of the diseases afflicting the population, wouldn’t the putrid rotting corpse be germ heaven? And if you have all those corpses lying about doing nothing but what corpses do, that is, rotting and defiling the air with the aromas of putrecine and cadaverine. Those same rotting corpses were breeding grounds for pestilence and a simple hole in the ground was not very likely to contain the little vermin. Cremation, the great sterilizer, would be the cremationists’ next slogan. But it didn’t last long.

The interests of the economic-minded would carry the day both in terms of the environment and the economy, and that campaign agenda is with us to this day. Basically, the dirge goes: “Why allocate so much valuable land to the dead when the living can profit by it?” Land for the living! After all, as corporations like StoneMor can confirm, cemetery real estate and the real estate occupied by the cemeteries represents a vast fortune. Someone has to tap into it.

The countries of Europe afflicted with the spirit of rationalism had no problem dealing with cemeteries; they just overruled the Church and legislated that the state had ultimate control of the citizen in life and in death. The Church could fall back on canon law but ultimately had to acquiesce to the state’s overwhelming power, and so the cemeteries were secularized. Once secularized they were emptied and their occupants relegated to ossuaries or catacombs en masse, and anonymous in their tens, even hundreds of thousands. In many instances, their eviction from the cemeteries and relocation to the quarries was done under cover of night, in order not to offend the living or present an obstacle to commerce.

France was one of the first to start the desecration of consecrated ground, and the defilement of the dead.

In countries where the Church, Roman Catholic or mainstream Protestant dominated, the faithful were expected under established sanctions, to obey the doctrines of their faith. For most mainstream Christians, and for all Orthodox Jews and Muslims, cremation was an abomination, and burial in the earth or entombment were the only acceptable methods of sepulture. And so it remained until 1963, when the Roman Catholic Church relieved it’s ban on cremation and, while not encouraging cremation, did not censure those who opted for incineration as their preferred method of disposal. Upto then, those choosing cremation were pro forma classified as apostates, atheists, pagans, free-thinkers, or Masons.

The 1960’s was a decade of revolutionary reform in practically every aspect of life: politics, religion, morals, education, all of which ultimately found expression in attitudes towards life, death, dying and after-death.
Alkaline hydrolysis (AH), aquamation, resomation, biocremation, call it whatever you like it all literally boils down [no pun intended] to taking a dead human body, placing it into a pressure cooker, adding water and chemicals, heating, cooking, draining, rinsing. The dissolved flesh and organic matter is then flushing into the sewer system. What is left is bones and any metallic or synthetic material in the body (artificial joints, pacemakers, sutures, etc.). The metal such as artificial joints etc. will be recycled or “repurposed.” The bones will be dried and ground up into a sandlike powder and returned to the family or otherwise disposed of.

The actual patented process, alkaline hydrolysis (AH) is a process developed for waste disposal. “Waste disposal” is the actual term used in the patents. AH was developed for disposal of infectious or hazardous waste by dissolving it into a “safe and sanitary” end-product. In fact, the actual wording of one of the patents is: “it is an object of this invention to provide a system and method for safely treating and disposing of waste matter containing undesirable elements, such as infectious, biohazardous, hazardous, or radioactive elements or agents.”

AH was developed for dissolving, liquefying organic matter into a disposable liquid that can be recycled as a fertilizer or simply flushed down the drain. It’s actually a technology that was developed in the late 19th century for disposing of animal waste, and which was developed in the mid-20th century for disposal of farm slaughter waste and for elimination of medical school cadavers, is now being promoted as the new eco-friendly take on cremation. Alkaline hydrolysis a.k.a. water cremation a.k.a. biocremation — in reality just using a Drano®-like chemical to dissolve the dead human body and flush the remaining human sludge down the drain into the public sewer system — is the new rage in technology. Some funeral homes in about 14 states, where the process is now legal in the United States are now offering it as an alternative to cremation. It’s disgusting and will be a hard sell, since it will be acceptable only to the really bizarre element out there. I hope to clarify some of the issues in this article.

This is no way to dispose of our human dead!

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7 "Aquamation: A Greener Alternative to Cremation?“ By Marina Kamenev/Sydney, Tuesday, Sept. 28, 2010 (http://content.time.com/time/health/article/0,8599,2022206,00.html, last accessed on October 28, 2017)
8 "Innovation in sustainable end of life choices“ the slogan of the Scottish company Resomation® (http://resomation.com/, last accessed on October 28, 2017).
The Informed Consent Version\textsuperscript{10}

Normally, when ethically discussing what will be done to you or to someone over whom you have some sort of control, we have laws that require full disclosure of the risks and benefits involved in the process or the procedure. Keeping that in mind, I thought it might be a bit of fun to draft a short “Informed Consent” statement for AH. Here’s what I came up with:

**Informed Consent**

As part of your pre-planning for your aftercare you have selected a method for the final disposition of your mortal remains. The method you have chosen is called alkaline hydrolysis or “liquid cremation.” While AH has been called liquid cremation, water cremation, aquamation, resomation, AH has nothing to do with conventional cremation in that no flame or very high temperature (usually 1500-2000° F) is involved. In fact, the associate of AH with the term “cremation” is erroneous and misleading. AH is a chemical process in which the body is dissolved in chemicals. No flame or fire is involved in the process.

The law requires that we disclose to you all known risks and benefits of this procedure so that you are fully informed; in addition, we are required to provide you with sufficient time and opportunity to ask any questions you may have and to receive appropriate satisfactory answers to your questions. You will be asked to sign a statement certifying that your choice of disposition method was made voluntarily and you were not pressured into making any particular decision. Your signature also certifies that you have had an opportunity to ask questions and that your questions have been adequately and satisfactorily answered. The law requires also that we provide you with a copy of this Informed Consent Form signed by all parties, including any witnesses. We will now describe the process of AH and its risks and benefits to you.

After your death and the release of your dead body to the funeral home, your body will be routinely prepared for the funeralization you have requested.

