

# S SAVANNAH LAW REVIEW

## HAVE A SCOOP OF GRANDPA: COMPOSTING AS A MEANS OF FINAL DISPOSITION OF HUMAN REMAINS

*Asmara M. Tekle\**

### I. Introduction

Many a religious tradition teaches that, upon death, our human souls are transported to another realm. Yet in the end, our physical bodies are nothing but a bag of bones. The body's decay can be delayed by embalming,<sup>1</sup> the death industry's version of Botox and facial fillers, aimed at forestalling our inevitable decay and decline.<sup>2</sup> The methods of final disposition of the body, burial,

---

\* Professor of Law, Thurgood Marshall School of Law, Texas Southern University. Many thanks to Reem Haikal and Don Tatum, TMSL Class of 2017, Katherine Vukadin, Katrina Spade, and the editorial board and staff of *Savannah Law Review* for inviting discussion on this topic.

<sup>1</sup> Historically, the United States and Canada are the only countries that embalm the human dead as a mainstream practice, although the practice is increasing amongst Singaporean ethnic, Chinese, and the French. Philip R. Olson, *Knowing "Necro-Waste,"* SOC. EPISTEMOLOGY 1, 4 (2015).

<sup>2</sup> MARY ROACH, STIFF 80–81 (2003) (recounting how embalming had “rejuvenated” the body of an elderly man). “Mortuary embalming is designed to keep a cadaver looking fresh and uncadaverous for the funeral service, but not much longer. . . . ‘As soon as the water table comes up, and the coffin gets wet . . . you’re going to have the same kind of decomposition you would have if you hadn’t done embalming.’ Water reverses the chemical reactions of embalming.” *Id.*; see Katrina M. Spade, *Of Dirt and Decomposition: Proposing a Resting Place for the Urban Dead* (May 2013) (unpublished M.A. thesis, University of Massachusetts Amherst), <http://scholarworks.umass.edu/cgi/viewcontent.cgi?article=2213&context=theses>; see also WILLIAM BRYANT LOGAN, DIRT: THE ECSTATIC SKIN OF THE EARTH 57–58 (1995) (“Since Egyptian times at least, people have sought to preserve the body against decomposition. The history of food preserving here parallels the history of burial. Salting, pickling, freezing, drying, honeycuring, flaying, bleeding, and eviscerating were all practiced by the earliest Mediterranean civilizations to preserve both meats and the dead. . . . Alexander the Great was shipped back from Babylon in a vat of honey. The British naval hero Lord Nelson returned from Trafalgar in a keg of rum.”).

cremation, or the death industry's newest innovation of alkaline hydrolysis,<sup>3</sup> are variations on a theme—reduction of the physical body to fragments of bone. Depressing.

Yet what might one say of a method of final disposition that enables the dead physical body to enrich soil, setting the stage for the literal flowering of new life?<sup>4</sup> This disposition method is mortality composting,<sup>5</sup> which transforms the dead human body into humus, the rich organic material that enhances soil and allows water and nutrients to better penetrate plants.<sup>6</sup>

At first glance, the visual imagery of a human body—limbs askew—sticking out of a compost bin amidst the fodder of banana peels, eggshells, and coffee grounds, is disrespectful and distasteful.<sup>7</sup> Imagine instead a respectful, dignified,

---

<sup>3</sup> Alkaline hydrolysis is also called Resomation™, Bio Cremation™, Aquamation™, water resolution, alkali disposition, and chemical cremation. Thomas A. Parmalee, *A Journalist's View of Alkaline Hydrolysis*, in *THE FUNERAL DIRECTOR'S GUIDE TO ALKALINE HYDROLYSIS* 7, 7–8 (Tanya Kenevich ed., 2011). Alkaline hydrolysis speeds up nature's own version of slow alkaline hydrolysis by placing the body in “a stainless steel cylinder, where it is dissolved by dual forces: ninety-two gallons of water mixed with four gallons of potash lye (potassium hydroxide) heated to 150 degrees Celsius [sic], and sixty pounds of pressure per square inch of body.” Sister Renee Mirkes, *The Mortuary Science of Alkaline Hydrolysis*, in *THE FUNERAL DIRECTOR'S GUIDE TO ALKALINE HYDROLYSIS* 53, 56 (Tanya Kenevich ed., 2011). Alkaline hydrolysis is also referred to as “green cremation,” which is pitched as an eco-friendly alternative to conventional cremation because of the lack of emissions, yet it consumes significant amounts of water (approximately 300 gallons) that is then recycled into the water supply. Shannon Palus, *How to Be Eco-Friendly When You're Dead*, *ATLANTIC* (Oct. 30, 2014), <http://www.theatlantic.com/technology/archive/2014/10/how-to-be-eco-friendly-when-youre-dead/382120/>. The result is a sterile, nontoxic liquid that similarly occurs when a body is buried, but when a body is embalmed, the liquid is also composed of formaldehyde. LOGAN, *supra* note 2, at 58 (“Densely packed churchyards are now so full of formaldehyde that they pollute the surrounding waters.”); *see also* ROACH, *supra* note 2, at 68–69 (noting that the organs of unembalmed bodies dissolve naturally into a yellow liquid—like “chicken soup”).

<sup>4</sup> *See generally* Val Plumwood, *Tasteless: Towards a Food-Based Approach to Death*, 17 *ENVTL. VALUES* 323 (2008) (advocating a “nutritive” frame for death and that the dead human body is food for others in the web of life).

<sup>5</sup> Another term for composting is “accelerated natural decomposition.” Video Interview with Katrina Spade, Founder & Exec. Dir., Urban Death Project (July 21, 2015).

<sup>6</sup> *Humus*, NAT'L GEOGRAPHIC SOC'Y, <http://education.nationalgeographic.org/encyclopedia/humus/> (last visited May 31, 2016); *see also Glossary of Soil Science Terms*, SOIL SCI. SOC'Y AM., <https://www.soils.org/publications/soils-glossary#> (last visited May 31, 2016) (defining composting as a “controlled biological process which converts organic constituents, usually wastes, into humus-like material suitable for use as a soil amendment or organic fertilizer,” and defining a soil amendment as “[a]ny material . . . that is worked into the soil or applied on the surface to enhance plant growth”).

<sup>7</sup> Or the notion of *Soylent Green* come to life, wherein humans are eating and drinking dead human bodies. *SOYLENT GREEN* (Metro-Golden-Mayer 1973); Philip R. Olson,

and well-designed urban space, perhaps embellished tastefully by public art *in memoriam* to the lives lived.<sup>8</sup> Inside the space, loved ones and friends engage in a meaningful ritual and ceremony that commemorates the dead, provides a safe place for the living to grieve, and reminds mourners of the fragile, fleeting nature of life.<sup>9</sup> In a final step, and at their option, loved ones can pick up the rich, sweet-smelling, earthy result of the deceased, or give permission for it to be used to enrich soil and to grow new life.

As compared to conventional disposition, mortality composting is “an act of healing”<sup>10</sup> that respects the earth by enriching its foundation: the soil.<sup>11</sup> Conventional methods arguably carry significant environmental costs. Embalming introduces toxic chemicals into the water supply,<sup>12</sup> earthen burial uses enormous amounts of land, often a scarce resource in urban areas,<sup>13</sup> and cremation burns significant fossil fuels and emits toxins into the air.<sup>14</sup> In contrast,

---

*Flush and Bone: Funeralizing Alkaline Hydrolysis in the United States*, 39(5) SCI., TECH., & HUM. VALUES 666, 681 (2014).

<sup>8</sup> See, e.g., *Overview*, URB. DEATH PROJECT, [www.urbandeathproject.org](http://www.urbandeathproject.org) (last visited May 31, 2016); *Design*, DEATHLAB, <http://www.deathlab.org> (last visited May 31, 2016).

<sup>9</sup> “[A]shes to ashes, dust to dust,” per the Latin Rite. THE BOOK OF COMMON PRAYER: THE TEXTS OF 1549, 1559, AND 1662, at 172 (Brian Cummings ed., Oxford University Press 2011); see also *Process*, URB. DEATH PROJECT, <http://www.urbandeathproject.org/#process> (last visited May 31, 2016). But see ROACH, *supra* note 2, at 251–52 (noting that with the popularity of cremation, disposal increasingly has become divorced from ritual and ceremony, thus arguably paving the way for new possibilities of disposing of human remains, ones that are heavily utilitarian and practical).

<sup>10</sup> LOGAN, *supra* note 2, at 48 (“Composting . . . is an act of healing. It restores the right working of a natural process.”).

<sup>11</sup> Video Interview with Katrina Spade, *supra* note 5; Jean Bonhotol, Lee Telega & Joan Petzen, *Natural Rendering: Composting Livestock Mortality and Butcher Waste*, CORNELL WASTE MGMT. INST. (2002), <http://compost.css.cornell.edu/naturalrenderingFS.pdf> (referencing the end-product of compost as a soil amendment).

