

THE LAW AND ETHICS OF USING THE DEAD IN RESEARCH

BY

CATHERINE M. HAMMACK

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Approved By:

Christine N. Coughlin, JD, Advisor

Nancy King, JD, Chair

Tanya Marsh, JD

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ABSTRACT

Although death is universal and unavoidable, and although research on the dead is essential to the well-being of the living, medical and legal professionals and ethicists have failed to carefully consider the issue of using the dead and their remains in research. This thesis will explore how the dead *are* treated (from a research perspective) and how the dead *may* be treated (from a legal perspective) in order to construct a possible framework in which medical and legal professionals can consider how the dead *should* be treated (from an ethical perspective). It begins with a brief introduction to how and why the dead's legal and ethical rights matter in research. Chapter I provides an introduction to death and the dead from a social and medical perspective, and explores the various ways the dead are treated outside of the research context. Chapter II analyzes historical and current uses of the dead in research with an emphasis on the posthumous treatment of physical remains. Chapter III provides a brief assessment of the existing law of the dead in the United States. Chapter IV concludes this thesis with a call for change in the law and ethics of cadaveric research.

INTRODUCTION

85.8. That is my life expectancy. As of today, I am expected to die when I am 85.8 years old.

100%. That is my death expectancy. As of today, I am expected to die. Indeed, my chance of dying is 100%, and 100% of us have this same death expectancy.

Of course, my life expectancy is an estimate. Further, it is continuously affected by a myriad of factors, some within my control and some beyond it. Furthermore, as I age, my life expectancy will correspondingly increase—from 88 by age 62 to 89.5 by age 70. But my death expectancy never changes. Studies say that I have an estimated 0.89% chance of dying in a car accident, 3.4% chance of dying from a chronic lower respiratory disease, and a little more than 14% chance of dying from heart disease or cancer.¹ Still, I have a 100% chance of dying. We all do.

But what will happen when I die? Beyond the philosophical questions is an indisputable fact: some part of me—my body or the parts or even information therefrom—will remain. But the questions persist. To whom do my remains belong? What rights do I have today in my future remains? Will I have any interest in my own remains *after* I have died?

The law in the United States recognizes and aims to protect the intrinsic worth of the dead and their remains; yet, medicine and research are redefining the value thereof. The living—dependent upon the healthcare system for their wellbeing and survival—may opine that the dead and their remains would benefit society through medical research, rather than being buried or burned. The legal and ethical status of the dead and their

remains are ambiguous at best, subject to ever-changing (yet often stubbornly static) social, religious, cultural, and even economic constructs.

Whether or not the dead know—or care—what happens after they have died is continuously debated. But one fact is clear: the dead *matter*. They matter to the living—not only to the survivors of the deceased, but to our society as a whole. Indeed, what happens when we die is not a problem for the dead—rather, it is a problem for the living. It is true at every time in every culture in every place that the dead and their remains matter to the living. The beliefs, behaviors, and rituals constituting respect and reverence vary, but the understanding that the dead and their remains are respected and revered does not. Even when the dead are *disrespected*—for example, by an enemy of the dead or survivors thereof—it is generally *because* of, not in spite of, the fact that the dead matter to the living.

Indeed, the ways in which survivors treat the dead and their remains varies widely and is dependent upon culture, time, religious beliefs, geographic location, social values, and the like. Although “[f]unerary and disposition practices vary widely between [*sic*] population groups based on culture, religious beliefs, and time periods,”² “[a]nthropologists note that one of the defining characteristics of humanity is that we do not casually dispose of what remains after death.”³ Indeed, for all the variations in how the dead are treated, some ideals remain consistent throughout time and place:

[W]hen it comes to the sort of essentials for a good death -- a good funeral -- the essentials are a corpse, mourners -- somebody to broker the changed relationship between the living and the dead -- the peace between them -- something to say a version of, “Behold, I show you a mystery” -- and then transport -- some movement . . . from here to there. We get them home again. We get them to the further shore.

We get them into their grave, their tomb, their fire, up into the tree. We get them . . . into the side of the mountain, where the birds come and pick the bones clean, and then we describe the birds as holy. It's what we do. . . . we've been doing it for 40 or 50,000 years.⁴

According to the “American way of death,” a decedent’s next of kin is responsible for the disposition of the remains (although the decedent’s estate is generally financially responsible), which usually involves a licensed, for-profit funeral director who embalms the body and prepares it for an open-casket viewing before the funeral, which is generally held in a funeral home.⁵ Thereafter, the vast majority of Americans are buried in a non-sectarian, for-profit or municipal cemetery (or a churchyard) in a single grave for perpetuity.⁶

We Americans not only treat the remains of our loved ones with great respect,⁷ but we also treat the remains of anonymous strangers with great reverence:⁸ traffic stops for funeral processions,⁹ funerals for celebrities and public figures draw large crowds throughout the country, donations are collected for the burial¹⁰ of anonymous corpses¹¹ and sympathetic strangers organize fundraisers to help defray funeral expenses, candlelight vigils and protests are formed to raise awareness of the dead, and knowledge of the mistreatment of remains sparks “disgust and anger”¹² throughout the general public. Indeed, the dead do matter.

Although the customs and procedures for dealing with death and the dead vary widely throughout time and place, the inevitability of death, which unites all mankind, is inescapable and universal. Still, although we agree that the dead are worthy of the utmost respect and that their remains are almost sacred, we fail to provide the issue of using the dead and their remains in medical research the legal and ethical attention it deserves. The

use of the dead in medical research is both the source and the product of chronic tensions between and among social, religious, cultural, economic, legal, and even clinical and research constructs and values. This thesis aims to illuminate the issues, inconsistencies, questions, and conundrums surrounding the medical, legal, and moral implications of using the dead in research.

Chapter I, *DEATH AND THE DEAD*, provides a brief introduction to death itself. Specifically, it (a) analyzes the biological, social, and psychological functions of death, (b) assesses the definitions of death throughout human history, with an emphasis on the modern re-definition of death, and (c) explores the posthumous treatment of the dead, with an emphasis on the American way of death.

Chapter II, *USING THE DEAD AND THEIR REMAINS IN RESEARCH*, assesses the use of the dead and their remains in research. Specifically, it (a) explores historical uses and controversies, with an emphasis on Judeo-Christian concepts of a literal resurrection and the dreaded “Resurrection Men,” and assesses modern uses and controversies such as (b) practicing medical procedures on the dead, (c) using the dead in educational exhibitions such as the infamous *BODY WORLDS*, and (d) using the dead in researching and developing products such as cars, firearms, and body armor. Finally, it (e) analyzes alternatives to cadavers for use in research.

Chapter III, *THE LAW OF THE DEAD*, discusses the current legal framework (or lack thereof) in the United States with an emphasis on the problematic quasi-property status of the dead and their remains, the potential for alternative legal rights in and of the dead and their remains, and the issue of to whom such property and rights belong. Specifically, Chapter III assesses (a) the living’s present rights in their own future

remains, (b) the living's present rights in another's current remains, and (c) even the possibility of the dead's rights in their own "present" remains.

Chapter IV, A CALL FOR CHANGE IN THE LAW AND ETHICS OF USING THE DEAD IN RESEARCH, calls for clarification of the law, regulation, and policy surrounding the use of the dead and their remains in medical research, as well as a change in perspective within the medical and ethics communities and our death-denying culture as a whole.

Throughout this thesis, rather than establish definitive answers, my purpose is to ask questions regarding the way the dead (1) *are* treated, from a medical research perspective, (2) *may* be treated, from a legal perspective, and (3) *should* be treated, from an ethical perspective. Indeed, my analysis is not merely of the existing and potential medical and legal stati of the dead, but also of the moral stati thereof.

I

DEATH AND THE DEAD

Throughout time, the subject of death has been as much an object of our obsession as it is a taboo. It is universal—we will all die—yet foreign because none of us has died yet. Death is a ubiquitous mystery, inescapable even in life, for everyone has been affected by the death of a loved one, or perhaps even a stranger. Indeed, our lives—our biology, our culture, and even our individual personhood—are continuously affected by death.