**Aftercare and preparation:** The requested funeralization preparations may include: washing and disinfection of your body, embalming of your body, cosmetizing, dressing, laying out, casketing, viewing, transportation, final disposition by alkaline hydrolysis (AH).

**Final disposition:** You have chosen AH for the final disposition of your body. AH is not cremation but is an alternative disposition method involving low temperature heat, chemicals, and water.

- In preparation for final disposition of your body, all clothing and accessories, including any jewelry etc. will be removed from your body, inventoried, and carefully packaged for return to your family.
- Your naked body will be wrapped in a bioplastic sheet, which is a sheet of plastic made of biodegradable material, similar to the materials of the human body. The Bioplastic sheet will dissolve along with your body.
- Your wrapped body will then be placed on a porous stretcher or rack and inserted into the processing chamber. Once in the chamber, the pressure door will be closed and secured. Once the chamber is sealed, water and a solution of concentrated alkaline solution, usually potassium

\textsuperscript{10} This “Informed Consent” is intended for illustrative purposes only. It is factual in that it describes the practical processes involved in funeralized AH for the disposal of dead human bodies but does not claim to have legal effect nor does it claim to be implementable in any practical situation. It does not represent the informed consent process in any particular funeral home operation. This illustrative example does not purport that an actual informed consent procedure is required by any state, provincial or federal law for funeralized AH disposal of human remains.
hydroxide, will fill the chamber. The chamber will then be heated to a high temperature (about 350 °) and held at a high pressure for about 2-4 hours. During this time your body will dissolve completely into a liquid that is about the consistency and color of strong coffee.

- Once the dissolution process is completed, the digest (the dissolved parts of your body) will be drained out and flushed into the public sewer system. The chamber and its contents will then be rinsed completely.
- The dark-brown syrupy solution of your digested body will be mixed with other sewerage and treated in a waste-water treatment plant. Depending on the local process, the sludge resulting from the waste-water treatment process may be incinerated.
- The chamber will be normalized in terms of temperature and pressure, opened and the contents removed. These contents will include only inorganic bone remains, any synthetic material such as plastic or silicone protheses, any metal components such as artificial joints or inserts or pacemakers, etc. The synthetic material will be separated from your bones.
- The synthetic material may be recycled or repurposed or reused, depending on its nature.
- Your bones will be carefully segregated and allowed to dry. After drying, the bones will be placed in a special machine which will grind them down into a fine, sandlike consistency, which we will refer to as the ash. The ash will be carefully packaged and placed in a container or urn. If you have instructed that the ash be returned to your family the ash will be either placed in a suitable container or an urn of your choice.
- The packaged ash will then be returned to your family or further processed according to your instructions.

Risks and Benefits of Alkaline Hydrolysis

The risks and benefits of AH have not been conclusively proven; there may be risks and benefits that are unknown at this time. The known risks and benefits include, but are not limited to the following:

Risks

- Total destruction of the body, including RNA and DNA, that is, no identifiable component remains that could be associated with the identity of the body;
- Malfunction of the AH equipment;
- Contamination of water and soil, or other environments with the digest;
- Admixture of components of previously processed bodies in the same system (the AH system or the grinding system);
- Mistake by the operators of the system;
- Fraud by the funeral services provider or by the operators of the system;
- Confusion or mislabeling of the remains returned to the family,
- More expensive than conventional cremation;
- Other risks unknown at this time.

Benefits

- The body is completely destroyed.
- Lower cost than traditional funeralization (interment, flame cremation, etc.)
- Complete sterilization of the digest. All known infectious agents are allegedly destroyed.
- Complete neutralization of chemicals. The process significantly dilutes or neutralizes most chemical in the body, including chemicals used in the cosmetizing and embalming process;
- The body is reduced completely to inorganic components (mineral bone and synthetic, non-hydrolysable components) and liquid containing all soluble and organic components in solution;
• The inorganic components are segregated and the natural remains, such as bone, are easily processed.
• The digest is flushed into the sewer system and processed in municipal waste treatment facilities;
• The carbon footprint of AH is allegedly lower than in the case of burial or cremation;
• The space requirement of the final product of AH is less than traditional burial (less real estate is compromised);
• No atmospheric contamination is created by AH itself, that is, no greenhouse gases or vaporized chemicals are released into the atmosphere. This does not take into consideration any further processing of the waste water containing your dissolved body, such as incineration of the wastewater treatment sludge, however.

The Patent Version

This need is satisfied and the limitations and expenses of the prior art are overcome, in accordance with the principles of the present invention, by providing a system and method for producing a safely disposable solution and solid waste from infectious or biohazardous human or animal tissue, regulated medical waste, or any other material containing undesirable elements. This invention provides a system for producing a safely disposable sterile solution and sterile solid waste, comprising a sealable tank or vessel capable of containing a highly basic solvent therein, heating means for heating the highly basic solvent, filtering means, means for removing the odor created by such activities, means for removing the post-digestion resultant aqueous solution and any solid waste from within the vessel, and means for disposing of the resultant aqueous and/or solid waste via conventional means.

The method provided by the invention generally comprises the steps of providing a sealable vessel, filling the vessel with a highly basic solvent, immersing the waste matter containing the undesirable elements within the highly basic solvent, and heating the highly basic solvent. The waste matter is allowed to remain within the highly basic solvent until the hydrolysable matter is digested, thereby forming a sterile solution and sterile solid waste. The aqueous solution and any resultant solid waste may then be disposed of through conventional means, such as a sanitary sewer or local landfill facility.

Getting ready to turn someone's loved one into sewer sludge.

The language of the patents from 1888 to 2010 make it unmistakably clear that the system and the method of AH patented for the disposal of animal remains is a method developed for the safe and sanitary disposal of hazardous biological waste. It is patently clear that those manufacturing and marketing the AH systems, and those funeral homes and funeral services providers who are purchasing them, in order to sell services using them, are not funeral professionals but *disposal professionals*.

**The AH Marketing Version**

Marketers and manufacturers are again "greenwashing"consumers with their smoke and mirror presentations.