<sup>12</sup> Karla Marie Rothstein, *Reconfiguring Urban Spaces of Disposal, Sanctuary, and Remembrance*, in 1 OUR CHANGING JOURNEY TO THE END: RESHAPING DEATH, DYING, AND GRIEF IN AMERICA 253, 258 (Christina Staudt & Harold Ellens eds., 2013) (“Each year, cemeteries across the United States bury approximately 800,000 gallons of toxic embalming fluid, risking groundwater and soil leaching. . . . No matter how fortified the bunker, eventually a fetid brew of embalmed tissue slowly leaches into the surrounding soil and groundwater.”). But see Olson, *supra* note 1, at 10 (discussing that the formaldehyde in resin is much more cause for concern than the formaldehyde in embalming).

<sup>13</sup> Elements, such as iron, zinc, copper, and lead, also are contained in caskets. Olson, *supra* note 1, at 12.

<sup>14</sup> Palus, *supra* note 3 (noting that a single cremation consumes the equivalent of two tanks of fuel for an SUV). But see ROACH, *supra* note 2, at 257 (discussing cremation’s low level of toxic emissions relative to residential fireplaces and barbecue grills and noting that the most worrisome aspect of cremations is the concentration of mercury from dental

composting produces a net benefit of valuable fertilizer with little to none of the environmental costs of standard methods of disposal.

Mortality composting also is respectful of the human body relative to conventional embalming and burial. In lieu of pumping it with chemicals in an attempt to inject the appearance of vim and vigor, and then encasing it in concrete, wood, and steel, mortality composting honors the dead human body's place in the cycle of life and the role it can play in enriching the earth.

Given increasing attention to composting as a method of human disposition,<sup>15</sup> the threshold question is whether the law permits it.<sup>16</sup> Likely because of its sheer novelty, this question has yet to be explored in the legal, academic literature. This Article argues that the split statutory approach to alkaline hydrolysis, one of death care's most recent innovations, provides a useful framework for examining the permissibility of composting as a method of final disposition.

Alkaline hydrolysis is the reduction of the body by chemicals and pressure to liquid and bits of bone.<sup>17</sup> In jurisdictions that have not shied away from legally ratifying this technology, the majority has broadened the definition of cremation to include a myriad of processes that reduce the human body to bits of bone.<sup>18</sup> In contrast, a minority of jurisdictions has preserved its narrower definition of

---

fillings released into the atmosphere, yet still this concentration pales in comparison to the load emitted by "power plants and incinerated trash").

<sup>15</sup> *Press*, URB. DEATH PROJECT, <http://www.urbandeathproject.org/#press> (last visited May 31, 2016) (indicating that in the past year, stories have appeared in national popular media outlets such as The Wall Street Journal, The New York Times, Slate Magazine, The Atlantic, and The Huffington Post).

<sup>16</sup> There are other legal questions to be explored in connection with human composting. For instance, would the site of composting be akin to a crematorium (*compostorium*) or a cemetery (*compostery*)? Would it entail a new statutory and regulatory scheme? More locally, how might zoning work to regulate their siting? What statutory and administrative rules govern the technical process of human composting? Would these be akin to the rules regulating embalming and cremation? Is the professional activity of human composting considered "funeral directing" or "funeral practice" for purposes of licensing of individuals and corporate entities in the death care industry? What would the law say about where the result of human composting, the soil amendment, may be placed? Could it be used to fertilize not only non-crop plants, but also crops that make up the human food supply? Does this scenario get into uncomfortable moral and ethical questions of cannibalism, or is it simply a prudent use of organic material? In addition, where might this fertilizer be spread—city parks or forests, the side of roads, one's home, rural meadow, or forest?

<sup>17</sup> Mirkes, *supra* note 3, at 56.

<sup>18</sup> *E.g.*, FLA. STAT. ANN. § 497.005(20) (West 2015) ("Cremation" means any mechanical or thermal process whereby a dead human body is reduced to ashes and bone fragments. Cremation also includes any other mechanical or thermal process whereby human remains are pulverized, burned, re-cremated, or otherwise further reduced in size or quantity.").

cremation and enumerated alkaline hydrolysis as a separate method of final disposition, alongside conventional earthen burial, cremation, burial at sea, and donation to science.<sup>19</sup>

This Article theorizes that under the majority approach's broader definition of cremation,<sup>20</sup> the composting of the dead human body is a form of cremation, specifically "cremation by carbon," that reduces the body via a non-flame thermal or biological process.<sup>21</sup> Moreover, even in jurisdictions that have not addressed alkaline hydrolysis, mortality composting can still fall under the definition of cremation, given that it is a technical process that uses heat, albeit without flame.

Mortality composting fits into a large cultural frame of the "alt-death" movement.<sup>22</sup> This movement favors enhanced consumer choice in death, challenging the hegemony of conventional and unabashedly commercialized methods of final disposition.<sup>23</sup> These choices include home funerals, in which loved ones or death midwives prepare and present the deceased in the intimate

---

<sup>19</sup> *E.g.*, MINN. STAT. ANN. § 149A.02(16) ("Final disposition; means the acts leading to and the entombment, burial in a cemetery, alkaline hydrolysis, or cremation of a dead human body.").

<sup>20</sup> Arguably, composting as a method of final disposition also could be considered another type of burial: "ecological burial." ROACH, *supra* note 2, at 276.

<sup>21</sup> Brendan Kiley, *The Architect Who Wants to Redesign Being Dead*, STRANGER (Mar. 3, 2015), <http://www.thestranger.com/features/feature/2015/03/03/21792773/the-architect-who-wants-to-redesign-being-dead>.

<sup>22</sup> *Id.*

<sup>23</sup> *Undertaking LA*, ORDER OF THE GOOD DEATH, <http://www.orderofthegooddeath.com/undertaking-l-a#.VdYR0mAk87c> (last visited May 31, 2016); *Ask A Mortician*, YOUTUBE, <https://www.youtube.com/user/OrderoftheGoodDeath/featured> (last visited May 31, 2016) (featuring Caitlin Doughty, mortician, and founder of the Order of the Good Death); Kiley, *supra* note 21 ("In 2011, Doughty founded the Order of the Good Death, a loose affiliation of academics, artists, and death professionals who are the de facto R&D wing of the American death-care industry."); *id.* (quoting Joshua Slocum of the Funeral Consumers Alliance as stating that "[o]ur current laws and regulations about the disposition of remains are entirely arbitrary, entirely cultural, and historically bound," and that if you "[s]urvey 10 people, [then] you will find someone who finds any given practice repulsive and someone else who thinks it's wonderful. We don't believe that laws should restrict individuals' options for disposition of the body unless there is a demonstrable impact of that disposition on anyone else's safety or health"); FUNERAL CONSUMERS ALL., <https://www.funerals.org> (last visited May 31, 2016); NAT'L HOME FUNERAL ALL., <http://homefuneralalliance.org> (last visited May 31, 2016); CAPSULA MUNDI, <http://www.capsulamundi.it/en/> (last visited May 31, 2016) (providing a way to dispose of the human corpse by placing it in a fetal position in a biodegradable coffin pod under a living tree—the body feeds the tree, and loved ones have a living memory of the deceased); *Frequently Asked Questions*, COEIO, <http://www.coeio.com/faqs/#toggle-id-2> (last visited May 31, 2016) (describing the Infinity Burial Suit, wherein the dead human body is placed inside along with mushroom spores; the body provides sustenance for the mushrooms, which then enable the body to decompose).

confines of the home.<sup>24</sup> Another choice is green or natural burial, in which the unembalmed body is laid to rest in a shroud or plain casket in a meadow or unconventional cemetery without the standard cemetery trappings of headstones and cement vaults surrounding the casket.<sup>25</sup>

Viewed within this frame of the alt-death movement, composting as a method of final disposition is an issue of consumer choice, not just some weird way of burying Grandpa. The alt-death movement, generally, and composting, specifically, also fit perfectly into the increasingly unchurched zeitgeist, in which formal religion dictates neither the rites of life nor death.<sup>26</sup> Still, a question that remains is whether the utilitarian aspect of human composting is a step too far into the nihilistic netherworld of limitless consumer choice, unbound and unpoliced by religious, ethical, or moral norms or customs.<sup>27</sup>

Part II of this Article unearths the art and science of composting as well as its limitations and justifications in environmental philosophy. This Part then exhumes a brief history of death innovation in the United States, including the cultural and religious acceptance of embalming and cremation, following the Civil War and the 1960s respectively.<sup>28</sup> Part III excavates the split regulatory approach toward the newest death innovation of alkaline hydrolysis. Part IV

---

<sup>24</sup> The death corollary to homebirth.