WHY WE DIE: THE FUNCTIONS OF DEATH

“[F]or there to be life there must be death.”¹³ Indeed, death—and the living’s knowledge that everyone will eventually die—serves important functions. As a biological function, death is necessary for the evolutionary development of our species.¹⁴ It ensures a continuous replenishing of the gene pool while effectuating biological stability and modification.¹⁵ It balances population growth, preventing human beings from reproducing beyond the capacities of our resources and environment.¹⁶

More important, however, are death’s social functions. Death “dilutes concentrations of power and wealth” and “allows the upward mobility of younger generations.”¹⁷ Just as death replenishes the gene pool, it replenishes the “meme (the cultural equivalent of DNA) pool”¹⁸—just as some genetic attributes die off with their carriers, some social values die off with their adherents.¹⁹ In other words, just as biological progress occurs when older generations die off with their physical attributes, “social progress . . . occurs when older generations die with their prejudices and

beliefs.”²⁰ Although it divides generations, death nonetheless serves to unify the living: “Death commands human attention and its associated rituals . . . harness death’s power to increase social solidarities and promote change.”²¹

Indeed, groups often promote and maintain social solidarity by demonstrating their reverence of their dead: since 1883, Texas A&M University students, faculty, and alumni observe “the Muster,” or a ceremonial reading of the names of students and alumni who have died in the past year;²² since 2001, people throughout the United States have remained silent for one minute at 8:46am on every September 11;²³ since 2007, college students and alumni throughout the United States have proclaimed that “we are all Hokies” every April 16.²⁴

Similarly, groups often promote and maintain social and political change by citing their dead as martyrs for their causes.²⁵ For example, in 1911, 500 unorganized laborers were locked inside the Triangle Shirtwaist Company factory in an attempt to prevent workers from leaving and labor organizers from entering.²⁶ When the factory caught fire, the locked doors prevented workers from escaping—many were forced to jump from windows, falling up to nine stories to their deaths on the sidewalk below.²⁷ The death toll of 146 sparked outrage in a previously disinterested and ignorant public. The dead were cited as martyrs for the International Ladies’ Garment Workers’ Union; led to the governor-appointed Factory Investigation Commission; and inspired other legislative, political, and social action to improve working conditions and enforce safety standards.²⁸

More recently, the deaths resulting from various shootings throughout the United States have caused an influx of social and political debate regarding gun control. For example, within mere hours of the deaths of twenty young children and six adults at

Sandy Hook Elementary School on December 14, 2012, in Newtown, Connecticut, a “petition calling for the White House to ‘immediately address the issue of gun control through the introduction of legislation in Congress’” far surpassed the 25,000 signatures required for review by the President’s administration.²⁹ While the social and political debate rages on, the twenty-six deaths at Sandy Hook Elementary School are cited as cause for change not only in local and federal legislation and schools’ protocols, but also in the economic market aside from firearms and ammunition. For example, a group of teachers recently developed “The Sleeve,” a device that can be quickly placed upon a classroom door to prevent entry by an intruder,³⁰ and parents can now send their children to school with the “Bodyguard Blanket,” a blanket-like shield which is made of body armor used in the military and law-enforcement.³¹

While death serves important biological and social functions, it further provides a psychological function.³² Death forces contemplation and self-reflection:³³ it “poses the ultimate of ‘deadlines’ and thereby forces prioritization and the setting of personal and collective goals”³⁴ and often effectuates an appreciation of life.³⁵ Indeed, death not only affects our society and culture—it can even affect our personal ethics by “intensify[ing] individuals’ allegiance to moral codes.”³⁶ Researchers have found that “when awareness of death is increased, in-group solidarity is intensified, out-groups become more despised, and prejudice and religious extremism are increased.”³⁷

Indeed, “for there to be life there must be death.”³⁸ Still,

[n]o one wants to die. Even people who want to go to heaven don't want to die to get there. And yet death is the destination we all share. No one has ever escaped it. And that is as it should be, because Death is very likely the single best invention of Life. It is Life's change agent. It clears out the old to make way for the new. Right now the new is you, but someday not too long from now, you will gradually become the old and be cleared away.³⁹

But death's biological, social, and psychological functions are what death *does*—only one component to what death *is*.

DEFINING DEATH: THE MUDDY BANKS OF THE RIVER STYX

According to Greek mythology, the River Styx marked the boundary between the earth and the underworld or afterlife; it was a clear, tangible, and physical division between the living and the dead.⁴⁰ But beyond Greek mythology and throughout human history, we have lacked such a clear definition of death. Due to cultural, legal, and ethical differences, there is no bright line rule—or river—identifying who is dead or defining what death is. If the River Styx marks a division between life and death, its banks are muddy and its waters are murky. Indeed, “[t]he boundaries which divide life from death are at best shadowy and vague. Who shall say where the one ends, and the other begins?”⁴¹

What *is* death? It is a question that has been answered many times in many ways throughout human history: a transition into another form of existence;⁴² the “final end”⁴³ after which nothing occurs;⁴⁴ “the total and permanent cessation of all . . . vital functions”;⁴⁵ the age of forty;⁴⁶ “nothing at all.”⁴⁷ In 1768, the first edition of

Encyclopædia Britannica exclaimed with confidence that “DEATH is generally considered as the separation of the soul and body; in which sense it stands opposed to life, which consists in the union thereof.”⁴⁸ Over the next few hundred years, this definitive declaration was modified countless times until it disappeared from the definition entirely. By 1973, the entry acknowledged that “death ‘can only be conjectured’ and is ‘the supreme puzzle of poets.’”⁴⁹ The current definition—“the total cessation of life processes that eventually occurs in all living organisms”⁵⁰—is immediately preceded by an admission that the definition of death “has always been obscured by mystery and superstition, and its precise definition remains controversial, differing according to culture and legal systems.”⁵¹

Still, for such a universal concept, the definition of death remains enigmatic. In addition to mystery and superstition, the definition of death is further obscured by the various ways in which (and purposes for which) the word is used: “death” may mean an *event* which ends a life and “occurs at a particular time and place and in a particular way”⁵² which can be observed and documented with specificity (in, for example, a death certificate). Alternatively, it may mean a “nonreversible *condition* in which an organism is incapable of carrying out the vital functions of life”⁵³; finally, it may mean a *state or form of existence* (or nonexistence) following the end of a physical life.⁵⁴ Furthermore, defining death has been (and will continue to be) further obscured by advancements in biology, medicine, and technology.⁵⁵

Throughout most of human history prior to the bio-medical innovations in the mid-20th century, “death was defined through a combination of everyday observations and beliefs.”⁵⁶ The overarching belief upon which most traditional definitions were

based was that death was the detachment of one's soul or spirit from one's physical body.⁵⁷ This dualistic perspective, based on the idea that “[r]eality consists of two forms of essence, one of which is material and certain to decay, the other of which has a more subtle essence that can depart from its embodied host,”⁵⁸ was pervasive in the “belief systems at the dawn of known history”⁵⁹ and remains central to the major religions of the world today.⁶⁰

Traditional definitions of death were also based on observations of the dead as compared to the living.⁶¹ Such observations included the perception of blood as the *physical* essence of life (and breath as the *spiritual* essence of life) and that the loss of blood could cause death.^{62, 63} Further, traditional definitions of death were based on the understanding of death as a *process*, rather than an instantaneous event—although loss of one's physical essence may be apparent (such as rigor mortis or the loss of blood), the process of death was complete only upon the liberation of the soul (or spirit).⁶⁴ Accordingly, “the cold pallor of the dead” was evidence that both the physical and spiritual essences had ceased—the remains lacked the blood required for one's material form and were certain to decay, and the breath had departed from its embodied host.⁶⁵

One example of a traditional definition of death (and the beliefs and observations upon which it was based) is apparent in the burial practices of the earliest modern humans: Cro-Magnons painted the remains of their dead in red ochre, symbolically replenishing the blood (thereby acknowledging the decay of the physical essence), and buried the remains with grave gifts, or items to be used by the dead in the afterlife (thereby acknowledging the survival of the spiritual essence).⁶⁶ And so, from the dawn of our own species, death was primarily defined as some variation on a universal truth:

death is a process by which the spiritual essence survives after its departure from the physical essence, which will inevitably decay.⁶⁷

Although the spiritual essence was—and, to many, *is*—crucial to defining death from a dualism perspective, the theoretical existence of the soul or spirit is beyond the scope of this thesis. Still, it should be noted that the remains of the dead have been used in medical research in an attempt to study the physical existence of a soul or spirit. Nonetheless, this thesis focuses on the other side of the obol⁶⁸: the *physical* essence.

Indeed, it is only the physical essence that is observable by those determining death. Accordingly, most historical determinations of death were based entirely on observations of the physical essence. For example, “[a]ccording to Hippocrates (460-370 BCE), a diagnosis of death could be made if there was a pallid face, sunken eyes, caved-in cheeks, and rigidity of the body.” Such basic changes in the physical essence served as the essential indicators of death until the mid-nineteenth century when pathologists in Europe identified three specific stages of physical decay.⁶⁹

The first stage, *rigor mortis*, is manifested in the gradual stiffening of the body muscles in the initial hours after death. . . . The second indication that death has occurred is *algor mortis*—the slow cooling of a warm-blooded corpse as it equilibrates with the surrounding temperature. . . . The third stage is *livor mortis*, which occurs when the red-purple stain of lividity appears, a state caused by the gradual settling of blood as blood pressure drops to zero. This leads into the most reliable stages of death, autolysis—the breaking down of tissues by the body’s own internal chemicals and enzymes—and putrefaction, the breakdown of tissues by bacteria. Both are necessary for the decomposition of the dead body, and once these processes start a body is very definitely dead.⁷⁰

By the mid-twentieth century, physicians had identified several diagnostic indicators of death which occur before the decay process begins; with the help of a physician, one did not have to personally observe a loved one's physical decay to be certain that death had occurred. Instead, physicians established that "the absence of cardiac activity, respiration, and responsiveness"⁷¹ indicated that death had occurred, and could make such a diagnosis long before the decay process began. Accordingly, the common law defined death as "the cessation of life as indicated by the absence of blood circulation, respiration, pulse, and other vital functions."⁷² Thus, people who showed no sign of physical decay could nonetheless be medically and legally dead—but were they "*very definitely* dead?"⁷³

Indeed, while some were developing a better medical understanding of death and dying, the rest of Europe was developing a personal understanding thereof: diseases such as plague, cholera, typhoid and typhus caused countless deaths. Still, both the medical profession and the general public would soon be overwhelmed by a new epidemic: taphephobia.⁷⁴

Taphephobia—the fear of being buried alive—was not unreasonable,⁷⁵ as Europe was inundated with multiple medical conditions which could significantly decrease cardiac activity, respiration, responsiveness, and other vital functions to the point of obscuring a physician's detection thereof, causing erroneous determinations of death.⁷⁶ Indeed, "[d]iseases such as plague, cholera, typhoid and typhus . . . were known to produce coma and lower the heart rate as well as the body temperature, mimicking the symptoms of death and confusing even the most diligent of physicians."⁷⁷ As one anatomist of the time explained, "[d]eath is certain, since it is inevitable, but also

uncertain, since the diagnosis is sometimes fallible.”⁷⁸ Of course, following an erroneous diagnosis of death was an erroneous burial—with these realizations, taphephobia spread like a plague.