AH is facing a great number of obstacles in gaining acceptance politically, socially, religiously, and within the funeral services industry. The marketing strategy of the AH manufacturers and sales organizations is counting on the wider acceptance of flame cremation or incineration in western cultures, although that acceptance may soon be peaking out — and using flame cremation as a stepping stone for making AH more acceptable and palatable to the more liberal elements of society.

What we can find as information sources other than the patent applications and the scholarly articles on the subject is complemented by the industry hype and happy-clappy language used in the marketing material provided at funeral services conventions and on the Internet.

As with all new technologies and the hype that accompanies the half-baked claims that accompany the marketing language, the consumer as well as the researcher is well advised to read carefully between the lines, and to be a critical consumer. All that flushes legally may not be all that environmentally or ethically squeaky clean.

Funeral directors have worked hard to get their profession legitimized and have reached a status comparable to physicians, lawyers, and other professionals. Because of their specialized knowledge and skills, funeral directors are subject to licensure and their operations are regulated by specific laws. In fact, the funeral director is a bridge between the healthcare and the religio-spiritual professions, and is frequently called upon to mediate between both, while maintaining a special identity.

Since funeralized AH is a process now applied to the disposal of dead human beings in the context of funeral services as opposed to medical education purposes or biomedical waste, it is or should be in the purview of the funeral services provider, the funeral director, and as such, should be or remain in the...
same category as interment, entombment, flame cremation (incineration) but remain a separate process.

One of the subterfuges, ploys if you prefer, of the AH marketers has been to call AH "cremation" or to at least include “cremation” in their synonyms for AH. It is their hope that by doing so it will (1) by association with the already widespread and acceptable disposal by fire, AH will also gain some foothold, (2) that by association with cremation, regulations applicable to flame cremation might somehow seamlessly apply also to AH, despite the clear and conspicuous differences between the two processes, (3) that funeral directors will be more inclined to view AH as more of a complement to their palette of services, rather than a competitor to their now quite profitable cremation business, (4) that faith and belief traditions, that is, religious and faith leaders, who accept or at least tolerate flame cremation will be more inclined to look at AH as substantially equivalent to flame cremation, and accept it in like degree, (5) in locales having large Asian populations or large Hindu and Buddhist communities, AH will move in alongside flame cremation as an acceptable practice, even supplanting flame cremation, thus capturing a sizable consumer group.

Rather than reproduce the marketing hype on resomation, biocremation, water cremation, aquamation that is easily accessible by a relatively simple Google search, I'll simply say that what such a search will find is what any reasonably thinking person would expect. The companies like Resomation (headquartered in the U.K.), Matthews Cremation Division\textsuperscript{12}, Aquamation International\textsuperscript{13}, Bio-Response Solutions\textsuperscript{14}, and others all claim to be the “market leaders” in AH technology. All claim to be the ecologically friendly, green answer to disposing of dead human body waste. All of them paint a much sanitized picture of a really disgusting and grotesque process. All claim that their process is dignified and acceptable. What would you expect from organizations marketing waste disposal systems cosmetized to pass for a dignified method for disposing of our dead loved ones? They have to attract consumer interest, sales opportunities and investors, and you can’t do that by being truthful.

One indicator of the fact that dissolving human bodies in a hot caustic Draino®-like solution and then flushing the resulting sludge and slurry down a sewer drain is not dignified and is not equivalent to flame cremation is the total lack of interest in the process by those traditions using flame cremation as their standard method for dispatching their dead: Hindus and Buddhists. That right there should tell you something.

\textsuperscript{12} Matthews Cremation Division produces equipment for human cremation, pet cremation, AH (for Resomation Ltd.) as well as products for these processes. According to their website, "Matthews Cremation Division is a globally recognized expert in cremation combustion technology. Our products and services meet the most demanding performance and environmental standards worldwide. With manufacturing facilities on three continents and nearly 4,000 installations worldwide, Matthews Cremation Division is dedicated to providing our customers with highest quality of products and services in the industry." (https://www.matthewscremation.com/us/ last accessed on October 28, 2017).

\textsuperscript{13} According to the Aquamation website, "There is overwhelming public interest in Aquamation International's work. Our patented Aquamation technology is an industry leader. Aquamation International is the market leader in developing and implementing Eco / green funeral solutions." (http://www.aquamationindustries.com/ last accessed on October 28, 2017).

\textsuperscript{14} Bio-Response Solutions, Inc. describes themselves as "Bio-Response Solutions, Inc. specializes in the design, production, and implementation of custom biowaste treatment systems. This includes Biokill liquid decontamination systems (Effluent Decontamination Systems - EDS) and alkaline hydrolysis tissue digesters for research laboratories. Our systems can be found in BSL 1-4, BSL3ag, and pharmaceutical institutions. We take great pride in providing the safest, most technologically advanced, and easiest to own systems in the world." (http://bioresponsesolutions.com/Aboutus.html last accessed on October 28, 2017)
One of the flimsy arguments provided by proponents of AH is that it is the environmentally friendly alternative to currently mainstream disposition methods, burial and flame cremation. The clichéd drone goes something like this: “Burial in the ground takes up space. Burial in the ground uses up massive resources in wood, metal, and concrete. Burial in the ground can contaminate the environment. Burial in the ground is expensive.” Hogwash! Let’s move on to the AH critique of flame cremation.

Proponents of AH claim that flame cremation is environmentally unfriendly and adds to the carbon footprint, while producing greenhouse gases and harmful emissions, like mercury. Purest nonsense. Modern, maintained crematories are strictly regulated and have sophisticated systems for cleaning any exhaust gases produced in the flame cremation process. Given the claim that flame cremation uses non-renewable energy to produce the heat required to generate the high temperatures required to reduce a human body to ashes, the AH process also uses considerable energy to operate the system and to complete the process, which then dumps the digest, the dissolved body, into the sewer system. That byproduct must then be treated in municipal sewerage treatment facilities, or it must be processed into fertilizer or some other useful product. The proponents of AH would have us believe that the chemicals used in the AH body-dissolving process are strong enough to dissolve an entire human body in a matter of about 3 hours but are totally innocuous when flushed down the drain. Even if that were true, I don’t quite fancy thinking that grandpa is in that glass of water I’m drinking or that I’m showering in what’s left of aunt Mary.