<sup>25</sup> See *What is Green Burial?*, GREEN BURIAL COUNCIL, <http://greenburialcouncil.org/home/what-is-green-burial/> (last visited May 31, 2016).

<sup>26</sup> *America's Changing Religious Landscape*, PEW RES. CTR. (May 12, 2016), <http://www.pewforum.org/2015/05/12/americas-changing-religious-landscape/> (stating that the share of Americans that identifies as unaffiliated with any religious faith has increased by more than six points (from 16.1% to 22.8%) since 2007, and the share that identifies as Christians has dropped almost eight percentage points (from 78.4% to 70.6%) in the same time); see also ROACH, *supra* note 2, at 258–59 (citing Stephen Prothero, Professor of Religion at Boston University, who posits that the public debut of cremation in 1874 was doomed in light of the initiator's failure to shroud the memorial service in religion. The first person in the United States to be formally cremated preferred an “unsentimental memorial speech, devoid of references to the Hereafter and the Almighty, and the bare, utilitarian design of his crematory (reporters likened it to ‘a bake oven’ and ‘a large cigar box’) offended the sensibilities of Americans used to Victorian-style funerals with their formal masses and their profusely flowered, ornately appointed caskets. America was not ready for pagan funerals. . . . What has inspired funeral reformers throughout history, Prothero maintains, has been a distaste for pomp and religious pageantry . . . . What really bothered them was the waste and fakery of the traditional Christian funeral: the rococo coffins, the hired mourners, the expense, the wasted land”); Rothstein, *supra* note 12, at 259 (noting that only forty-two corpses were cremated in the first twenty-five years of the country's first crematorium, which opened in 1876).

<sup>27</sup> See ROACH, *supra* note 2, at 259–60 (discussing types of “mortuary utilitarianism”).

<sup>28</sup> Olson, *supra* note 1, at 4 (citing DREW GILPIN FAUST, *THIS REPUBLIC OF SUFFERING: DEATH AND THE AMERICAN CIVIL WAR* 92 (2008)).

undertakes to apply this normative framework to mortality composting of humans, likely one of the next innovations in death care.

## II. Background

*A full ten percent of our dry weight is not us, properly speaking, but the assembly of microbes that feed on, in, and with us. Our bodies are the kitchens where our food is cooked, digested, and then burned to cook us. When at last we are well done, we begin to cool, becoming food ourselves.<sup>29</sup>*

*[W]e are food and . . . through death we nourish others.<sup>30</sup>*

### A. What Is Composting?

Mortality composting is distinct from simply letting a cadaver decompose in open air. The latter is decay and is unaided by human intervention. It arguably attracts scavengers, “smells like death,”<sup>31</sup> and is dangerous from the perspective of disease and water quality.<sup>32</sup> The end product is food for living creatures such as larvae, maggots, beetles, and bacteria.<sup>33</sup> In contrast, mortality composting is not only biomass recycling, but also transformation,<sup>34</sup> and is a process started and aided by human intervention.<sup>35</sup> When done right, it produces little to no smell,<sup>36</sup> kills most pathogens,<sup>37</sup> does not attract vermin or scavengers, and ensures that cadavers are kept separate from the water supply.<sup>38</sup> Additionally, mortality

---

<sup>29</sup> LOGAN, *supra* note 2, at 55.

<sup>30</sup> Plumwood, *supra* note 4, at 323–24.

<sup>31</sup> LOGAN, *supra* note 2, at 47; ROACH, *supra* note 2, at 70 (“It is difficult to put words to the smell of decomposing human. It is dense and cloying, sweet but not flower-sweet. Halfway between rotting fruit and rotting meat.”).

<sup>32</sup> Bonhotal, Telega & Petzen, *supra* note 11.

<sup>33</sup> ROACH, *supra* note 2, at 62–69 (describing human decomposition as witnessed at the University of Tennessee’s Anthropological Research Facility).

<sup>34</sup> Kiley, *supra* note 21 (citing to a sign in Katrina Spade’s office at the Urban Death Project, noting that compost is the “transformation of energy”).

<sup>35</sup> *Id.*

<sup>36</sup> LOGAN, *supra* note 2, at 46 (describing the odor of a compost of scallop viscera as “sweet and earthy, with an orangy [sic] tinge on the edges. It’s like herbal tea mixed with fine topsoil”); *id.* at 50 (contrasting how a landfill smells all the time and a compost heap for a day); Kiley, *supra* note 21 (quoting scientist Caitlin Price Youngquist as stating, with reference to livestock mortality composting, that the odor is one that is “cooked,” not smelling “like rotting flesh nor ‘like meat’”).

<sup>37</sup> The exception is prions, responsible for Mad Cow Disease and Chronic Wasting Disease. Jean Bonhotal, Ellen Z. Harrison & Mary Schwarz, *Composting Road Kill*, CORNELL WASTE MGMT. INST. 1, 8 (2007), <http://cwmi.css.cornell.edu/roadkillsfs.pdf>.

<sup>38</sup> Caitlin Price & Lynne Carpenter-Boggs, *On-Farm Composting of Large Animal Mortalities*, WASH. ST. U. EXTENSION 3 (2008), <http://cru.cahe.wsu.edu/CEPublications/eb2031e/eb2031e.pdf>.

composting is low cost, involves little labor,<sup>39</sup> and ordinarily requires land on which the single compost pile or “windrow” sits.<sup>40</sup> The end product is a rich, sweet-smelling, dark humus or “soil amendment” that is used to enrich soil.<sup>41</sup>

Composting is recycling organic matter.<sup>42</sup> It also is a biological process that transforms biomass into fertilizer “using organic raw material, such as wheat straw, hay, sawdust, manure, finished compost, and woodchips, a dedicated area, and careful management (particularly of temperature and moisture levels).”<sup>43</sup> Aerobic microorganisms, such as bacteria and fungi, convert the biomass into fertilizer.<sup>44</sup>

Trials of livestock mortality composting indicate that successful mortality composting has a proper ratio of carbon to nitrogen raw materials (anywhere from 30:1 to 40:1).<sup>45</sup> Carcasses tend to be highly concentrated with nitrogen and moisture (they are sixty percent water), and, therefore, require significant amounts of highly absorbent, carbon-dense material surrounding them, such as woodchips,<sup>46</sup> sawdust, wheat straw, and hay.<sup>47</sup> Structure is important, as good structure will enable enough air to flow through the windrow or single pile without drying or significantly cooling it.<sup>48</sup> Two-to-three feet of organic material should compose the base of the compost pile with the cadaver placed in the middle, which is then covered by two-to-three feet of organic material.<sup>49</sup> The cadaver should be well covered in order to prevent odor and pests from being attracted to the pile, as well as to ensure decomposition.<sup>50</sup>

Also, composting essentially is cooking;<sup>51</sup> thus temperature is the best measure of its success.<sup>52</sup> Microorganisms that feast on the biomass produce heat, and 110 degrees Fahrenheit is the temperature of “active composting.”<sup>53</sup> In the first few days, temperatures should be anywhere from 120 to 150 degrees Fahrenheit; internal measures of the compost pile or windrow can be anywhere from 105 to 155 degrees Fahrenheit, reaching as high as 170 degrees.<sup>54</sup> The

---

<sup>39</sup> Bonhotal, Telega & Petzen, *supra* note 11.

<sup>40</sup> Windrows contain several cadavers, while a single pile contains only one. Price & Carpenter-Boggs, *supra* note 38, at 6.

<sup>41</sup> Bonhotal, Telega & Petzen, *supra* note 11.

<sup>42</sup> ROACH, *supra* note 2, at 263.

<sup>43</sup> Price & Carpenter-Boggs, *supra* note 38, at 3–4.

<sup>44</sup> *Id.* at 3.

<sup>45</sup> *Id.* at 4.

<sup>46</sup> *Id.*; Bonhotal, Harrison & Schwarz, *supra* note 37, at 2.

<sup>47</sup> Price & Carpenter-Boggs, *supra* note 38, at 4–5.

<sup>48</sup> *Id.* at 5.

<sup>49</sup> *Id.* at 6; Bonhotal, Harrison & Schwarz, *supra* note 37, at 2.

<sup>50</sup> Price & Carpenter-Boggs, *supra* note 38, at 6–7; Bonhotal, Harrison & Schwarz, *supra* note 37, at 2.

<sup>51</sup> LOGAN, *supra* note 2, at 50 (referring to a compost pile as less well “cooked”).

<sup>52</sup> Price & Carpenter-Boggs, *supra* note 38, at 8.

<sup>53</sup> Bonhotal, Harrison & Schwarz, *supra* note 37, at 2.

<sup>54</sup> Price & Carpenter-Boggs, *supra* note 38, at 8.