Various new precautions were undertaken to prevent or remedy erroneous death diagnoses. In 1816, the stethoscope was developed by René Laënnec, and first used by Eugène Bouchut to detect a heartbeat.⁷⁹ According to Bouchut, “if no heartbeat was heard for two minutes, the patient could reliably be declared dead.”⁸⁰ However, this wooden stethoscope was not capable of detecting a faint heartbeat.⁸¹ Still, the stethoscope was a major milestone in the definition and diagnosis of death.⁸² In 1905, Séverin Icard developed the florescin test for diagnosing death.⁸³ Icard developed “a harmless coloured fluorescent solution that was injected into a vein in the arm: if blood still circulated, the entire skin would turn yellow and the eyes an emerald green; if the body was dead, these fluorescent transformations did not occur.”⁸⁴ The florescin test was the precursor to radionuclide cerebral angiography,⁸⁵ one of many tests currently used in determining brain death.⁸⁶

Physicians developed additional diagnostic procedures to ensure that death had indeed *already* occurred, such as pricking the skin or changing the body’s position to test for a response.⁸⁷ But as the fear of premature burial intensified, so did the tests: from “thrusting long needles under the toenails and pouring boiling . . . wax over the head”⁸⁸ to “thrusting a red-hot poker” or “blowing tobacco smoke into the victim’s anus,”⁸⁹ many tests were designed to resuscitate a living person from his or her death-like state⁹⁰ but actually resulted in mutilation of an already-dead body.

Still, the public mistrust of medical death diagnoses persisted, and the public sought its own remedies to taphephobia by taking precautions not only to prevent erroneous death diagnoses, but also to prevent or remedy the premature *burials* resulting therefrom. Some members of the public instructed physicians to cut their carotid arteries or otherwise mutilate their corpses upon diagnosis of death to ensure that death had indeed occurred, even if the diagnosis were erroneous.⁹¹ Coffins were modified to include fail-safe measures such as alarms and air vents to be activated by the victim,⁹² strategically-placed mirrors allowing passersby to monitor the contents of a coffin,⁹³ and even “a ladder by which the victim of a premature burial could ascend to the surface as well as a bell to summon assistance from the land of the living.”⁹⁴

Additionally, the development of resuscitation techniques in the late eighteenth century allowed a “dead” person—or a person who truly lacked cardiac activity, respiration, responsiveness, and other vital functions—to “come back to life”—or regain those functions.⁹⁵ These advancements in knowledge and technology ushered in a “growing sense of uneasiness regarding the definition of death.”⁹⁶ Yet, the medical and legal definitions—by which “death” was defined as the lack of vital functions—remained unchanged.⁹⁷ Eventually, professional use and public knowledge of cardiopulmonary resuscitation, life support systems, and organ transplantation became widespread—accordingly, the practical, legal, and ethical problems regarding the definition of who was “dead” proved insurmountable.⁹⁸ A re-definition of death was unavoidable.

One suggestion for redefining death was the use of “clinical death,” whereby a person may be declared clinically dead upon the loss of cardiac function, but physicians must nonetheless perform resuscitation and other techniques in an attempt to restore

cardiac function.⁹⁹ In other words, a person was clinically dead so long as the attempted resuscitation failed; however, if the cardiac function was restored, then that person was merely *temporarily* dead.¹⁰⁰ The proponents of this definition argued that it acknowledged a central criterion for the prior medical definition of death (absence of cardiac activity), but also allowed for new revival tools and techniques.¹⁰¹ Opponents rejected this definition on the grounds that it “had no firm standing in legal tradition or legislative action”¹⁰² and, more importantly, that neither medical professionals nor the public liked the idea of being temporarily dead.¹⁰³ Eventually, the idea of “clinical death” died off.¹⁰⁴

Another suggestion was the cellular approach to defining death, which emerged from technological advances in experimental biology.¹⁰⁵ The basis of the cellular approach was the recognition of death as a basic process which is inherent not only in a living organism itself, but in its individual organs, tissues, and cells.¹⁰⁶ It recognized that these smaller biological units survive the death of the person—according to this approach, that one has “died” (per traditional standards) does not necessarily mean that all life within one’s body has died.¹⁰⁷ But the cellular approach raised more questions than answers, particularly regarding *how many*—and exactly *which*—biological processes must cease or survive *for how long* in relation to a diagnosis of “death.”¹⁰⁸ For example, if the biological processes within one’s brain cease while the biological processes in one’s heart and lungs are maintained by external life support systems, is that person dead, alive, or something else?¹⁰⁹

Another suggestion for re-defining death was “brain death,” which emerged from technological advances in monitoring electro-cerebral activity.¹¹⁰ According to this

approach, the requisite level of electro-cerebral activity is the “core determinant” in the re-definition of death, to be supported by various additional criteria such as “inability to maintain circulation without external support and complete unresponsiveness.”¹¹¹

Indeed, “brain death refers to a state of such severe and irreparable damage that no mental functioning exists or can return.”¹¹²

In 1968, an official re-definition of “death” including brain death as the core determinant, along with traditional criteria, was proposed by an Ad Hoc Committee of the Harvard Medical School:¹¹³ “[a] person was dead if unresponsive, even to ordinarily painful stimuli, showed no movements and no breathing, as well as none of the reflexes that are usually included in a neurological examination,”¹¹⁴ pursuant to the traditional criteria, *and* if he or she lacked the requisite level of blood circulation in the brain and produced a flat electroencephalogram reading.¹¹⁵ This approach quickly became the dominant approach, as it was adopted by both the American Medical Association the American Bar Association.¹¹⁶

In 1981, the President’s Commission for the Study of Ethical Problems in Medicine and Biomedical and Behavioral Research proposed a “philosophical definition of brain death in terms of the loss of the critical functions of the organism as a whole.”¹¹⁷ That same year, the National Conference of Commissioners on Uniform State Laws incorporated this definition into the Uniform Determination of Death Act, “which has been adopted in [forty-five] states and recognized in the rest through judicial opinion.”¹¹⁸ The Uniform Determination of Death Act “recognizes both the common law standard for determining death and accepted medical criteria for determining brain death.”¹¹⁹ Accordingly, under the Act, “a person who loses the total function of either the

cardiorespiratory . . . system, or of the entire brain, is legally dead.”¹²⁰ The Uniform Determination of Death Act will be discussed in detail in CHAPTER III: LAW OF THE DEAD.

In support of re-defining death as “brain death,” proponents cite the “the brain’s importance in determining who we are and its crucial role in driving the activity of bodily organs and systems.”¹²¹ Further, they cite the clear neurologically-based definition, criteria, and standards of diagnosis.¹²² Furthermore, they argue, this definition is the most medically reliable (“If professional standards are followed properly, there are no false positives”¹²³) and “errs on the side of certainty.”¹²⁴ But brain death is not necessarily as clearly defined as it may seem.