The AH Sludge. This is the result of digesting the body, and will be flushed into the sewer system.

OK. So you say, “What if we don’t flush the digest into the sewer system? Can’t we put it into containers and dispose of it some other way?” Nice thought but HOW? Say you put the digest into a drum along with the rinse water used to clean the system. The amount of water used in the digestion process plus the amount of rinse water would come to 150+ gallons of water per body dissolved.
When it comes to environmentally friendly, granted the so-called “fossil fuels” are used in flame cremation are not used, but here are the utilities needed for low-temperature and high-temperature AH:

**Features and Specs for a Typical AH System**

<table>
<thead>
<tr>
<th>Capacity</th>
<th>Capacity</th>
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</thead>
<tbody>
<tr>
<td>• System size: 0-495lb (0-225kg) Larger custom sizes available</td>
<td>• System sizes available 0-525lb (0-238kg) Larger custom sizes available</td>
</tr>
<tr>
<td>• Turnaround: 12-16 hours; up to 2 dispositions per day</td>
<td>• Turnaround: 6 hours; Up to 4 dispositions per day</td>
</tr>
<tr>
<td>• Operating Temperature -199-208°F (92.5-97.8°C); User-Selected</td>
<td>• Operating Temperature: -199-302°F (92.5-150°C); User-Selected</td>
</tr>
<tr>
<td>• Drain/Sewer Connection</td>
<td>• Drain/Sewer Connection</td>
</tr>
<tr>
<td>• Fresh Water Supply (cold and hot water recommended)</td>
<td>• Fresh Water Supply (cold and hot water recommended)</td>
</tr>
<tr>
<td>• Vent Line</td>
<td>• Vent Line</td>
</tr>
<tr>
<td>• Electricity : 208/220 Single-phase, or 208-600V 3-phase, 50 or 60 Hz</td>
<td>• Electricity : 208/220 Single-phase, or 208-600V 3-phase, 50 or 60 Hz</td>
</tr>
<tr>
<td>• CO2 (50 pound bottles; can be ganged together, or a 400 pound dewar)</td>
<td>• CO2 (50 pound bottles; can be ganged together, or a 400 pound dewar)</td>
</tr>
<tr>
<td>• Approximately 150 gallons of water, hot and cold</td>
<td>• Live Steam Option (25 hp boiler required)</td>
</tr>
<tr>
<td></td>
<td>• Approximately 150 gallons of water, hot and cold</td>
</tr>
</tbody>
</table>

Cost to the provider: Alkaline hydrolysis equipment is expensive; it may cost a provider between $150,000 and $400,000 to purchase an AH unit, depending on the size of the machine as well as the temperature and pressure at which the system can operate.

Cost to Consumer: Both AH and incineration may start at approximately $700, direct disposal. The costs of the two are comparable for the consumer. Much depends on the service provider, however.

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Other Considerations

“Through the senses men's minds are corrupted, and through them they may be improved morally and elevated spiritually.” (Unknown)

I make no bones about the fact that I am a person of faith, my vocation is that of bereavement chaplain, and I am “clergy.” That being said, I do want to make clear that I am strong in my interfaith convictions and teach tolerance both of sacred and profane beliefs. I have served and continue to serve with compassion and love all belief traditions from Orthodox Christian to Hindu to Humanist; all have a scintilla of the Divine and it is not my prerogative to judge, only to serve. I make no concessions, however, to fad or fashion in terms of basic human needs and constitution. There is no marketing strategy or fashion statement that can or would compensate much less substitute for the fundamental assumptions and values that make us human beings. One of those fundamental values is reverence for our dead.

Where accelerated decomposition of the dead human body by fire, that is, by open pyre or by conventional cremation, is firmly based on established religious or spiritual doctrines and tradition there can be no argument against it. Where accelerated decomposition of the dead human body is accomplished by fire or chemical methods absent a religious or spiritual foundation, this practice becomes desecration. Nevertheless, where doctrine and tradition might refuse liturgical disposition of a suicide, for example, or any by any mechanism of death other than natural, the mandates of compassion and humanity require that we accord the dignity of liturgical disposition to them also for the sake of the living.

Economic considerations or ecological considerations should not govern in the disposition of our dead; there are means to achieve economic and ecological goals and objectives other than desecration of our dead, and the paltry savings realized at the expense of tradition and good conscience fall short of justifying the decision to save a modest amount of money. But since the dead have no voice and the living are easily persuaded, the dead become the pawns of the misguided and the greedy.

This applies also to the place we hold sacred as the repository of our dead, the cemetery. Indeed, Grandclaude writes, “In the early ages, any decent place served for the burial of Christians; and during the ages of persecution it was difficult to set apart and bless special cemeteries for them. Yet, even when the cemetery was not specially consecrated, the early Christians, as indeed even the pagans, looked upon the place of burial with religious reverence, and put it beyond the pale of human commerce.” So, even today, when we are somewhat indiscriminate as to the consecrated ground in which we inter our dead, the cemetery or, as it was called, the dormitory continues to be archetypically sacred, even if we now practice promiscuous burial and no exclusiveness; no “coin des reprouvés.”

To ignore the material and sensible in our lives and spirituality, to deny the established sacramental system honoring creation is indirectly to weaken one’s faith in the mystery of the Incarnation or the God in creation. To try to establish a pure system of individualism and self as a spiritual system for human beings who have a mixed nature, a physical body as well as an immaterial soul connected with it, and dependent on it for reflex cognition as well as for outward expression of religious engagement, is to attempt to build a tower in the air without a foundation to support it.