Washington State Department of Ecology's guidelines recommend that an internal temperature of 131 degrees Fahrenheit be reached at all points around the cadaver, two feet from the surface of the pile, for a minimum of three days in order to kill any pathogens.<sup>55</sup> A temperature of 105 degrees Fahrenheit generally indicates that composting is finished.<sup>56</sup>

Transforming flesh and bone into humus can take anywhere from four months to one year.<sup>57</sup> After several months, however, most soft tissue and small bones will be transformed into humus.<sup>58</sup> Bones can be collected or placed as the base of another pile<sup>59</sup> to continue composting, if desired.<sup>60</sup> If they are exposed to air, they will harden, and it will be difficult for them to break down.<sup>61</sup>

#### B. A Step Too Far in Mortuary Utilitarianism?<sup>62</sup>

From the perspective of utility, burial in the ground or at sea, cremation, alkaline hydrolysis, composting, and donation to science are waste disposal methods of the dead human body.<sup>63</sup> As distinguished from most of these other methods of waste disposal, however, mortality composting is eminently utilitarian. Composting has a second level of utility of creating fertilizer that enhances the health of soil and sets the stage for new life. Still, is the composting of human remains and the functional value that it adds to the soil a case of "mortuary utilitarianism [gone] too far[?]"<sup>64</sup>

A hyper-utilitarian approach to the disposal of human remains has resulted in some kooky and gruesome ideas. For instance, one doctor proposed that the human dead be skinned prior to cremation, and the skin used to make shoes.<sup>65</sup> Another individual theorized that the fat of the human dead, much as the fat of whales, could be used to power streetlamps.<sup>66</sup>

Utility per se, however, is not a good enough reason to proscribe normatively or culturally a method of final disposition. For example, donation to science is a lawful way to dispose of human remains precisely because of the immense utilitarian value of the dead human body to aid in research and the advancement of life. Similarly, burial at sea is a lawful and culturally accepted method of final disposition of human remains. Its utilitarian value lies in the fact

---

<sup>55</sup> *Id.*

<sup>56</sup> *Id.* at 9.

<sup>57</sup> *Id.*

<sup>58</sup> *Id.* at 8.

<sup>59</sup> Bonhotal, Harrison & Schwarz, *supra* note 37.

<sup>60</sup> Price & Carpenter-Boggs, *supra* note 38, at 9.

<sup>61</sup> *Id.*

<sup>62</sup> ROACH, *supra* note 2, at 260.

<sup>63</sup> *Id.* at 251-52; Olson, *supra* note 1, at 1 (conceptualizing the dead human body as a type of waste or "necro-waste").

<sup>64</sup> ROACH, *supra* note 2, at 260.

<sup>65</sup> *Id.*

<sup>66</sup> *Id.*

that the dead human body not only “sleeps with the fishes,”<sup>67</sup> but also is eaten by them.<sup>68</sup>

In mortality composting, the physical body largely disappears, transformed into a soil amendment or fertilizer that is both a use and a method of disposal. In contrast, using human fat and skin to manufacture articles and power is strictly utilitarian, and one must still reckon with the disposal of the stripped corpse, a situation arguably not that much different from when the body is donated to science.

For instance, while donation to science often is considered a lawful method of disposition, it is more a use of the dead human body than a method of its disposal. After its use in science, it still must be removed. What distinguishes, however, the use of the cadaver in science and its use in manufacturing power and leather goods is purpose. One uses the human corpse for commercial gain, the other for life-saving knowledge.

The mainstreaming of cremation, and the concomitant disposal of the dead human body out of sight of a memorial service or conventional funeral, arguably has set the stage for cultural and normative acceptance of new methods of final disposition.<sup>69</sup> The physical act of waste disposal is disaggregated from the living’s celebration and commemoration of the deceased’s life via a memorial service or funeral.<sup>70</sup> Indeed, the academic discipline of death studies provides several frameworks in which to conceive of the dead human body, each of which supports varying methods of disposition, from the conventional to the alternative.<sup>71</sup> Collectively, these frameworks support the argument for choice in disposition in response to innovation in death care.<sup>72</sup>

Professor Philip R. Olson of Virginia Tech writes that the human corpse can be viewed in four ways: the “Medicalized/Funeralized Corpse,” the “Contaminating Corpse,” the “Sacred Corpse,” and the “Eco-Corpse.”<sup>73</sup> The prism of the Medicalized/Funeralized Corpse treats the dead human body as something that must be handled by professionals, not dissimilar from the

---

<sup>67</sup> This notable phrase is from a scene in *The Godfather*, in which mobsters dump Luca Brasi’s corpse into a body of water and later refer to Brasi as “sleeping with the fishes.” *THE GODFATHER* (Paramount Pictures 1972).

<sup>68</sup> ROACH, *supra* note 2, at 276 (“I used to think the traditional navy burial at sea sounded nice; I pictured the sun on the ocean, the infinite expanse of blue, the nowhereness of it. Then one day I had a conversation with Phillip Backman, during which he mentioned that one of the cleanest, quickest, and most ecologically pure things to do with a body would be to put it in a big tidepool full of Dungeness crabs, which apparently enjoy eating people as much as people enjoy eating crabs. ‘It’ll do the thing in a couple of days,’ he said. ‘It’s all recycled, and it’s all clean and taken care of.’ My affinity for burial at sea—not to mention crabmeat—was suddenly, dramatically diminished.”).

<sup>69</sup> *Id.* at 251–52.

<sup>70</sup> *Id.*

<sup>71</sup> Olson, *supra* note 7, at 669–81.

<sup>72</sup> *Id.*

<sup>73</sup> *Id.*

pervasive treatment of birth in the United States.<sup>74</sup> For instance, this view of the body requires a death certificate and registration, and relegates its care and disposition almost exclusively to the funeral industry.<sup>75</sup> This lens obviously reinforces conventional methods and practices of final disposition, much of which the modern funeral industry and death law uphold.<sup>76</sup>

In contrast, the concept of the Contaminating Corpse views the dead human body as disease-ridden and a danger to public health.<sup>77</sup> This model provides academic grounding for cremation, initially marketed as a cleaner way to dispose of the body. This view of the body also arguably promotes embalming, a practice that delays the human body's decay in an attempt to give an appearance of life.<sup>78</sup>

Correspondingly, the model of the Sacred Corpse considers the dead human body sacred and worthy of dignity.<sup>79</sup> This perspective undergirded the rise of embalming during the Civil War, in which "soldiers and their families worried that the fallen were being heaped together in ditches like animals—naked and without coffins. To many families, embalming offered a way to preserve the corpse so that it could be given a proper, dignified burial at home."<sup>80</sup> Similarly, some in the Catholic Church have opposed successfully the legalization of alkaline hydrolysis because the method does not sufficiently dignify and respect the body—the container of an immortal soul.<sup>81</sup>

The Eco-Corpse is the final framework for conceptualizing the dead human body.<sup>82</sup> In this frame, the corpse is viewed as "an untainted, wholesome, even nutritive entity" that is sullied by the environmentally toxic practices of the mortuary-industrial complex, such as embalming and conventional cemetery burial in a heavy coffin surrounded by a cement liner.<sup>83</sup> This view of the dead

---

<sup>74</sup> *Id.* at 669–72.

<sup>75</sup> *Id.*

<sup>76</sup> *Id.*

<sup>77</sup> *Id.* at 674–76.

<sup>78</sup> *Id.*

<sup>79</sup> *Id.* at 679–81.

<sup>80</sup> *Id.* at 679 (citing DREW G. FAUST, *THIS REPUBLIC OF SUFFERING: DEATH AND THE AMERICAN CIVIL WAR* 61–102 (2008)).

<sup>81</sup> *Id.* at 680; Mikel Livingston, *Bill Would Legalize Chemical Cremation*, LAFAYETTE J. & COURIER (Jan. 17, 2015, 12:05 PM), <http://www.jconline.com/story/news/local/2015/01/17/bill-legalize-chemical-cremation/21914801/>; Kelli Wynn, *Controversial Liquid Cremation Sought in Ohio*, DAYTON DAILY NEWS (June 29, 2012), <http://www.daytondailynews.com/news/news/local/controversial-liquid-cremation-sought-in-ohio-1/nPt5W/>; *NY Catholic Conference Opposes 'Chemical Digestion' of Human Remains*, CATHOLIC NEWS AGENCY (Mar. 25, 2012, 4:14 PM), <http://www.catholicnewsagency.com/news/ny-catholic-conference-opposes-chemical-digestion-of-human-remains/>.

<sup>82</sup> Olson, *supra* note 7, at 676–79.

<sup>83</sup> *Id.* at 677; *see also* Plumwood, *supra* note 4 (arguing that death is the continuation of life on earth since the dead body nourishes new life on earth, and that this conception of death occupies the middle ground between Western Christianity's conception of death as everlasting life in heaven, and Western atheism's view of it as a complete end).

human body buoys many of the unconventional disposition methods advocated by the alt-death movement that are perceived to be more environmentally friendly and less commercial. These methods and practices include alkaline hydrolysis, green burial, and home funerals.