Even among those who accept brain death as a medically sound definition of death, debates continue with regard to how much of the brain must lack activity.¹²⁵ One proposed approach to brain death is that death occurs upon the irreversible loss of the cerebral functions which constitute the individual *person*, such as “intellect, memory, and personality.”¹²⁶ Under this “cerebral death” approach, “the death of the *person* should be the primary consideration”¹²⁷ (as opposed to the *body*), and because a person exists only insofar as he or she possesses cerebral functioning, the permanent lack thereof constitutes death—inactivity in the brain stem, which is responsible for lower functions such as respiration and homeostasis, is sufficient, but not necessary, for determining death.^{128, 129} The approach adopted in every state that recognizes brain death, however, is the “whole death” approach: because “some vital functions might still be present or potentially capable of restoration even when the higher centers of the brain . . . have been destroyed,”¹³⁰ death occurs only upon the loss of *all* brain activity.¹³¹

Still, some communities and cultures reject the idea of “brain death” all together.¹³² Opponents of defining death as “brain death” cite not only biological but also philosophical problems with “brain death.”¹³³ From a philosophical perspective, opponents opine that the “rationale for the concept that the unifying function of the body has been lost with loss of brain functioning”¹³⁴ is inadequate.¹³⁵ From a biological perspective, “there is still a sense that the body is alive, often long after death occurs;”¹³⁶ wounds can continue to heal, “a pregnancy can be maintained even after the pregnant woman has met the neurological criteria for death,”¹³⁷ “most organs continue to function for some period, [and] hormonal and body-temperature regulation may be maintained.”¹³⁸

The definition—and, accordingly, time—of death is more than merely a matter of semantics. Rather, it is a highly significant legal boundary.¹³⁹ The determination of death “changes a person’s legal status.”¹⁴⁰ “Death ends marriage, initiates the transfer of property to its next owner, ends some contractual and parental obligations . . .”¹⁴¹ and “determines who is recognized as a person with constitutional rights, who deserves legal entitlements and benefits, and when last wills and testaments become effective.”¹⁴²

But for all the significant legal consequences,¹⁴³ states nonetheless differ in their statutory definitions of death. While all states and D.C. recognize brain death, New Jersey has established a specific exception from the use of brain death criteria in determination of death for cases in which a physician “has reason to believe, on the basis of information in the individual’s available medical records, or information provided by a member of the individual’s family or any other person knowledgeable about the individual’s personal religious beliefs that [a declaration of death upon the basis of neurological criteria] would violate the personal religious beliefs of the individual.”¹⁴⁴

Oklahoma requires that “all reasonable attempts to restore spontaneous circulatory or respiratory functions”¹⁴⁵ be made prior to a declaration of death. While every state (with the exception of Georgia) and D.C. specifies a standard upon which a determination of death should be based (generally, “in accordance with accepted medical standards” or some variation thereof), only seventeen states specify *by whom* such a determination may be made.¹⁴⁶

Accordingly, “[i]t is possible that an individual could be declared dead in one state and not in another even though, by medical standards, he or she is just as dead in both places.”¹⁴⁷ For example, suppose that I am attached to a respirator in an irreversible coma due to severe traumatic head injuries, and my physician has determined that I have permanently lost all brain functions. In Alabama, I am legally dead. Yet, just across the state line in Florida, I am *not yet* legally dead until an additional physician (specifically, “a board-eligible or board-certified neurologist, neurosurgeon, internist, pediatrician, surgeon, or anesthesiologist”) determines my brain death. Still, in New Jersey, I am legally dead *unless* any person claiming to know my personal religious beliefs declares that such beliefs would be violated by a determination of brain death—in that case, I am legally alive. Thus, my status as alive or dead depends not only on medical criteria, but on the legal definition within a particular jurisdiction.

POSTHUMOUS TREATMENT OF THE DEAD

Regardless of geographic location or legal jurisdiction, according to the “American way of death,” one usually dies in an institutional setting^{148, 149} (rather than at home). Thereafter, one’s remains are usually embalmed in preparation for the funeral, which often includes an open-casket viewing, followed by cremation and/or burial in a non-sectarian, for-profit or municipal cemetery (or a churchyard) in a single grave for perpetuity.¹⁵⁰

Embalming is

a process of chemically treating the dead human body to reduce the presence and growth of microorganisms, retard organic decomposition, and restore an acceptable physical appearance.¹⁵¹

Although the method and prevalence of modern embalming is relatively recent, we humans have been preserving our dead for many centuries and for many reasons. For example, Ancient Egyptians believed that after one’s death,

the “Ka,” an entity closely associated with the physical body[,] was able to eat, drink and smell, and essentially enjoy the afterlife. The soul, or “Ba,” could not survive without the body, and . . . had to be able to recognize its body to be able to return to it. Thus the body’s preservation was essential in order for a person both to reach the afterlife, and to be able to enjoy it.¹⁵²

Accordingly, immediately after one’s death began the extensive, complex, and time-consuming mummification process.¹⁵³ In an attempt to prevent decay so that the soul could reunite with its body,¹⁵⁴ the dead’s internal organs (such as the liver, stomach, lungs, and intestines) were removed and placed in a separate container to be entombed alongside the body.¹⁵⁵ Other organs which were believed to be of no use to the dead in

the afterlife (such as the brain) were discarded entirely.¹⁵⁶ The heart—“the source of a person’s life force”—remained in the body.¹⁵⁷ After being “padded so that it retained its lifelike proportions,” the body was placed in the desert to be dried by the natural environment, then covered with natural preservatives.¹⁵⁸ Thereafter, a priest performed last rites and the body was carefully wrapped, decorated, and entombed in a series of coffins bearing instructions and blessings for the afterlife.¹⁵⁹

In Medieval England, the “aristocracy and high-ranking ecclesiastics”¹⁶⁰ were embalmed in an attempt to preserve their bodies for a literal Resurrection.¹⁶¹ In sixteenth-century Europe, William Harvey’s (1578-1657) discovery of the circulatory system set the foundation for arterial embalming in order to “preserve the dead for anatomical dissection and study rather than for religious or other reasons.”¹⁶² The modern tradition in the United States of embalming merely for burial purposes developed during the Civil War, when¹⁶³

[f]or family members and friends in the North, the prospect of loved ones dying far away from home, and being interred in what most considered to be profane Southern soil, led to a great deal of anguish and outrage. . . . [S]ome families, particularly the more affluent families in the North, would do whatever they could to bring the body of a loved family member's home, either by making the trip south on their own, or paying someone to locate, retrieve, and ship the body north.

As a result of these desires—to maintain familial control over the final resting place and, if possible, to have one last look before the body vanished—a new form of treating the dead appeared on the social scene, and paved the way for the birth of an entirely modern funeral industry. Undertakers who contracted with Northern families began to experiment with innovative means to preserve bodies that had to be shipped long distances on train cars, often during the hot summer months. The revolutionary practice

that emerged in this context, embalming, provided both the military and Northern communities with a scientific, sanitary, and sensible way to move bodies across the land.¹⁶⁴

Today, approximately sixty-eight percent of the dead in the United States are embalmed before final disposition of cremation or burial.¹⁶⁵ Modern embalming involves *vascular* (or *arterial*) embalming—whereby embalming fluid is pumped throughout the circulatory system to replace the blood therein—and *cavity* embalming—whereby fluid and bacteria are removed from the major internal organs and replaced with embalming fluid.¹⁶⁶ This process is substantially similar to the aforementioned mummification process of Ancient Egypt or the embalming methods of medieval Europe. It differs, however, in that the purpose of embalming today is “to keep a cadaver looking fresh and uncadaverous for the funeral service”¹⁶⁷ in an attempt to aid the survivors’ grieving, rather than to preserve the body for the afterlife, Resurrection, or anatomical dissection.¹⁶⁸ Indeed, “[t]he general idea of embalming is to retard the breakdown of the remains for a few days in order to create a pleasant ‘memory picture’ at the viewing.”¹⁶⁹ Accordingly, embalming fluid, which is generally formaldehyde-based¹⁷⁰ (though its exact make-up is a closely-held secret of the funeral industry), is often tinted in order to remedy the aforementioned “‘deathly pallor’ that characterizes the human body when blood has ceased to flow”¹⁷¹ and “also ‘firms up’ the blood vessels so that the skin does not sink.”¹⁷²

Indeed, this “memory picture” is a crucial component of the American way of death, as it both relieves and perpetuates the United States’s death-denying culture¹⁷³ by minimizing the social and psychological disruption that death and the dead cause to the

living.¹⁷⁴ The tradition¹⁷⁵ of viewing the body before its final disposition serves the allegedly¹⁷⁶ important psychological function of providing the “memory picture”¹⁷⁷ to the decedent’s survivors. It also “reassures the family that . . . their loved one is unequivocally dead and not about to be buried alive, and . . . that the body in the casket is indeed their loved one.”¹⁷⁸ Such reassurance is now necessary because in American way of death, the disposition of remains involves a licensed, for-profit funeral director who embalms the body and prepares it for an open-casket viewing and/or funeral, which are generally held in a funeral home.¹⁷⁹ In other words, although historically the decedent’s family prepared their dead for burial, today “specialists are paid to impersonally manage the deaths of family members within institutional settings . . . and . . . to dispose of their physical remains.”¹⁸⁰

Indeed, after the viewing and/or funeral, the remains reach their final disposition: “[i]n 2011, an estimated 42% of American deaths resulted in cremation and 58% in ground burial.”^{181, 182} “If the body is to be cremated, it is usually transported to the crematory by the funeral director. Sometimes there is a ceremony when the corpse is placed in the retort. Remains are normally cremated in a casket.”¹⁸³ Cremation by fire—though historically “discouraged or banned”¹⁸⁴ by either law, religious doctrine, or both¹⁸⁵—is increasing in practice and acceptance “due to the scarcity of land, the expense of ground burial, and environmental concerns.”¹⁸⁶ Nonetheless, the majority of Americans are buried in a non-sectarian, for-profit or municipal cemetery (or a churchyard).¹⁸⁷