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16 E. Grandclaude, *Jus Canonicum Juxta Ordinem Decretalium*, Volume 2, p. 387,
17 From the Greek κοιμάομαι, to sleep, to fall asleep, to die (cf Strong’s 2837); from Late Latin *coemeterium*, from Greek *koimeterion* "sleeping place, dormitory,“
Requirement of Moral Analysis both Objective and Subjective

Human beings are recalcitrant in stretching limits and seeking the easiest way out of a situation. In times past they relied on the philosophers, augers and gods to tell them what they should do or expect; later, the Church stepped in to provide guidance and guidelines; by the time of the Enlightenment\textsuperscript{18} humankind had reached a stage of such arrogance that human reason had usurped any notion of higher authority, and the mind ascended to abrogate to itself the role and nature of the immortal soul. Later, in the late 18\textsuperscript{th} to the mid-19\textsuperscript{th} century, industrialism\textsuperscript{19} and the false promise of a better life and prosperity drew huge populations to the cities, forsaking any real connection with nature and the nobility of creation; industry reduced creation to a means to an end, wealth but wealth for a few. The majority of human beings were reduced to means to that end, anathema to established morality. The situation has not changed to this day.

After the rise of the demon industrialism came capitalism\textsuperscript{20} followed closely by trade unionism\textsuperscript{21}, a nascent concept of socialism, then communism. From these earlier developments Western civilization  

\textsuperscript{18} During the age of the so-called Age of Reason or the Enlightenment, Western, especially Western European politics, philosophy, science and literature entered into a radically reorientation. This period, sometimes referred to as the "long 18\textsuperscript{th} century" ran from approximately 1685 to 1815.

\textsuperscript{19} In the period from about 1780 to about 1860, the so-called Industrial Revolution occurred. Industrialization marked a shift to powered, special-purpose machinery, factories and mass production. The Industrial Revolution also necessarily ushered in improved systems of transportation, communication and banking. Although industrialization created job opportunities and made available increased volume and variety of manufactured goods, and for some an improved quality of life, its negative consequences were far-reaching as it also resulted in often abysmally poor employment and living conditions, dehumanized the poor and working classes, and created fertile ground for the welfare state and abrogation of human dignity and responsibility, much of which was assumed either by the state or by institutions. Traditional religious institutions during this time were discredited, attacked and entered into an initial decline.

\textsuperscript{20} Capitalism as a concept goes back to about the late 13\textsuperscript{th} century when it came to mean the assets of a merchant or trader; during that time it was used synonymously with terms like wealth, money, funds, goods, property etc. The word capitalist dates form about the late 18\textsuperscript{th} century but the word capitalism, as we know it today, is attributed to Louis Blanc (1850), who wrote, "What I call 'capitalism' that is to say the appropriation of capital by some to the exclusion of others." Pierre-Joseph Proudhon (1861) wrote that capitalism is an "[E]conomic and social regime in which capital, the source of income, does not generally belong to those who make it work through their labour." Modern-day capitalism can be found in two varieties: The social and political disaffection, especially among the youth, seems to be more pronounced in liberal than coordinated market economies. Peter A. Hall and David Soskice argued that modern economies have developed two different forms of capitalism: liberal market economies (or LME) (e.g. US, UK, Canada, New Zealand, Ireland) and coordinated market economies (CME) (e.g. Germany, Japan, Sweden, Austria). Those two types can be distinguished by the primary way in which firms coordinate with each other and other actors, such as trade unions. In LMEs firms primarily coordinate their endeavors by way of hierarchies and market mechanisms. Coordinated market economies more heavily rely on non-market forms of interaction in the coordination of their relationship with other actors. The social and political disaffection, especially among the youth, seems to be more pronounced in liberal than coordinated market economies. This signals an important problem for liberal market economies in a period of crisis. If the market does not provide consistent job opportunities (as it has in previous decades), the shortcomings of liberal social security systems may depress social and political participation even further than in other capitalist economies. (Source: Wikipedia, Capitalism, last accessed on October 29, 2017).

\textsuperscript{21} Unions began forming in the mid-19\textsuperscript{th} century in response to the social and economic impact of the industrial revolution. National labor unions began to form in the post-Civil War Era. American labor unions benefited greatly from the New Deal policies of Franklin Delano Roosevelt in the 1930s. The Wagner Act, in particular, legally protected the right of unions to organize. Unions from this point developed increasingly closer ties to the Democratic Party, and from that association unions and their programs have increasingly fostered liberal agendas.
entered a period of existentialism and then post-modernism\textsuperscript{22} and post-Christianism\textsuperscript{23}. That brings us to our present state of affairs.

Given that distilled introduction, I hope to have provided a very minimalist outline of the developments leading to the current moral questions connected with the apparent continuum of desanctification of the human body which runs from the renewed interest in cremation in the late 19\textsuperscript{th} century to the attempts by marketers and manufacturers to make more respectable and acceptable the industrial process of AH. And that is exactly what AH is, an industrial process, Alkaline hydrolysis is a mechanized, sterile — that is, it is wholly devoid of emotion, sensitivity, compassion, dignity — industrial procedure.

Cremation was taboo in most Western societies until only about 100 years ago and only picked up steam in the 1960’s. Alkaline hydrolysis (AH), it appears, is following the same basic track as cremation did but because it’s such an abhorrent concept, may not become as acceptable as cremation has become.

Today, unions also typically engage in lobbying activities and electioneering at the state and federal level. The loyalties of the modern institution of trade unions are subject to some suspicion, since they have morphed substantially into typical institutions, that is, they have become more self-interested and self-preserving, and may have lost sight of their original labor-centered, beneficent focus.

\textsuperscript{22} Post-modernism is broadly informed by an attitude of skepticism, irony or rejection towards narratives, ideologies and various tenets of universalism, including objective notions of reason, human nature, social progress, moral universalism, absolute truth, and objective reality. In general, post-modernism postulates that claims to knowledge and truth are products of social, historical or political discourses or interpretations, and are therefore contextual or socially constructed. Accordingly, postmodern thought is broadly characterized by tendencies to epistemological and moral relativism, pluralism, irreverence and self-referentiality. Post-modernism can be characterized by dissatisfaction, anxiety, skepticism, and sentimentality.