Composting human remains is a method of final disposition that fits squarely within the Eco-Corpse framework. The rich humus created by composting is nutritive, as it feeds plants that then help to sustain animal and human life. Composting is wholesome and untainted because there are no chemicals added—it relies on aerobic micro-organisms, organic matter such as woodchips and hay, and the air to recycle organic biomass and transform death into life. Mortality composting of humans may also fit within the framework of the Sacred Corpse, given that it affords dignity to the body by honoring its place in the life cycle and leaving it alone.

### C. Innovation in Death Care and Law

Until the early twentieth century, home was the preeminent site for the display and tending of the dead in the United States.<sup>84</sup> Indeed, the body was displayed in the home's parlor, antecedent to the funeral parlor.<sup>85</sup> Prior to the Civil War, friends and family often would pitch in to clean and dress the body, as well as to transport and bury it.<sup>86</sup> There also was a commercial market for these services and others, though none was offered under one roof.<sup>87</sup> In addition, the body was laid to rest in a simple shroud or box,<sup>88</sup> in contrast to the grandiose coffins marketed by the commercial funeral industry today.

Following the Civil War, embalming took off in popularity and laid the foundation for the care of the dead human body outside of the home and into the hands of the modern mortuary industry and the funeral director.<sup>89</sup> The Medicalized/Funeralized Corpse framework was born. During the Civil War, millions viewed the embalmed body of President Lincoln on his days-long funeral train from Washington, D.C., to Springfield, Illinois.<sup>90</sup> Families of dead

---

<sup>84</sup> Tanya D. Marsh, *A New Lease on Death*, 49 REAL PROP., TR. & EST. L.J. 421, 424–25 (2015).

<sup>85</sup> *Id.* at 426 (“By the turn of the twentieth century, embalmers and undertakers began to move their place of work from the client’s parlor to a new ‘funeral parlor.’”); Ann M. Murphy, *Please Don’t Bury Me Down in That Cold Cold Ground: The Need for Uniform Laws on the Disposition of Human Remains*, 15 ELDER L.J. 381, 387 (2008) (“After death, the body was laid out in the family parlor and later buried in the family graveyard.”).

<sup>86</sup> Olson, *supra* note 1, at 4.

<sup>87</sup> *Id.*; Marsh, *supra* note 84, at 424–25.

<sup>88</sup> Tanya D. Marsh, *Rethinking the Law of the Dead*, 48 WAKE FOREST L. REV. 1327, 1329 (2013).

<sup>89</sup> Olson, *supra* note 1, at 4 (citing DREW GILPIN FAUST, *THIS REPUBLIC OF SUFFERING: DEATH AND THE AMERICAN CIVIL WAR* 92 (2008)); Marsh, *supra* note 88, at 1330.

<sup>90</sup> Murphy, *supra* note 85, at 387; Marsh, *supra* note 84, at 425–26.

soldiers hailing from the North desired to have their loved ones' bodies returned home instead of buried in mass pits on or near the battlefield.<sup>91</sup>

Utility was the prime driver for the technology, initially having been used furtively by medical schools to preserve cadavers.<sup>92</sup> Embalming's origins, therefore, parallel those of alkaline hydrolysis, which also began in the United States in medical schools as a way to dispose of both animal and human cadavers.<sup>93</sup> Until the Civil War and President Lincoln's funeral train, embalming was viewed as mutilation of the body and therefore un-Christian.<sup>94</sup> These arguments against embalming echo those of critics today who lobby against alkaline hydrolysis as a method of lawful disposition. In keeping with the Sacred Corpse framework, embalming accorded the dead human body insufficient dignity and respect.

Because the technology of embalming was so novel and out of step with mainstream culture and religion, the practice of embalming initially was unregulated.<sup>95</sup> A nascent regulatory structure emerged, however, during the Civil War when the Union Army established licensing rules to regulate the flood of individuals offering their services as undertakers and embalmers of the battlefield dead within earshot of the field hospitals.<sup>96</sup> This early licensing structure soon ceded place to formal regulation by the states in response to the demands of the emerging field of "funeral directing" (versus mere "undertaking").<sup>97</sup>

Individuals in this emerging profession desired to professionalize their industry in response to market demand for embalming.<sup>98</sup> For instance, Virginia first regulated embalming in 1894.<sup>99</sup> By 1900, over half of the United States had promulgated laws regulating what only fifty years earlier had been viewed as an un-Christian and disrespectful way to treat the dead.<sup>100</sup> By World War II, the Medicalized/Funeralized Corpse framework emerged as one of the dominant

---

<sup>91</sup> Murphy, *supra* note 85, at 386–87; Marsh, *supra* note 88, at 1329–30 (noting that surgeons and others were required to employ forms of embalming that stabilized decomposition for transport back home for burial).

<sup>92</sup> Murphy, *supra* note 85, at 386.

<sup>93</sup> Joe Wilson, *How I've Spent My Career Promoting Alkaline Hydrolysis*, in *THE FUNERAL DIRECTOR'S GUIDE TO ALKALINE HYDROLYSIS* 31, 32 (Tanya Kenevich ed., 2011) (citing schools such as the Shands Hospital at the University of Florida, University of Florida Vet Diagnostic Lab, University of Florida Health Science Center, and the Albany Medical College as pioneering the use of alkaline hydrolysis).

<sup>94</sup> Marsh, *supra* note 84, at 425 (citing ROBERT W. HABENSTEIN & WILLIAM LAMERS, *THE HISTORY OF AMERICAN FUNERAL DIRECTING* 218 (7th ed. 2010)).

<sup>95</sup> Marsh, *supra* note 88, at 1330.

<sup>96</sup> *Id.* at 1330 n.17.

<sup>97</sup> *Id.* at 1330; Murphy, *supra* note 85, at 387.

<sup>98</sup> Marsh, *supra* note 84, at 426.

<sup>99</sup> Marsh, *supra* note 88, at 1331.

<sup>100</sup> *Id.*

views of the dead human body. What had once been performed in the home by family, friends, or various tradespersons was now taken over by a single individual, the funeral director, in a single place, the funeral home.<sup>101</sup>

Similarly, cremation has managed to shed the disrespectful and hyper-utilitarian image that it acquired in the United States when first introduced in the nineteenth century.<sup>102</sup> This method of disposal of the dead human body is decidedly the way to go in the twenty-first century. When the Catholic Church lifted its opposition to cremation in 1963, the cremation rate was four percent.<sup>103</sup> In 2015, cremation surpassed burial, and the method is projected to capture seven out of ten dispositions by 2030.<sup>104</sup> Once the Catholic Church lifted its prohibition and effectively deregulated the disposition market for a significant portion of the population, cremation went mainstream.<sup>105</sup>

Consequently, it is likely no coincidence that all states have enacted a legal regime regulating reduction of the body by flame-based heat.<sup>106</sup> This normative evolution mirrors the law's adaptation to embalming more than 100 years ago in response to consumer demand for this option in death care.<sup>107</sup>

As with cremation and embalming, alkaline hydrolysis similarly is poised to shake up the American death market. Since emerging out of the cloistered confines of medical schools and into the retail funeral market in 2011 as a rogue

---

<sup>101</sup> *Id.* at 1330; *see also* Marsh, *supra* note 84, at 426.

<sup>102</sup> Murphy, *supra* note 85, at 385–86.

<sup>103</sup> Sarah Scully, *Funeral Industry Adapts as Cremation Becomes More Accepted*, HOUSTON CHRONICLE (Aug. 7, 2015), <http://www.houstonchronicle.com/business/retail/article/Funeral-industry-adapts-as-cremation-becomes-more-6431534.php>; Murphy, *supra* note 85, at 385–86; *see also* Mike Nicodemus, *Will Alkaline Hydrolysis Have a Future?*, in THE FUNERAL DIRECTOR'S GUIDE TO ALKALINE HYDROLYSIS 45, 46 (Tanya Kenevich ed., 2011) (“People thought the company I work for, Hollomon-Brown Funeral Home, was crazy when we installed our first cremator back in 1976. We knew cremation was coming, and we wanted to be onboard.”).

<sup>104</sup> Scully, *supra* note 103.

<sup>105</sup> *Id.*

<sup>106</sup> *See, e.g.*, TEX. HEALTH & SAFETY CODE ANN. § 716.151(a) (West 2015) (“Human remains must be placed in a cremation container that: (1) is made of combustible materials suitable for cremation; (2) provides a complete covering of the body; (3) is resistant to leakage or spillage; (4) is rigid for easy handling; and (5) protects the health and safety of crematory personnel.”); OHIO REV. CODE ANN. § 4717.01(K) (West 2015) (“‘Crematory facility’ means the physical location at which a cremation chamber is located and the cremation process takes place. ‘Crematory facility’ does not include an infectious waste incineration facility.”); CAL. BUS. & PROF. CODE § 7712.7 (West 2016) (“Every crematory licensee, who prohibits relatives or the responsible party from viewing the cremation process, shall disclose this fact in writing to the person or persons entitled to custody of the remains prior to the signing of any contract.”).