If the method of disposition is ground burial, the corpse is transported by the funeral director to a cemetery where a graveside service is conducted by the funeral director or a religious leader. The casket is then lowered into a vault, usually made of concrete and/or steel, sealed, and covered with dirt. The corpse has thus been committed to a single grave, theoretically for perpetuity.¹⁸⁸

Yet, traditional methods of disposition are not the only options for disposing of remains. After cremation by fire, cremains can again be heated to about 5,400°F (3,000°C), then compressed, and transformed into a diamond.¹⁸⁹ In fact, “[t]he average person yields enough carbon to make fifty to a hundred diamonds,”¹⁹⁰ which can then be worn as jewelry by the decedent’s survivors.¹⁹¹ Alternatively, cremains may be mixed with molten glass to make an ornament,¹⁹² encased in shotgun shells and fishing bait,¹⁹³ incorporated into Frisbees, basketballs,¹⁹⁴ and fireworks, and even launched into space.¹⁹⁵

Still, cremation by fire and ground burial are not the only options for disposition. Reductive cremation, also called “water reduction,”¹⁹⁶ is a process whereby a combination of water and alkali (or lye) “create[s] a pH environment that frees the hydrogen ion of the water to break apart the proteins and fats that make up a living organism.”¹⁹⁷ This process dissolves a human body in only a few hours, reducing it to “a pile of decollagenated bones that can be crumbled in one’s fingers”¹⁹⁸ and “a sterile ‘coffee-colored’ liquid”¹⁹⁹ which “can safely be flushed down the drain.”²⁰⁰ Another alternative, which is currently under development in Sweden and not yet available in the United States, is “promession,”²⁰¹ or “human composting.”²⁰² Remains will be “lowered into a vat of liquid nitrogen and frozen,”²⁰³ then shattered into tiny pieces by vibration or ultrasound waves. Those frozen pieces will be freeze-dried and “used as compost for a memorial tree or shrub.”²⁰⁴

Another alternative—which would not preempt any of the aforementioned options for disposition—is donation for medical research.

II USING THE DEAD AND THEIR REMAINS IN RESEARCH

Generally, “all research involving human subjects conducted, supported or otherwise subject to regulation by any federal department or agency . . .”²⁰⁵—in particular, human subjects research funded by the NIH—is subject to the Department of Health and Human Services’ Federal Policy for the Protection of Human Subjects and, in most cases, to review by an Institutional Review Board.²⁰⁶ However, a “human subject” is explicitly defined as “a *living* individual.”^{207, 208} Thus, research involving the dead and their remains “does not fall under the technical definition of human subjects research in the U.S., leaving the ethical issues raised by such research unsupervised by an IRB.”²⁰⁹ Further, clinical investigations regulated by the Food and Drug Administration (regarding products regulated thereby or pursuant to the Federal Food, Drug, and Cosmetic Act²¹⁰)—in particular, drugs and medical devices for human use—are subject to similar federal regulations.²¹¹ Although the regulation does not explicitly define “human subject” to be living, it does provide that a human subject is “either a healthy human or a patient,”²¹² each of which presumes that the individual is alive.

Although the idea of using the dead for practicing medical procedures, educating scholars and the public through exhibitions, and researching and developing various products may seem to be unique to the modern day, the many medical, legal, and ethical questions that persist today are the products of a complex history of using the dead in research. From the first illustrated medical textbook to the art of Leonardo da Vinci, and from the Biblical promise of a Resurrection to the threat of “Resurrection Men,” our current cultural and legal framework is the direct product of these historical uses and

controversies.

HISTORICAL USES AND CONTROVERSIES

“None of the world’s oldest civilizations dissected a human body, which most people regarded with superstitious awe and associated with the spirit of the departed soul. Beliefs in life after death and a disquieting uncertainty concerning the possibility of bodily resurrection further inhibited systematic study.”²¹³ The limited knowledge of human anatomy and physiology was instead derived from the treatment of wounds, injuries, and illnesses.²¹⁴

Ptolemy I Soter (367_{B.C.E.}–283_{B.C.E.}) was the first leader to publicly approve of using the dead to study human anatomy and physiology.²¹⁵ Around 300 _{B.C.E.}, he “issued a royal decree encouraging physicians to dissect executed criminals,”²¹⁶ which was accepted by the government and general public due in large part to the prominence of mummification in the culture of Alexandrian Egypt—indeed, the actual physical process of dissection for educational and experimental purposes was substantially similar to the methods of mummification for burial.²¹⁷ In other words, because the methods used for mummification were already established as acceptable, the same or similar methods used for dissection were accepted by default.

Herophilus (335 _{B.C.E.}–280_{B.C.E.}), an Alexandrian physician²¹⁸ regarded as the “Father of Anatomy,”²¹⁹ was the “first physician to dissect human bodies”²²⁰ and thereby “gave anatomy a considerable factual basis for the first time.”²²¹ In the second century of the common era, Greek physician Galen of Pergamum (0129–0216)²²² “assembled and

arranged all the discoveries of the Greek anatomists, including with them his own concepts of physiology and his discoveries in experimental medicine.”²²³

Leonardo da Vinci (1452–1519) personally performed dissections in the early sixteenth century to produce “his beautiful and accurate anatomical drawings”²²⁴ which are invaluable to this day, not only for their artistic significance, but also for their influence on medical science. Da Vinci blazed the trail for Andreas Vesalius (1514–1564), a Renaissance physician who ““restore[d] the science of anatomy”²²⁵ and “revolutionized the study of biology and the practice of medicine”²²⁶ by writing and illustrating *De humani corporis fabrica libri septem* (The Seven Books on the Structure of the Human Body), “the first comprehensive and illustrated textbook of anatomy,”²²⁷ a product of his own dissections of the dead.²²⁸

During the Middle Ages, medicine in Europe was based entirely on such prior publications—no one donated his or her body to science both because dissection was prohibited by the Church²²⁹ and because of the deeply- and widely-held Judeo-Christian belief in a literal resurrection of the physical bodies of the dead.²³⁰ There are several references to a literal resurrection in the Old Testament. For example, it is declared that “[m]any of them that sleep in the dust of the earth shall awake”²³¹ Further, Zarephath’s widow’s son was resurrected from the dead,²³² the son of a Shunammite woman was resurrected from the dead by Elisha,²³³ and during one man’s burial, the dead body touched Elisha’s remains and “he revived, and stood up on his feet.”²³⁴ There are several references to a literal resurrection in the New Testament, as well. For example, Peter resurrected Tabitha,²³⁵ Paul resurrected Eutychus,²³⁶ and Jesus resurrected Jairus’s daughter,²³⁷ Lazarus,²³⁸ and a man at Nain (“And he that was dead sat up, and began to

“speak.”)²³⁹ Further, various saints were resurrected upon the crucifixion of Jesus: “And the graves were opened; and many bodies of the saints which slept arose, and came out of the graves after his resurrection”²⁴⁰

However, it is the resurrection of Jesus himself²⁴¹ that serves as the capstone of the Christian belief in a literal resurrection. Indeed, “[t]he resurrection of the body is an essential Christian doctrine, as the apostle Paul declares: ‘[I]f the dead are not raised, then Christ has not been raised. If Christ has not been raised, your faith is futile and you are still in your sins. Then those also who have fallen asleep in Christ have perished.’”²⁴²

Further, in the Catholic Church, the doctrine of a literal resurrection is included in “the three infallible professions of faith”: the Apostles’ Creed (“I believe in . . . the resurrection of the flesh”),²⁴³ the Nicene Creed (“we look for a resurrection of the dead and life in the age to come”),²⁴⁴ and the Athanasian Creed (“at [Jesus Christ’s] coming all men have to rise again with their bodies and will render an account of their own deeds . . . unless everyone believes this faithfully and firmly, he cannot be saved.”)²⁴⁵

Indeed, because of the pervasive Judeo-Christian belief in a literal resurrection, “dissection was thought of, literally, as a punishment worse than death”²⁴⁶ as it would ultimately prevent one’s eternal salvation. Eventually, authorities used this to their own advantage, and to the benefit of anatomists, by adding to the death penalty the potential for dissection: “With so many relatively minor offenses punishable by death, the legal bodies felt the need to tack on added horrors as deterrents against weightier crimes.”²⁴⁷ In 1565, Britain’s Queen Elizabeth I (1533–1603) “granted the medical guild, the College of Physicians and Surgeons, an annual supply of four executed felons for anatomy,”²⁴⁸ which was increased to six in 1663 by Charles II of England (1630–1685).²⁴⁹ Still, from

the end of the eighteenth century to 1823, the number of medical students in London alone grew from 200 to over 1,000 (with another 900 in Edinburgh).²⁵⁰ Accordingly, the demand for dead bodies for dissection greatly exceeded the supply:

As medical science began to advance, a constant supply of dead bodies was needed for experimental purposes. Countries such as France, Germany, Austria, Italy, and Holland were able to separate this scientific necessity from their Christian beliefs by passing laws to provide anatomy schools with sufficient cadavers, usually the unclaimed bodies of ex-residents of poor houses or hospitals. But legislators in Britain and the United States resisted this expedient, thus inadvertently creating a macabre new profession—that of the resurrectionist or “body snatcher.”²⁵¹

By the end of the eighteenth century, body snatching became a lucrative trade.²⁵²

In less than one hour, a body snatcher—or Resurrection Man—would dig up the top end of the grave, pile the dirt on a tarp, use a crowbar to pry off about one foot of the coffin’s lid, insert a rope into the opening, wrap the rope around the neck and/or under the arms of the body, pull out the corpse, and re-cover the disturbed ground with dirt.²⁵³ Thereafter, he would deliver the corpse to anatomists “compressed into boxes, packed in sawdust, . . . trussed up in sacks, roped up like hams”²⁵⁴ The relatively easy work, steady demand, and high pay attracted over two hundred body snatchers in London alone.²⁵⁵ They would be paid up to \$2,000.⁰⁰_{USD} per body.²⁵⁶ One group of six or seven body snatchers resurrected 312 bodies,²⁵⁷ that is a total of about \$89,000.⁰⁰_{USD} to \$104,000.⁰⁰_{USD}!