\textsuperscript{23} Post-Christianity is a term that seeks to define the loss of the primacy of the Christian worldview in political affairs, especially regions where historically Christianity had previously flourished; Post-Christianity offers a diverse set of alternative worldviews such as secularism or nationalism. It also includes "personal" world views, ideologies, religious movements or institutions that are no longer rooted in the grammar and assumptions of Christianity, at least explicitly, although they had previously been in a sociocultural and philosophical environment of universal Christianity (i.e. catholicism). The term might also imply the evolution of traditional Christianity into a more globalized, contemporized flavor that is necessary to its survival (cf. Vatican II).
It is worthwhile to note that morality is a feature of humanity. That having been said, it must be noted that morality is not textbook objective; if it were, we would all agree on the same moral values and ethical acts following therefrom. So it’s obvious that all human beings do not share or even agree on moral values. We don't have to search far to admit the fact that there is no moral consensus regarding euthanasia, abortion, or our relationship with the rest of creation. For moral analysis to be valid we must ensure that all relativization of the act or the purpose of the act is avoided; this means bracketing personalities, emotions, intentions, intuitions, etc.

We can start off with a short definition of morality, and then proceed to define objective morality and subjective morality. Once that is accomplished, we can apply those two working definitions to our consideration of the moralities of AH.

Morality is acting or being whose purpose is to achieve Good. Good is that which does not harm.

As a biomedical ethicist I must prioritize moral principles as they pertain to a given situation; accordingly, I shall adopt the principles and hierarchy proposed by Lasnoski:24 (1) the dignity of the human person and the human body, (2) the doctrine of bodily resurrection25, (3) subsidiarity or personal autonomy (the expressed wishes of the deceased), and (4) the common good, including economic, environmental, and health concerns.

25 While Lasnoski is a Roman Catholic theologian writing on Roman Catholic theory of morality, the doctrine of bodily resurrection may not appeal to many readers as a true moral principal. I have therefore included that in the discussion only for the sake of completeness. My personal opinion is that the doctrine of bodily resurrection is a rather theological position rather than a universal moral principle, and it should not enter into the broader moral discussion.
As to the discussion of morality as objectivity and subjectivity, I shall likewise adopt Lanoski’s definitions as follows: **objective moral assessment** judges the object of the act involved in a situation; **the subjective moral assessment** examines the intentions and circumstances of the act.

Objectively, AH is a method for safely treating and disposing of dead human bodies. The method involves alkaline hydrolysis or chemical digestion of the organic components of the dead human body. The dead human body is immersed into a highly alkaline solvent, heated (>130° C), and pressurized (>2.79 atm) until the hydrolyzable matter is fully digested, thereby forming a solution, the digest, and solid waste comprised of inorganic bone, synthetic components, metal components. The sterile solution and solid waste may then be disposed of through standard means, such as in a sanitary sewage system or local landfill facility.26

Subjectively, AH is dissolving a dead human body and flushing it down the drain.

Along with Lasnoski and Mirkes27, on whom Lasnoski relies for the major part of his exposition, I maintain that at the objective level AH is not *intrinsically* evil. AH does appear to exhibit the least respect for the dignity of the deceased and the body, but that perception may be more closely associated with the language one uses to describe AH than with reality, that is, saying that alkaline hydrolysis involves “flushing human remains down the drain,” to be processed with other sewage and waste, is nothing less than repugnant to most people and certainly conjures up the so-called Ick-factor. Does it sound any better to say that a crematory sends incinerated dead human bodies, sending them up in smoke through a factory chimney, and they then fall in tiny bits on the heads of unwitting pedestrians? All in the rhetoric, it seems; the rhetorical description of the act makes its own moral claim, so we must give due care to the language we use in any moral or ethical assessment.

We can argue that the coffee-brown slurry produced from the organic and nitrogenous components of the former dead human body is not the human body; accordingly, to say that the human body is flushed

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26 Adapted from US Patent No. 6437211 B2, Methods for treatment and disposal of regulated medical waste, Publication date 20 Aug 2002, which does not differ substantially from the principal patents describing the process.

down the drain would be inaccurate. AH destroys the dead human body by dissolving it, and the method discards an aqueous solution of molecules that cannot be called body parts. Again, rhetoric.\textsuperscript{28}

We can credibly argue that AH does not respect the integrity of the human body in the same way that incineration and burial do; nevertheless, both FC and AH are methods effecting an accelerated decomposition of the dead human body with flame cremation using oxidation and AH employing hydrolysis. In other words, objectively both FC and AH are chemical acceleration of decomposition whose objects are not “to send up a human body in smoke and vapor” or to “flush a dissolved human body down the drain” but rather to chemically accelerate decomposition.\textsuperscript{29}

Proceeding to the question of environmental impact we must admit that there are no reliable scientific studies comparing FC with AH in terms of environmental impacts. This would be a rather difficult undertaking due to the proprietary nature of such information and the fact that credibility would be a question, since much of the marketing strategy attempts to position AH above FC and burial in terms of environmental compatibility. Bearing that caveat in mind, we can make some a general comparative statement for illustrative purposes only: The comparison ranks AH above FC, and FC above burial of the embalmed body. It is argued that, alkaline hydrolysis uses less \textit{fuel} than incineration but the question remains does it use less \textit{energy}. The AH process uses potassium hydroxide (easily manufactured), water (about 150 gallons), pressure (about 60 psi), and low heat (approximately 300°F). FC requires greater heat (1400°F – 2400° F) for a longer period of time. Manufacturers and marketers claim that AH requires only one eighth the energy of incineration but in reality this depends on the type of system used, the size (weight) of the body, and whether a low-temperature or high-temperature system is used.