<sup>107</sup> Marsh, *supra* note 84, at 426; Marsh, *supra* note 88, at 1330–31.

form of final disposition by a single funeral director in Columbus, Ohio, the technology has spread to several states.<sup>108</sup>

As with cremation and embalming, the law is slowly but surely adapting to alkaline hydrolysis. On the one hand, more than a dozen states have enacted legal regimes regulating it, despite Catholic opposition decrying the technology as lacking sufficient dignity and respect toward the human corpse.<sup>109</sup> On the other hand, other states have not managed to overcome cultural and religious opposition to alkaline hydrolysis.<sup>110</sup> The short history of death and death law innovation shows, however, that the days are numbered for blocking this form of final disposition and with it, enhanced consumer choice in death care.

After alkaline hydrolysis, human mortality composting is arguably the next frontier in death care and death law. Like its antecedents in death care, such as embalming, cremation, and alkaline hydrolysis, mainstream culture and organized religion may deem it disrespectful and undignified. The story of final disposition in the United States, however, ultimately underscores adherence to fundamental American values favoring openness, innovation, and commitment to consumer choice and the free market, absent a compelling reason involving public safety or impingement of a fundamental value. Consequently, mortality composting likely is here to stay, and the law must adapt.

### III. The Law and Alkaline Hydrolysis

Given that alkaline hydrolysis is one of the most recent disposition innovations to receive halting (but spreading) legal sanction, its treatment in the law provides a ready, recent framework to analyze the next frontier in death care: mortality composting of human cadavers. There are two regulatory approaches to alkaline hydrolysis in jurisdictions that have affirmatively legalized it.<sup>111</sup> The majority approach expands the definition of cremation to include various processes, including those of dissolution and alkaline hydrolysis, to reduce the

---

<sup>108</sup> Thomas A. Parmalee, *Jeff Edwards: Trailblazing Professional Remains a Controversial Figure*, in *THE FUNERAL DIRECTOR'S GUIDE TO ALKALINE HYDROLYSIS* 23, 23–26 (Tanya Kenevich ed., 2011). Alkaline hydrolysis received an American patent in 1888. Wilson, *supra* note 93, at 31.

<sup>109</sup> Mirkes, *supra* note 3, at 60–61; Livingston, *supra* note 81.

<sup>110</sup> Olson, *supra* note 7, at 680; Livingston, *supra* note 81; Wynn, *supra* note 81; *NY Catholic Conference*, *supra* note 81.

<sup>111</sup> Poul Lemasters, *Alkaline Hydrolysis: Making a Federal Case*, in *THE FUNERAL DIRECTOR'S GUIDE TO ALKALINE HYDROLYSIS* 27, 27 (Tanya Kenevich ed., 2011) (“For those states that have addressed alkaline hydrolysis, there has been a split as to whether alkaline hydrolysis is a form of disposition or if it is just another form of cremation.”). Poul Lemasters is an attorney and counselor to those in the funeral industry and also is a funeral director, and embalmer, who is cited in several articles in the popular news media. *About: Poul Lemasters, Esq.*, LEMASTERS, <http://www.lemastersconsulting.com/about/> (last visited May 31, 2016).

body.<sup>112</sup> In contrast, the minority approach upholds the traditional cultural and legal definition of cremation, as reduction of the human body by fire, and enumerates alkaline hydrolysis as a separate lawful means of final disposition.<sup>113</sup>

To be sure, in jurisdictions that have yet to sanction legally neither alkaline hydrolysis nor composting, there is always the option to test the law's silence.<sup>114</sup> This silence exists in the statutory law's failure to enumerate a list of methods of final disposition, or alternatively, to ban explicitly a method of final disposition.<sup>115</sup>

Ohio funeral director Jeff Edwards's experience in Columbus, Ohio, however, stands as a cautionary tale against challenging the law's silence.<sup>116</sup> Edwards offered alkaline hydrolysis to funeral customers, wagering that, since it was not banned explicitly, it could survive legal muster under a law that permitted disposition by "burial, cremation, or *other manner of final disposition*."<sup>117</sup> The Ohio Department of Health refused to issue a death certificate for an individual whose body had been disposed of by alkaline hydrolysis, prompting Edwards's lawsuit, which he ultimately lost.<sup>118</sup> The Ohio State Board of Funeral Directors and Embalmers also sanctioned Edwards.<sup>119</sup> Four years later, alkaline hydrolysis remains illegal in Ohio, although a bill to legalize it was introduced in the Ohio House in 2013<sup>120</sup> and 2015.<sup>121</sup> The practice's continued illegality stems, in part, from concerns raised by the

---

<sup>112</sup> *E.g.*, FLA. STAT. ANN. § 497.005(20) (West 2015) ("'Cremation' means any mechanical or thermal process whereby a dead human body is reduced to ashes and bone fragments. Cremation also includes any other mechanical or thermal process whereby human remains are pulverized, burned, re Cremated, or otherwise further reduced in size or quantity.").

<sup>113</sup> *E.g.*, MINN. STAT. ANN. § 149A.02(16) ("'Final disposition; means the acts leading to and the entombment, burial in a cemetery, alkaline hydrolysis, or cremation of a dead human body.'").

<sup>114</sup> *See* Lemasters, *supra* note 111, at 27 ("As a general rule, every state has its own laws that regulate the disposition of human remains. The typical law on disposition of human remains defines burial, interment and/or cremation as final disposition options. However, until recently there were no states that specifically recognized alkaline hydrolysis as a form of final disposition of human remains. Because alkaline hydrolysis was not listed, most states agreed that it was not allowed.").

<sup>115</sup> *Id.*

<sup>116</sup> T. Scott Gilligan, *Ohio Court Rules Against Alkaline Hydrolysis*, OHIO FUNERAL DIRECTORS ASS'N (Feb. 14, 2012), [http://ofdaonline.org/aws/OFDA/pt/sd/news\\_article/56232/\\_PARENT/layout\\_details/true](http://ofdaonline.org/aws/OFDA/pt/sd/news_article/56232/_PARENT/layout_details/true).

<sup>117</sup> *Id.* (emphasis added).

<sup>118</sup> *Id.*

<sup>119</sup> *Id.*

<sup>120</sup> John T. McGough, *Legislative Update*, OHIO FUNERAL DIRECTORS ASS'N (Jan. 11, 2013), [http://www.ofdaonline.org/aws/OFDA/pt/sd/news\\_article/68639/\\_self/layout\\_details/false](http://www.ofdaonline.org/aws/OFDA/pt/sd/news_article/68639/_self/layout_details/false).

<sup>121</sup> John T. McGough, *Legislative Update*, OHIO FUNERAL DIRECTORS ASS'N (Oct. 12, 2015), [http://www.ofdaonline.org/aws/OFDA/asset\\_manager/get\\_file/117757?ver=305](http://www.ofdaonline.org/aws/OFDA/asset_manager/get_file/117757?ver=305).

Catholic Conference of Ohio that criticized it as disrespectful to the human corpse.<sup>122</sup>

A. Majority Rule: Broadening Cremation to Capture Alkaline Hydrolysis

Of the twelve states that have legalized alkaline hydrolysis, nine (a clear majority) have expanded the definition of cremation to capture reduction of the human body to bone fragments by means that do not use flame.<sup>123</sup> The controlling language defines cremation as any of the various processes that reduce the body. Examples of this language include any “mechanical or thermal process,”<sup>124</sup> “any mechanical, chemical, thermal, or other professionally accepted process,”<sup>125</sup> or “the mechanical and/or dissolution process that reduces human remains to bone fragments.”<sup>126</sup>

This language accords with the *Model Cremation Law and Explanation* of the Cremation Association of North America (CANA), which takes an expansive view of cremation. CANA defines cremation as “[t]he mechanical and/or thermal or other dissolution process that reduces human remains to bone fragments.”<sup>127</sup> As measured by the overwhelming number of jurisdictions that have adopted CANA’s language or variations of it until now, CANA’s advocacy has succeeded.

The advantage of this process-oriented approach is its flexibility and facilitation of diversity in disposition. Yet, this flexibility is a double-edged sword. An intrepid individual or funeral director might decide to test the bounds of the language’s flexibility in defiance of cultural and religious taste, not to mention public health.

In at least one other majority jurisdiction, a focus on process is eschewed and alkaline hydrolysis enumerated as a method of cremation.<sup>128</sup> While this variation on the majority rule enables the consumer to take advantage of alkaline

---

<sup>122</sup> Wynn, *supra* note 81.