But not all bodies were snatched by professional Resurrection Men. Anatomy instructors themselves “encourage[ed] their enrollees to raid graveyards and provide bodies for the class,”²⁵⁸ and in Scotland, “tuition . . . could be paid in corpses rather than

cash.”²⁵⁹ Some anatomists even used their own newly-dead family members: after the death of a loved one but before taking the body to the churchyard for burial, they would use the body for dissection.^{260, 261, 262}

And while body snatching was unquestionably immoral, it was not illegal; in fact, at that time, “there were no laws on the books regarding the misappropriation of freshly dead humans”²⁶³ in either England or the United States. “Ironically, until recently the law decreed that ‘the only lawful possessor of the dead body is the earth’ – so that a graverobber could be prosecuted only for stealing grave goods, such as a shroud or jewelry, not for removing the body itself.”²⁶⁴ Thus, a prudent body snatcher could remove all tangible goods from a corpse, leave them in the empty coffin, walk away with only the corpse, and avoid any repercussions at all: “being caught with a corpse itself carried no penalty.”²⁶⁵

Though body snatching was not itself criminal, it was nonetheless a secretive trade. Still, the public eventually learned of the practice and responded in outrage and, in some cases, violence. One account of such a response occurred in Cambridge in 1830 and was described by Charles Darwin in his journal:

Two body snatchers had been arrested, and while being taken to prison had been torn from the constable by a crowd of the roughest men, who dragged them by their legs along the muddy and stony road. . . . They were covered from head to foot with mud and their faces were bleeding either from having been kicked or from the stones; they looked like corpses.²⁶⁶

In some instances—particularly in the United States—public outrage turned to riot: “medical schools were attacked and destroyed by outraged mobs in New York and Baltimore, and at Yale University and in Ohio.”²⁶⁷ Arguably the most influential event

was “the Doctor’s Riot.” In 1788, New York City “was abuzz with newspaper stories about medical students robbing graves to get bodies for dissection,”²⁶⁸ primarily from the city’s African-American cemetery, called the Negroes Burial Ground.²⁶⁹ In February of 1788, a group of African-American New Yorkers petitioned the city, complaining of the body snatching and requesting a reformation of the practice, but their petition was ignored, as “many in the city were willing to turn a blind eye . . . as long as those bodies were poor and black.”²⁷⁰ But later that month, a body was reported to have been stolen from Trinity Churchyard, rather than from Negroes Burial Ground. The snatching of a white woman’s body turned a poor-and-black problem into public outrage. On April 16, 1788, public outrage turned into a public riot. A first-hand account is described in a letter written by Colonel William Heth, previously an officer in the American Revolutionary War, to Edmund Randolph, the governor of Virginia at that time:²⁷¹

We have been in a state of great tumult for a day or two past— The causes of which, as well as I can digest them from various accounts, are as follows. The Young students of Physic, have for some time past, been loudly complained of, for their very frequent and wanton trespasses in the burial grounds of this City. The Corpse of a Young gentleman from the West Indias, was lately taken up—the grave left open, & the funeral clothing scatterd about. A very hand-some & much esteemd young lady, of good connections was also, recently carryd of [*sic*]. These—with various other acts of a similar kind—inflamed the minds of people exceedingly, and the young members of the faculty, as well as the Mansions of the dead, have been closely watchd. On Sunday last, as some people were strolling by the hospital, they discovered a something hanging up at one of the windows, which excited their curiosity, and making use of a stick to satisfy that curiosity, part of a mans [*sic*] arm or leg tumbled out upon them. . . . the mob raisd and the Hospital appartments were ransacked. In the Anatomy room, were found three fresh bodies—one, boiling in a kete, and two others cuting [*sic*]

up—with certain parts of the two sex's [*sic*] hanging up in a most brutal position. These circumstances, together with the wanton & apparent inhuman complexion of the room, exasperated the Mob beyond all bounds—to the total destruction of every anatomy in the hospital

On Monday morning, the mob assembled again, and increased thro' the day, to an alarming size. Vengeance was denounced against the faculty in general, but more particularly against certain individuals. Not a man of the Profession thought himself safe.²⁷²

While the public was certainly outraged, most turned to prevention rather than punishment. Many buried their loved ones in coffins with double or even triple rows of nails,²⁷³ others in coffins of three layers of wood and lead.²⁷⁴ Metal coffins were developed and available for purchase in 1781,²⁷⁵ and in 1818 the iron Patent Coffin “prevented the levering of the lid from the outside by means of a series of concealed spring catches within the inner lid.”²⁷⁶ “Jankers,” metal or stone slabs,²⁷⁷ and “mortsafes,” iron cages,²⁷⁸ protected the coffins below or within them (respectively) from tampering. The wealthy further protected their dead by burying them in vaults, mausoleums, and private chapels,²⁷⁹ and even employing servants to guard graves “until putrefaction was sure to have started, thus rendering the body useless to the anatomists.”²⁸⁰ This practice was similar to Scotland’s “dead houses,” small impenetrable fortresses within which a corpse was locked until rendered useless to anatomists.²⁸¹ The poor, however, were extremely vulnerable to resurrectionists because the aforementioned protections were beyond their financial means,²⁸² instead, they constructed watch-houses and “strategically placed lamps”²⁸³ in cemeteries and churchyards,²⁸⁴ and some even outfitted graves with booby-traps and homemade land mines.²⁸⁵

In response to the public outrage and revulsion to body snatching, Parliament passed the “Dead Body Bill” in 1828, which officially permitted “the use of corpses for scientific purposes when the death occurred in a poorhouse, hospital, or charitable institution maintained at public expense, and the body was not claimed within a specified time by next of kin.”²⁸⁶ Still, the public responded with concern that the bill would cause people—particularly the poor—to die in the streets rather than seek care. Then, in 1832, Parliament passed the Anatomy Act, whereby “unclaimed bodies from workhouses could be sent for dissection after forty-eight hours.”²⁸⁷ Although the act technically allowed a person to request in writing that his body not be used for dissection, the majority of people—particularly the poor—had no knowledge thereof²⁸⁸ and, accordingly, “between 1832 and 1932, out of fifty-seven thousand bodies dissected in London anatomy schools, only half a percent came from anywhere other than poor houses.”²⁸⁹ While the Anatomy Act clearly had a disparate impact on the poor, it brought an end to body snatching in the United Kingdom.²⁹⁰

Nonetheless, the scars of these historical uses and controversies remain on the American way of death. While we may not fear the resurrection or resurrectionists with the same fervor, modern uses of the dead in research still raise serious medical, legal, and ethical concerns.

PRACTICING PROCEDURES ON THE DEAD²⁹¹

Providing safe and successful medical care requires medical professionals who are both educated *and* experienced—lessons learned in lectures, diagrams explained in chapters, and even procedures observed in residency provide only the *education* required. In medicine, practice makes perfect—medical professionals “do not spring fully trained into the medical world.”²⁹² Accordingly, in addition to lectures, textbooks, and observation, hands-on experience and practice of various skills and techniques is necessary for safe and successful procedures. Without the requisite experience, it is the patient who will suffer from sub-par treatment at best, and fatal mistakes at worst.

But how do these physicians-in-training practice these life-saving skills and techniques? While practicing on animals served those purposes in the past, and digital models are certainly helpful in the present, these models do not accurately represent the circumstances present in human patients. Practicing on living patients poses too high a risk, borne only by the most vulnerable party, the ill or injured patient. Indeed, “live surgery is the worst place for a surgeon to be practicing a new skill.”²⁹³ Instead, medical professionals primarily use cadavers in their education and training.