The bottom line as to the moral question of dignity of the body, burial without embalming most respects the dignity of the body. In terms of the objection of the act burial without embalming it merely allows, that is, there is no forced or violent intervention but slow natural decomposition. AH and FC are morally equivalent in terms of respect for the dignity of the body, since they chemically accelerate decomposition through violent intervention; the body is destroyed rather than being returned to nature through the action of normal microbial and natural chemical decomposition processes. The rejection of the natural decomposition is in the interest of considerations that cannot be considered morally necessary, but are more optional and economic or convenience related. The object in burial of the dead human body is to put the body at rest and to allow nature to take its course; in contrast, the object of the act in both AH and FC is to destroy the body. In terms of respect for the dignity of the body both AH and FC are morally inferior to burial.

\textsuperscript{28} We have not broached the \textit{violence} of AH system and method in aggressively destroying the body.

\textsuperscript{29} It could be argued that AH allows recovery of 100\% of the original body in the form of the liquid digest and the solid components, while cremation allows recovery only of the non-combustible ash and bone. The solid end products of both AH and FC are both pulverized into a course sandlike material, packaged, and returned to the family.
Dissolve and Flush: Funeralized Alkaline Hydrolysis

AH and FC systems side-by-side.

The objective distinction between the act of placing a body at rest and allowing it to decompose naturally and the act of destroying it is morally significant.

As to the question of subsidiarity or the autonomy of the deceased dead person, AH, FC, and burial must be considered morally equivalent presuming that that the expressed or clearly implied wishes of the deceased are respected, since, as stated earlier, objectively neither AH, FC nor burial are intrinsically evil.

In terms of the common good, including economic, environmental, and health concerns, AH objectively outranks FC and burial, since based on the available information and assuming its reliability, AH is economically less onerous and has the least negative environmental impact and represents few public health risks.

To be complete, I must note that all three methods of disposal available for dead human bodies: AH, FC, and burial are morally neutral with regard to the doctrine of bodily resurrection.

In summation, in consideration of our objective moral assessment of AH compared with FC and burial, burial is in greatest compliance with the moral principles with regard to the object of the act. It ranks highest at the level of respect for human dignity (the most important criterion), and it can be done in a way that ranks second in terms of the objective (instrumental) common good.

On the subjective level of moral assessment a number of different considerations come to the fore. Cost, convenience, convention to name a few.

Economic factors play a significant role in FC rates and it is reasonable that they would have a similar effect on AH rates, should AH actually approach the popularity of FC or burial.

A New York Times article published in 2011 reports that “according to a national telephone survey of 858 adults conducted last year by the Funeral and Memorial Information Council. It found that one-third of those who chose cremation in 2010 said cost was a primary factor, up from 19 percent in 1990.” The article goes on to report that “Today, [Michael W. Nicodemus, president of the cremation association] said, nearly half of his consultations eventually turn to worries about

money, and the cremation rate at the company’s nine funeral homes has risen to 55 percent, up from 35 percent six years ago.”

In a Forbes article published in 2009, we read:

“While price may be the most immediate cause of the rise in cremation, cultural and religious acceptance is the most significant (the Catholic Church lifted its ban on cremation in 1965). As well, modern concerns over the environment and more mobile lifestyles led the rate of cremations to double from 1985 to 2005.” 31

It appears then that one of the major factors in deciding in favor of FC rather than burial is money.

It may be expedient at this point to dispose of the moral question of belief in the resurrection. Cremated remains have become the raw or starting materials for a brisk business creating memorial objects or even novelty objects using cremated remains or by incorporating them into a product. Cremated remains can be incorporated into artificial concrete coral reefs, compressed into artificial gem stones and used in jewelry items, mixed with paint and used in artwork, combined with ceramic materials for vessels, pressed into vinyl phonograph records, even scattered as fertilizer, just to name a few ideas for repurposing a loved one’s remains. While these acts are not explicitly a rejection of the belief in resurrection, they may be construed to be implied rejection, if only by obscuring the doctrine, and hence in terms of the Roman Catholic moral theological criterion of belief in the resurrection, to fail. The same can be reasonably applied to AH, since in all respects it is comparable in its moral object to that of FC.

In terms of subsidiarity or autonomy of the person, if AH or FC were chosen over and above burial and if the choice were made with no urgency or other extenuating circumstance justifying the choice, it may be determined that the choice is subjectively immoral. Most Christian traditions would agree that the mystical body of Christ or the Church is made up of individuals; accordingly, it can be argued that the body has an obligation to its parts, so too the parts have a reciprocal obligation to the body. It’s a simple moral axiom whether applied to the human body and its parts, to a nation and its citizens, or to a faith tradition and its members.

In this subjective moral assessment we must take into consideration two dispositions: the laxist and the rigorist. The laxist disposition would require evidence of the denial of a doctrine or a dogma, in this case bodily resurrection; accordingly the burden of proof is on the prosecution, the Church, to show that there was subjective intention to deny the doctrine or dogma in question, and if shown, the decision is immoral.

The rigorist disposition requires simply that the choice for cremation is because “extraordinary circumstances make cremation of a body the only feasible choice;” in other words, cremation is “the only feasible choice,” a concession not a preference. 32

Stated in this way, the question of alkaline hydrolysis, incineration, and burial becomes a moral question touching upon the common good of the community or of the world. From such a subjective moral point of view, one might reasonably choose alkaline hydrolysis over incineration or burial simply because they believe, based on available information, that it best serves the common good. It is, after all, the “green”

32 Losnanski gives the example of licit cremation in the case of death due to prion-based disease, such as Creuzfeldt-Jacob. Losnanski, p. 241.
way to put the body to rest. But this might be a gold-plated example of the “green-washing” that goes on in everything from automobile sales to funeralization.\(^{33}\)

The raw truth is that AH is a technological, industrial, sterile process; it was developed and marketed as such from the very beginning. AH is green only when compared with specific alternatives, not because it is similar or equivalent to slow natural decomposition by microbes that return nutrients directly and organically to the biosphere at nature’s own pace. In fact, burial (without embalming, with a biodegradable container, and vaultless, ideally the green burial) is more ecologically sound than AH or even FC. With burial, the dead human body becomes “fertilizer” as a wholly natural process. In AH, the liquid digest become part of sewage sludge from a wastewater treatment plant, which is actually incinerated more often than it is processed into fertilizer. Wouldn’t FC actually sanitize and shorten the process in the first place, that is, if such violent destruction of the dead human body is made necessary and thus in compliance with our moral assessment principles?