<sup>123</sup> These jurisdictions include Colorado, Indiana, Illinois, Florida, Georgia, Kansas, Maine, Maryland, and West Virginia.

<sup>124</sup> *E.g.*, FLA. STAT. ANN. § 497.005(20) (West 2015); MD. CODE ANN. BUS. REG. § 5-101(e) (West 2016); W. VA. CODE. § 30-6-3(g) (West 2015).

<sup>125</sup> *E.g.*, GA. CODE ANN. § 43-18-1(5) (West 2015); *see, e.g.*, 225 ME. CODE R. § 10-144 (2009) (“Cremation: The technical process, using direct flame and heat, or other process, that reduces human remains to bone fragments. The reduction takes place through heat and evaporation, or through other processes, including, but not limited to, chemical dissolution.”).

<sup>126</sup> KAN. STAT. ANN. § 65-1760(e) (West 2015).

<sup>127</sup> MODEL CREMATION LAW AND EXPLANATION pt. 1, § I (CREMATION ASS’N OF N. AM. 2010), [http://www.bioresponsefuneral.com/pdf/Model\\_Cremation\\_Law\\_-\\_APPROVED\\_1-22-2010.pdf](http://www.bioresponsefuneral.com/pdf/Model_Cremation_Law_-_APPROVED_1-22-2010.pdf).

<sup>128</sup> *E.g.*, 410 ILL. COMP. STAT. 18/5 (West 2015) (“‘Cremation’ means the technical process, using heat and flame, or alkaline hydrolysis that reduces human remains to bone fragments. The reduction takes place through heat and evaporation or through hydrolysis.”).

hydrolysis as a lawful method of final disposition, it does not have the flexibility of the process-oriented approach. Specifically enumerating alkaline hydrolysis as cremation is, thus, not as ripe for challenge.

The benefits of the majority rule are practical. Legislatively, there is little need to construct additional regulatory infrastructure for an entirely separate form of disposition.<sup>129</sup> Moreover, from a transactional and industry perspective, there is little need to update “forms and procedures” to reflect a new way to dispose of human remains.<sup>130</sup> While the business of cremation can carry on as usual, as a practical matter, funeral professionals wishing to offer the service of alkaline hydrolysis must invest in different technology.

#### B. Minority Rule: Distinguishing Alkaline Hydrolysis from Cremation and Enumerating It as a Separate Form of Disposition

The technological distinction between traditional cremation and alkaline hydrolysis undergirds the argument for maintaining the conventional definition of cremation and enumerating alkaline hydrolysis as a separate method of disposition. Only three states, however, out of the twelve that have legalized alkaline hydrolysis, agree with this line of reasoning.<sup>131</sup> Moreover, the minority’s position accords with that of the National Funeral Directors Association (NFDA), an industry trade group that supports keeping the methods of disposition separate to avoid confusion.<sup>132</sup> Further supporting the idea of

---

<sup>129</sup> Lemasters, *supra* note 111, at 28 (“By including alkaline hydrolysis within the confines of cremation, there is little that the industry must change. The laws are already on the books.”).

<sup>130</sup> *Id.*

<sup>131</sup> Minnesota defines cremation as “the reduction of a dead human body to essential elements through direct exposure to intense heat and flame.” MINN. STAT. ANN. § 149A.02(9) (2015). Minnesota defines alkaline hydrolysis as “the reduction of a dead human body to essential elements through a water-based dissolution process using alkaline chemicals, heat, agitation, and pressure to accelerate natural decomposition; the processing of the hydrolyzed remains after removal from the alkaline hydrolysis vessel; placement of the processed remains in a hydrolyzed remains container; and release of the hydrolyzed remains to an appropriate party.” *Id.* § 149A.02(1a). Oregon specifies that “[d]issolution includes, but is not limited to alkaline hydrolysis.” OR. ADMIN. R. 830-011-0000(20) (2015). Wyoming defines cremation as “a technical process, using heat, which reduces human remains to bone fragments,” in which “[t]he reduction takes place through heat and evaporation” and “does not include other processes of disposition, chemical or otherwise.” WYO. STAT. ANN. § 33-16-502(a)(ix) (West 2015) (emphasis added). Wyoming defines “chemical disposition” as “the process by which a deceased human body is reduced to a powder by use of materials other than heat and evaporation.” *Id.* § 33-16-502(a)(v).

<sup>132</sup> MODEL GUIDELINES FOR STATE REGULATION OF ALKALINE HYDROLYSIS pmb. (NAT’L FUNERAL DIRECTORS ASS’N 2011), [https://nfda.org/other-documents-green/doc\\_download/1556-model-guidelines-for-the-state-regulation-of-alkaline-hydrolysis.pdf](https://nfda.org/other-documents-green/doc_download/1556-model-guidelines-for-the-state-regulation-of-alkaline-hydrolysis.pdf) (“Alkaline hydrolysis, which uses chemicals, heat and, in some cases, pressure and/or agitation, is a different disposition process than

decoupling alkaline hydrolysis from cremation is the Federal Trade Commission's regulatory definition of cremation as "a heating process which incinerates human remains."<sup>133</sup>

Although both conventional cremation and alkaline hydrolysis reduce the dead human body, they are distinguished by method. For instance, because each uses different equipment, it seems logical that each process has a unique regulatory scheme. This scheme could regulate not only the facility housing the equipment, but also the operator.

Poul Lemasters, however, points out that even within alkaline hydrolysis, there is diversity of method.<sup>134</sup> For example, some operators achieve reduction of the dead human body through heat, others through pressure.<sup>135</sup> Additionally, some machines are vertical and move, while others are horizontal and stationary.<sup>136</sup> These different ways of performing alkaline hydrolysis arguably call for separate regulation, given that each method might pose its own risks.

Another reason to maintain the statutory barrier between conventional flame-based cremation and alkaline hydrolysis is that the latter produces an effluent that ends up in wastewater plants.<sup>137</sup> Accordingly, it seems reasonable that operations be permitted and inspected by the relevant water and public health authorities, and operators appropriately licensed.<sup>138</sup> Similarly, the FDNA counsels that those who are the deceased's next of kin have informed consent regarding the process of alkaline hydrolysis, including what happens to the liquefied remains of the deceased.<sup>139</sup> In contrast, it is unclear whether this same advisory is provided to the next of kin of those who are buried conventionally. Human remains that are buried also liquefy, albeit at nature's pace.<sup>140</sup> The difference is time.<sup>141</sup>

#### IV. The Law of Alkaline Hydrolysis as Applied to Mortality Composting of Humans

Death law's divergent approaches to alkaline hydrolysis provide an analytical framework to examine the death industry's arguably next pioneering

---

cremation. While the residue remaining after the two processes are similar, the use of the term 'cremation' in regard to alkaline hydrolysis is misleading and should be avoided in statutes, regulations and descriptions of the alkaline hydrolysis process.").

<sup>133</sup> 16 C.F.R. § 453.1(e) (2015); *see also* Lemasters, *supra* note 111, at 25.

<sup>134</sup> Lemasters, *supra* note 111, at 28.

<sup>135</sup> *Id.*

<sup>136</sup> *Id.*

<sup>137</sup> *Id.*

<sup>138</sup> MODEL GUIDELINES FOR STATE REGULATION OF ALKALINE HYDROLYSIS, *supra* note 132, at pmb1.

<sup>139</sup> *Id.*

<sup>140</sup> Mirkes, *supra* note 3, at 56.

<sup>141</sup> *Id.*

innovation, mortality composting of humans. Katrina Spade's Urban Death Project, a design for composting human remains in an urban context, is garnering increasing media attention.<sup>142</sup> Moreover, the DeathLab at Columbia University's Graduate School of Architecture, Planning, and Preservation is pioneering a new design for death-related architecture in cities, necessarily calling into question conventional modes of final disposition.<sup>143</sup> As the history of death care innovation suggests, with respect to innovations such as embalming and cremation, it is only a matter of time before consumers begin to demand what's next. Law must adapt.

#### A. Is Mortality Composting Cremation?

The easiest means by which the law could evolve to include mortality composting as a means of lawful disposition is to include it as a method of cremation, mirroring the majority approach to alkaline hydrolysis.<sup>144</sup> As applied to mortality composting, this approach could broaden the definition of cremation in two ways. The first way would be to enumerate composting as a method of cremation, akin to what one jurisdiction has done with respect to alkaline hydrolysis.<sup>145</sup>

The second and more common way, however, is to focus on the process used in mortality composting to condense the body. In process-oriented jurisdictions, cremation is defined statutorily as a process (mechanical, thermal, or chemical) that reduces the body to bone.<sup>146</sup>

Most relevant to composting would be whether a statute includes the word "thermal" in its definition of cremation. Like cremation, composting uses heat to reduce the body; unlike cremation, however, it does not use flame, but aerobic

---

<sup>142</sup> *Press, supra* note 15 (indicating that in the past year, stories have appeared in national popular media outlets such as The Wall Street Journal, The New York Times, Slate Magazine, The Atlantic, and The Huffington Post).