Forty human heads in roasting pans²⁹⁴—that is what faced one group of surgeons at the University of California, San Francisco, medical school’s anatomy lab. Before arriving at the facial anatomy seminar, the heads had belonged to people who had died a few days previously.²⁹⁵ Shortly after death, the heads were severed just below the chin²⁹⁶ so that the rest of the cadaver—the arms, legs, and organs—could be used in other research or education. “In the world of donated cadavers, nothing is wasted.”²⁹⁷

But even before a cadaver is delivered to an anatomy lab, “it may pass an afternoon getting tracheal intubations and catheterizations. . . . Given the urgency and difficulty of certain ER procedures, it makes good sense to practice them first on the dead.”²⁹⁸ Indeed, due to the shortage of donated cadavers, medical professionals often “use the bodies of patients immediately after the pronouncement of death”²⁹⁹—rather than practicing on donated cadavers, they practice procedures on the “newly dead,” often without consent (either pre-mortem from the patient or post-mortem from the family thereof). One study found that forty-seven percent of emergency medicine programs used newly-dead patients for training purposes; another found that twenty-seven percent of emergency medicine teachers had done so “mostly without consent.”³⁰⁰ Indeed, medical professionals’ using recently-deceased human bodies for educational purposes—the “practice of practice”—is not only accepted, but is even considered to be necessary.

Generally, physicians-in-training practice *non-invasive* procedures, or “techniques which normally leave no mark on the body.”³⁰¹ For example, one of the most commonly practiced procedures is endotracheal intubation, a procedure by which a laryngoscope is placed into the mouth and a plastic tube is passed into the windpipe,³⁰² leaving no marks and posing a risk of mere chipped teeth. This procedure is commonly practiced on the newly-dead because it is one of the most commonly used in emergency medicine. Indeed, it is “one of the key lifesaving techniques in medicine,”³⁰³ and is required for successful resuscitation from cardiac or respiratory arrest, putting patients on ventilators, and for most routine surgeries.³⁰⁴ If done quickly, efficiently, and correctly, it can be life-saving; if done incorrectly, it can be fatal. Only through practice can medical professionals gain the expertise to perform the procedure correctly.

Practicing *minimally-invasive* procedures—those which “leave only isolated needle-marks”³⁰⁵—is also common.³⁰⁶ For example, placing a central venous line causes “at most, an additional needle puncture in the neck.”³⁰⁷ Like intubation, this is a common procedure which is necessary to deliver fluids and medication to patients and to monitor vital signs.³⁰⁸ It is a potentially life-saving procedure, but poses significant risks if done incorrectly: “it may collapse a lung, puncture an artery, introduce air into the circulation, cut the vein, or cause other damage.”³⁰⁹

Practicing non- and minimally-invasive procedures on the dead causes a miniscule amount of physical damage to the body, if any. Still, opponents of the practice argue that it constitutes disrespect of the dead. Nonetheless, proponents respond that practicing non-invasive and minimally-invasive procedures “actually disfigures a body far less than many other postmortem procedures”³¹⁰ such as embalming.³¹¹

Indeed, alternative educational techniques such as the use of embalmed cadavers or digital, synthetic, or animal models are insufficient for experiential training purposes. For example, the central venous access procedure “cannot be adequately practiced on anatomical (embalmed) cadavers that have been donated for scientific study, since the sign of successful needle placement is the blood return through the catheter. Blood in embalmed bodies is the consistency of clay.”³¹² Only the blood of a newly dead patient provides the consistency to indicate correct needle placement.

This practice-of-practice protects living patients insofar as it can “minimize potential risks to living patients while advancing the important common social goods of competent physicians.”³¹³ “Indeed, “[h]e must mangle the living if he has not operated on the dead.”³¹⁴ “Less-experienced physicians performing invasive procedures are more

likely to fail or harm patients,”³¹⁵ and, thus, “the patient who undergoes a procedure performed by a novice is at an increased risk of discomfort or other complications.”³¹⁶ “Medical students have to learn lifesaving resuscitation skills somewhere. . . . If they don't learn on cadavers that cannot be harmed, they will learn on the living, who can.”³¹⁷ Practicing medical procedures on the newly dead provides those training opportunities, and the result is that physicians and other health care workers have better education, more advanced skills, and more experience. This, of course, translates to better health care for the living—less pain with better results and, hopefully, fewer dead bodies in all. While physicians’ practicing medical procedures on the dead is considered to be a crucial component of their medical training, it is not the only way in which the dead can educate the living.

EXHIBITIONS

During the seventeenth through the nineteenth centuries, embalming was developed to “preserve the dead for anatomical dissection and study rather than for religious or other reasons.”³¹⁸ Frederick Ruysch (1665-1717)³¹⁹ was one of the first to experiment with arterial (or vascular) embalming, which is still in use today.³²⁰ While modern arterial embalming involves pumping a formaldehyde-based fluid into the circulatory system,³²¹ Ruysch’s method involved “a concoction of chemical preservatives, including alcohol.”³²² What was more unique than his embalming fluid, however, is that he then “arrange[d] his embalmed specimens in artistic poses, often with props, which a paying public queued to view.”³²³ Though Ruysch was the pioneer of arterial embalming, it is Dr. William Hunter (1718-1783)³²⁴ who is officially credited

with discovering arterial preservation.³²⁵ Hunter's process was similar to Ruysch's, as it involved "draining the blood and replacing it with mercury, essential oils, alcohol, cinnabar, camphor, saltpeter and pitch or rosin."³²⁶ Hunter embalmed a friend's wife, the body of whom was displayed to advertise Hunter's business.³²⁷

Honoré Fragonard (1732-1799)³²⁸ was a surgeon and Principal and Professor of Anatomy at the first veterinary college in the world. There, in 1765,³²⁹ he perfected his "unusual embalming techniques".³³⁰

After removing the skin, he fixed the corpse in the pose he required. The body would then be dissected, leaving the muscles carefully in situ. Often he would inject the nerves and vessels with coloured wax, and he developed the technique of adding aromatic spices to alcohol and injecting it into the arteries of his subjects in order to prevent putrefaction. To finish the process off, layers of varnish were applied as a seal. The result was a series of anatomical models whose veins and muscles could be clearly seen by eager medical students.³³¹

Fragonard's work "offended both his colleagues and the general public alike, and it was not therefore given the scientific merit it deserved."³³² This criticism persists even to this day, but is most often directed toward Gunther von Hagens (born Gunther Liebchen)³³³ (1945-X), who "invented [p]lastination at the University of Heidelberg in 1977, developed the use of plastinated specimens for medical education and preservation, and established the International Society for Plastination."³³⁴

Plastination is a method in which the fluid contained in bodily tissues is replaced by reactive polymers [such as silicone rubber, epoxy resin, or polyester resin]³³⁵ using a special vacuum process. Plastination completely stops the decay and dehydration of human tissue. This patented method makes it possible to view the inside of the human body in a revolutionary way.³³⁶

More than four hundred universities and institutions throughout forty countries use plastination to preserve anatomical specimens for research, education, and training.^{337, 338} Still, von Hagens is best known for creating the BODY WORLDS (or Körperwelten³³⁹) exhibit,³⁴⁰ which features hundreds of plastinated specimens in various positions: for example, “The Soccer Player” is a “skinless athlete frozen in the moment of putting the ball into the back of the net”³⁴¹ Each body reveals the intricacies of the complex ways in which the human body lives and even dies.³⁴² “*BODY WORLDS & The Story of the Heart*, reveals . . . how the heart nourishes, regulates, and maintains life,”³⁴³ *BODY WORLDS & The Cycle of Life* reveals “the human life cycle and aging—from prenatal development and infancy, to childhood and adolescence, to youth, adulthood, and old age,”³⁴⁴ *BODY WORLDS Vital* shows visitors “the basics for human health and wellness” and illustrates “how best to fight life-threatening diseases—such as cancer, diabetes, and heart ailments—through healthy choices and lifestyle changes,”³⁴⁵ and *BODY WORLDS: Pulse* “presents the body in health and distress, its vulnerabilities and potential, and many of the challenges the human body faces as it navigates the 21st Century”³⁴⁶ with an emphasis on the donors, “who have committed to educating future generations.”³⁴⁷

Since its inception in 1995³⁴⁸ BODY WORLDS has attracted more than 38 million visitors throughout the world³⁴⁹ and has spawned “several anatomical exhibits, similarly titled and derivative of *Gunther von Hagens’ BODY WORLDS*”³⁵⁰ such as “Bodies...The Exhibition,” “The Amazing Human Body,” “Body Exploration,” “Bodies Revealed,” “Mysteries of the Human Body,” “Our Body, The Universe Within,” “Our Body,” “Corps Ouvert,”³⁵¹ and many others.