It seems paradoxical, therefore, that in view of today’s body worship cult, in view of the sentimentality surrounding today’s culturally dominant denial of death at all costs, that such violent destruction of the dead human body would even come under consideration. It is further ironic that today’s “culture of death” cannot bear to ponder the destruction of the body that its own entertainments and depravity glorify. AH and FC may be symptomatic of that cultural inability to confront the reality of bodily corruption in death, of the natural reality of slow decomposition and return to the natural biosphere at nature’s pace. The sentimentality of modern culture, it’s obsession with denial of reality and easy, quick solutions may very well be symptomatic of narcissistic psychopathology that guides today’s marketers and consumers in their acceptance of such alternatives as FC and possibly AH.

The marketing hype and claims of ecological beneficence do not survive theological or moral analysis and, like the tower built on air, have no foundation to support them. Without a firm credible foundation for the claims of AH, other than the ephemeral claim of easy, quick, and cheap solutions — no pun intended, of course — AH and even FC do not survive objective moral scrutiny.

\(^{33}\) The companies manufacturing and marketing AH systems and equipment have all registered green-sounding names: “Aquamation” (Aquamation International), “Resomation” (Resomation Ltd.), and “Bio Cremation” (Matthews International). Even the design of their websites are in eco-suggestive colors such as blue, green, and white, and feature images from nature, giving the impression that the process is a wholly natural return to Mother Earth. Again, rhetoric and smoke and mirrors reign supreme in the market economy and marketing niche.
So, dear readers, which is more peaceful and appealing? Going up in smoke and ashes, getting dissolved in Draino®, or being laid to rest in the bosom of the earth and returning to Nature naturally, becoming a part of beauty?
### Terminology

<table>
<thead>
<tr>
<th>Term</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Aftercare</strong></td>
<td>A synonym used for after-death or post-mortem care given to the deceased.</td>
</tr>
<tr>
<td><strong>AH</strong></td>
<td>Alkaline hydrolysis.</td>
</tr>
<tr>
<td><strong>Alkaline hydrolysis</strong></td>
<td>Alkaline Hydrolysis: The process of preparing a dead human body for final disposition by placing the body in a stainless steel chamber which, when filled with a solution of water and an alkali solution that is heated, reduces the body to soft porous white bone.</td>
</tr>
<tr>
<td><strong>Aquamation</strong></td>
<td>A misnomer; this has nothing to do with cremation. A sanitized term for alkaline hydrolysis. Used by marketers as a more consumer-friendly term for AH.</td>
</tr>
<tr>
<td><strong>Biocremation</strong></td>
<td>A misnomer; this has nothing to do with cremation. A sanitized term for alkaline hydrolysis. Used by marketers as a more consumer-friendly term for AH.</td>
</tr>
<tr>
<td><strong>Bioplastic</strong></td>
<td>Bioplastics are plastics derived from renewable biomass sources, such as vegetable fats and oils, corn starch, or microbiota. Bioplastic can be made from agricultural by-products and also from used plastic bottles and other containers using microorganisms.</td>
</tr>
<tr>
<td><strong>Burial</strong></td>
<td>The act of placing dead human remains (either whole body, parts thereof, or cremated remains) in the ground by excavating a pit or trench, placing the human remains in it, and covering over the remains, usually with soil.</td>
</tr>
<tr>
<td><strong>Cremation</strong></td>
<td>Cremation is a method of accelerated decomposition. Cremation involves the incineration or burning and vaporization of combustible components of the dead human body, reducing it to basic component, such as gases, ashes and mineral bone fragments retaining.</td>
</tr>
<tr>
<td><strong>Cremulator</strong></td>
<td>A pulverizer. A machine used to reduce the cremated remains or the dried bone remnants of AH to a consistency of coarse sand.</td>
</tr>
<tr>
<td><strong>Digest</strong></td>
<td>The one of the end-products of AH; consists of a coffee-colored sludge or slurry that can be diluted and flushed down the drain to the municipal sewer system or recycled.</td>
</tr>
<tr>
<td><strong>Direct burial</strong></td>
<td>Direct burial is a burial option in which the body is buried almost immediately after death, without a formal funeral service or graveside service before the burial. Direct burial is the cheapest burial option.</td>
</tr>
<tr>
<td><strong>Direct cremation</strong></td>
<td>Direct cremation is a disposition option in which the body is cremated almost immediately following the death, without a funeral service beforehand. Direct cremation is the cheapest option for disposition.</td>
</tr>
<tr>
<td><strong>Disposition</strong></td>
<td>A big word that marketers and funeral directors like to use instead of the more accurate word, disposal.</td>
</tr>
<tr>
<td><strong>FC</strong></td>
<td>Flame cremation, incineration by heat.</td>
</tr>
<tr>
<td><strong>Greenwashing</strong></td>
<td>Disinformation disseminated by an organization so as to present an environmentally responsible public image. Example: &quot;The recycling bins in the cafeteria are just feeble examples of their corporate greenwash&quot;</td>
</tr>
<tr>
<td>Term</td>
<td>Description</td>
</tr>
<tr>
<td>---------------------</td>
<td>---------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Liquid cremation</td>
<td>A misnomer; this has nothing to do with cremation. A sanitized term for alkaline hydrolysis. Used by marketers as a more consumer-friendly term for AH.</td>
</tr>
<tr>
<td>Waste</td>
<td>Waste is unwanted or worthless material. Waste is any substance which is discarded after primary use, or it is worthless, defective or of no use.</td>
</tr>
<tr>
<td>Waste, hazardous</td>
<td>Waste, which if improperly managed, poses a serious threat to human health or to the environment.</td>
</tr>
<tr>
<td>Water cremation</td>
<td>A misnomer; this has nothing to do with cremation. A sanitized term for alkaline hydrolysis. Used by marketers as a more consumer-friendly term for AH.</td>
</tr>
</tbody>
</table>