<sup>143</sup> DEATHLAB, <http://www.deathlab.org> (last visited May 31, 2016).

<sup>144</sup> Many thanks to Katrina Spade of the Urban Death Project for suggesting this idea. Video Interview with Katrina Spade, *supra* note 5. Whereas under the minority approach, composting could be enumerated separately as a method of final disposition, alongside burial, cremation, alkaline hydrolysis, and burial at sea.

<sup>145</sup> *E.g.*, 410 ILL. COMP. STAT 18/5 (West 2015) ("'Cremation' means the technical process, using heat and flame, or alkaline hydrolysis, that reduces human remains to bone fragments. The reduction takes place through heat and evaporation or through hydrolysis."). This way of broadening cremation to include composting specifically likely poses more challenges than the second, indirect way, as it arguably requires legislative amendment.

<sup>146</sup> *E.g.*, FLA. STAT. ANN. § 497.005(20) (West 2015); GA. CODE ANN. § 43-18-1(5) (West 2015); KAN. STAT. ANN. § 65-1760(e) (West 2015); MD. CODE ANN. BUS. REG. § 5-101(e) (West 2016); W. VA. CODE. § 30-6-3(g) (West 2015); 225 ME. CODE R. § 10-144 (2009); MODEL CREMATION LAW AND EXPLANATION pt. 1, § I (CREMATION ASS'N OF N. AM. 2010), [http://www.bioresponsefuneral.com/pdf/Model\\_Cremation\\_Law\\_-\\_APPROVED\\_1-22-2010.pdf](http://www.bioresponsefuneral.com/pdf/Model_Cremation_Law_-_APPROVED_1-22-2010.pdf).

*Have a Scoop of Grandpa: Composting as a Means of Final Disposition of Human Remains*

microorganisms, open air, and organic matter.<sup>147</sup> As with alkaline hydrolysis and cremation, the bones may be collected, or within a year, they too are reduced and human biomass transformed into humus.<sup>148</sup> The critical ingredient is heat.<sup>149</sup> Because composting fundamentally is cooking, it is, therefore, a thermal process.<sup>150</sup>

In majority jurisdictions that already define cremation as a thermal-based reductive process, cremation would capture mortality composting. Even in jurisdictions that have not yet expanded the definition of cremation in response to alkaline hydrolysis, mortality composting may still fall under a conventional definition of cremation because it is a technical process that uses heat, though without flame, to reduce human remains.<sup>151</sup> Conceptually, therefore, composting is already a legal method of final disposition in some jurisdictions that have not yet even contemplated alkaline hydrolysis.

The humus and un-composted bone are the equivalent of cremated remains. Just as cremated remains are generally stored in an urn or scattered outside or at sea, un-composted bones may be stored in an urn. Bones could be allowed, however, to continue to compost and transform into humus. Similar to cremated remains, composted remains, or humus, could then be scattered on land in order to enrich it. These landscapes might include one's private garden, public parks, forests, meadows, or along highways for wildflowers.<sup>152</sup> At this moment in time, however, the idea of spreading human-based humus on crops that produce food for human consumption might come uncomfortably close to a scenario that evokes *Soylent Green*.<sup>153</sup>

Moreover, in those jurisdictions that use a process-oriented definition of cremation, but decline to define it as a "thermal" or "technical" process "that uses heat," the definition of cremation could be amended to include a "biological" process. Since composting is a man-made, yet also a biological process that uses heat, this change in the law would cover mortality composting of human remains.

Because we might imagine that mortality composting is akin to burial, it intuitively seems that the law should demand more from it than just simply expanding the definition of cremation. Unlike with cremation or alkaline

---

<sup>147</sup> ROACH, *supra* note 2, at 263; Bonhotal, Harrison & Schwarz, *supra* note 37, at 2; Price & Carpenter-Boggs, *supra* note 38, at 3-4.

<sup>148</sup> Bonhotal, Harrison & Schwarz, *supra* note 37, at 2.

<sup>149</sup> *Id.*

<sup>150</sup> *Id.*; Price & Carpenter-Boggs, *supra* note 38, at 8-9.

<sup>151</sup> See, e.g., MONT. CODE ANN. § 37-19-101(11) (West 2015) (defining cremation as the "technical process, using heat, that reduces human remains to bone fragments"); WIS. STAT. ANN. § 440.70(6) (West 2015) (defining cremation as "the process of using heat to reduce human remains to bone fragments").

<sup>152</sup> Bonhotal, Harrison & Schwarz, *supra* note 37, at 8 (advising that humus produced from livestock mortality composting be distributed in areas where there is low public (human or pet) "traffic").

<sup>153</sup> SOYLENT GREEN, *supra* note 7.

hydrolysis, wherein the body is reduced in a contained vessel that is located indoors, composting, like burial, would achieve reduction outdoors in a field or in a meadow. Unlike conventional burial, however, where the body is housed in a casket and cement vault, composting would be more akin to green or natural burial, where the cadaver is uncontained, save for a bio-degradable shroud or wooden box.

Design is instructive here. For instance, cremation may be performed outside in a pyre, as is the custom amongst Hindus in India.<sup>154</sup> In contrast, the law and custom in the United States confines cremation to a contained chamber or retort.<sup>155</sup>

Mortality composting arguably may occur both inside and outside, contained and uncontained. For instance, the Urban Death Project's design for human composting is enclosed and inside, making it more like cremation in the United States.<sup>156</sup> In contrast, mortality composting also is being tested at an outdoor forensic anthropological facility at Western Carolina University in North Carolina.<sup>157</sup> Thus, there is likely little reason why mortality composting cannot also take place outdoors, just as has been occurring for years with respect to animal remains.<sup>158</sup> It seems prudent, therefore, that the law be flexible enough to accommodate individual choice and different methods of human mortality composting while still regulating it in a way that ensures that the transformation to fertilizer is undisturbed by vermin, odor, and gawkers. The dignity of the body, as well as public health, is preserved.

## V. Conclusion

Mortality composting of humans arguably is one of the next innovations in death care. Law can adapt by looking to the bifurcated approach to alkaline

---

<sup>154</sup> *Death and Dying*, HINDUISM TODAY, <http://www.hinduismtoday.com/modules/smartsection/item.php?itemid=1667> (last visited May 31, 2016).

<sup>155</sup> *E.g.*, LA. REV. STAT. ANN. § 831(26) (West 2015) (“‘Cremation retort’ means the enclosed space within which the creation process takes place.”); N.Y. PUB. HEALTH LAW § 4202(3) (McKinney 2016) (“[C]remation shall be performed only in a retort used exclusively for such purpose.”).

<sup>156</sup> *Overview and Process*, URB. DEATH PROJECT, <http://www.urbandeathproject.org/#overview> (last visited May 31, 2016).

<sup>157</sup> *About Us*, URB. DEATH PROJECT, <http://www.urbandeathproject.org/#aboutus> (last visited May 31, 2016) (noting Urban Death Project's testing partnership with Western Carolina University's Forensic Osteology Research Station, whose web site is: <http://www.wcu.edu/academics/departments-schools-colleges/cas/casdepts/chemphys/academic-programs/fs/>); see also Kristina Killgrove, *These 6 'Body Farms' Help Forensic Anthropologists Learn to Solve Crimes*, FORBES (June 10, 2015), <http://www.forbes.com/sites/kristinakillgrove/2015/06/10/these-six-body-farms-help-forensic-anthropologists-learn-to-solve-crimes/> (noting that six outdoor research facilities for forensic anthropology exist in the United States).

<sup>158</sup> See Bonhotal, Telega & Petzen, *supra* note 11; Bonhotal, Harrison & Schwarz, *supra* note 37.

*Have a Scoop of Grandpa: Composting as a Means of Final Disposition of Human Remains*

hydrolysis. Under the majority rule, the definition of cremation may be expanded to include a thermal or biological process that reduces the body. Under the minority rule, composting, like alkaline hydrolysis, is enumerated as a separate method of final disposition.

In life, the question so often is *who* do we want to be; in death, increasingly it is *what* do we want to be. Just as the law in the United States accommodates diverse identities in life,<sup>159</sup> it should act to accommodate diversity of form in death. These forms include liquid (burial and alkaline hydrolysis), earth (scattered cremated remains), food (burial at sea), and fertilizer (mortality composting). The history of death care in the United States shows that disposition is an ever-shifting cultural and legal landscape. As law accommodated embalming, cremation, and increasingly alkaline hydrolysis, it likely also will accommodate mortality composting. The cycle of life continues.

---

<sup>159</sup> These multiple identities are created by race, gender, ethnicity, class language, sexual orientation, marital status, familial status, profession, occupation, etc.