But these exhibits have more in common than their names: each is vehemently criticized for the general display of human bodies.³⁵² Many criticisms revolve around the donors' consent (or lack thereof) to their bodies' being used in plastination and exhibition. For example, Premier Exhibitions, the company responsible for "Bodies: The Exhibition" was alleged to have plastinated and displayed bodies—some of which were suspected to be executed Chinese prisoners—without consent.³⁵³ Von Hagens faced similar accusations when *Der Spiegel*, a German magazine, reported that von Hagens was "buying and then plastinating the cadavers of executed Russian and Chinese prisoners."³⁵⁴ According to von Hagens, "all the bodies had either been bequeathed by relatives or were unclaimed corpses provided by the local authorities in China and Russia."³⁵⁵

But, according to von Hagens,

the plastinated specimens on display in . . . *BODY WORLDS* exhibitions—excluding a small number of specimens acquired from anatomical collections and anatomy programs—stem from a unique Body Donation Program established in Heidelberg, Germany in 1982, later managed by [von Hagens's] Institute for Plastination established in 1993.³⁵⁶

As of July 2012, von Hagens's Institute for Plastination (the source of the bodies displayed in *BODY WORLDS*) has more than 13,300 donors (of which 12,172 are living and 1,138 are deceased),³⁵⁷ including over 12,000 Europeans and 1,000 North Americans.³⁵⁸ According to an extensive review by Los Angeles's California Science Center's Ethics Advisory Committee, which included "a diverse panel of ethicists and community leaders,"³⁵⁹ all specimens in each *BODY WORLDS* exhibit "were properly acquired through body donations."³⁶⁰ However, Premier Exhibitions failed to establish

donor consent.³⁶¹

Beyond the issue of donor consent, however, is the opposition's arguments that "it is undignified to display human bodies in this manner or to display bodies for profit,"³⁶² and, further, that "undignified treatment of the dead can harm the living public as a whole."³⁶³ The Catholic Church has condemned plastination (specifically, the work of von Hagens) as a "serious violation of the dignity of the dead and their reduction to the status of objects."³⁶⁴ In support of this dignity argument, critics cite laws requiring disposition of remains in a dignified manner and laws prohibiting the undignified treatment of remains.³⁶⁵ In addition to harm to the general public, opponents express concern for the possibility of harm "to specific individuals by virtue of their relationship with the deceased."³⁶⁶ In other words, they argue that exhibitions of the dead harm the surviving loved ones of the deceased:^{367, 368}

Friends and family have a well-recognized interest in the treatment of loved one's mortal remains and this interest is recognized in laws that grant possessory rights in a corpse to next of kin and allow next of kin to make decisions about the treatment of the body – either regardless of, or in the absence of, the expressed wishes of the deceased.³⁶⁹

But,

[w]hat makes the exhibit so compelling – to have a meaningful and comprehensive view inside the real human body – is also what makes this exhibit most controversial. Without those very features, the exhibit would not be such a powerful educational experience.³⁷⁰

These exhibits demonstrate more than just the complexities of the human body—they demonstrate the complexities of the issues surrounding the use of the dead in research, from rights of the dead to effects on the living, and from informed consent to

medical education.

PRODUCT RESEARCH AND DEVELOPMENT

“Over the past sixty years, the dead have helped the living work out human tolerance limits for skull slammings and chest skewerings, knee crammings and gut mashings: all the ugly, violent things that happen to a human being in a car crash.”³⁷¹ Indeed, impact research first began in Detroit at Wayne State University in the 1930’s when a cadaver was allegedly dropped down an elevator shaft in an attempt to test the impact threshold of the human skull.³⁷² Since the 1960s, bioengineers and automobile manufacturers have been using cadavers in crash simulators³⁷³ for the purpose of determining the threshold amount of force that a human body (or a particular part thereof) can withstand before becoming seriously injured.³⁷⁴ With that knowledge, manufacturers then design cars to limit the amount of force to the driver and passengers in the event of an accident.³⁷⁵ For example, in the early 1960’s, General Motors used cadavers in researching and designing a collapsible steering wheel shaft, which in and of itself decreased the risk of death in a head-on collision by fifty percent.³⁷⁶ Many other standard designs and safety features, such as “lap-shoulder belts, air bags, dashboard padding, and recessed dashboard knobs”³⁷⁷ were developed from cadaver research.³⁷⁸

For every cadaver that rode the crash sleds to test three-point seat belts, 61 lives per year have been saved. For every cadaver that took an air bag in the face, 147 people per year survive otherwise fatal head-ons. For every corpse whose head has hammered a windshield, 68 lives per year are saved.³⁷⁹

According to one study, vehicle safety improvements developed from cadaver research since 1987 have saved an estimated 8,500 lives per year.³⁸⁰ In fact, “[b]ecause of changes that have come about as a result of cadaver studies, it’s now possible to survive a head-on crash into a wall at 60 mph.”³⁸¹

Further, researchers use cadavers in researching and developing “crash test dummies” to be used in place of cadavers in the future testing. For example, Wayne State University’s impact lab recently used cadavers in an investigation of the injury threshold of the human shoulder and the forces needed in a side-impact collision to generate it.^{382, 383} Each cadaver is outfitted with accelerometers—devices that measure the body’s acceleration on impact³⁸⁴—on scapula, clavicle, vertebrae, sternum, and head,³⁸⁵ as well as a leotard, matching tights,³⁸⁶ mittens,³⁸⁷ and a hood over its head.³⁸⁸ Each is precisely placed before a linear impactor,³⁸⁹ a large piston fired by compressed air,³⁹⁰ and struck at one of various forces. Thereafter, an autopsy is performed and all physical damage to the cadaver is photographed and catalogued.³⁹¹ With this information, researchers aim to develop a side-impact dummy that better represents a living human body.³⁹²

But, as automobile accidents are not the only threat to the living’s safety, cars are not the only products to which cadavers contribute. The militaries of nations throughout the world have used cadavers in their research, particularly ballistics research. The French army has allegedly been “firing into dead bodies for the purpose of teaching the effects of gunshots in war”³⁹³ since about 1800.³⁹⁴ Germany conducted similar studies, placing naked cadavers “at distances approximating those of an actual battlefield.”³⁹⁵ Switzerland “sanctioned a series of military wound ballistics studies on cadavers in the

late 1800s”³⁹⁶ and more recently investigated bullet wound patterns by firing Swiss Vetterli rifles into human skulls and whole human cadavers (among other targets).³⁹⁷

The United States similarly began its cadaveric military research in 1893 with an “unprecedented military undertaking:”³⁹⁸ in order to study the effects on the human body’s “bones and innards”³⁹⁹ of the new, experimental 30-caliber firearm as compared to the standard-issue .45-caliber firearm,⁴⁰⁰ the U.S. Army Ordnance Department conducted an experiment⁴⁰¹ in which cadavers were “suspended”⁴⁰² from a tackle in the ceiling of the firing range, shot at in a dozen places and with a dozen different charges (to simulate different distances), and autopsied”⁴⁰³ at Frankford Arsenal, Pennsylvania.⁴⁰⁴

Then, in 1904, in response to the Colt .38’s reported failure in the Philippines during the Spanish-American War,⁴⁰⁵ the U.S. War Department⁴⁰⁶ conducted a study to investigate “various guns and bullets and their relative efficacy at putting a rapid halt to enemies.” Upon firing at cadavers weighted and suspended from the ceiling, researchers studied the “‘shock,’ as estimated by ‘the disturbance which appeared’”⁴⁰⁷ to the cadavers for the purpose of assessing—and, hopefully, improving—the stopping power of various firearms.⁴⁰⁸ “What it actually did was extrapolate questionable data from questionable tests.”⁴⁰⁹

The U.S. military’s research purposes and processes have improved over the last century, and the dead are helping researchers develop “better” bullets. But the primary goal of much of the current and past cadaveric ballistics research has been to improve incapacitation or stopping power:⁴¹⁰ with the goal of a “more humanitarian form of gun battle,”⁴¹¹ researchers are developing ways “to stop a man in his tracks, preferably without maiming or killing him, but definitely before he maimed or killed you first.”⁴¹²

Modern-day ballistics researchers are also “developing bullets that would resist corrosion from the acid breakdown products inside a dead body and help forensics types solve crimes long after they happen.”⁴¹³

But bullets are not the only subject of military product research. The Armed Forces Institute of Pathology’s Ballistic Missile Trauma Research Lab conducts publicly-funded cadaveric ballistics research to test products—specifically, body armor—before outfitting service men and women.^{414, 415} Cadavers are outfitted with “accelerometers and load cells⁴¹⁶ . . . on the sternum, to record the impact forces and give researchers a detailed rendering of what was happening to the chest inside the armor.”⁴¹⁷ Similarly, the Lower Extremity Assessment Program was established in 1999⁴¹⁸ to test footwear used in the armed forces. At that time, none of the products marketed to offer more protection than the standard-issue combat boot had been subjected to cadaver testing.⁴¹⁹ Further, many people throughout the armed forces believed that sandals were the safest footwear (particularly with regard to land mines) because “they minimized injuries caused by fragments of the footwear itself being driven into the foot like shrapnel, compounding the damage and the risk of infection.”⁴²⁰ This theory, which had been continuously circulating throughout the armed forces since the Vietnam War,⁴²¹ remained untested.⁴²²

The “Department of Defense laboratories and facilities, collaborating with leading academic institutions,”⁴²³ conducted a study to analyze the performances of various “types of footwear either commonly used by or being newly marketed for land mine clearance teams.”⁴²⁴ Twenty cadavers from a Southwestern Medical Center’s Willed Body Program,⁴²⁵ each outfitted with one of six types of footwear, regulation Battle Dress Uniform,^{426, 427} and “strain gauges and load cells in its heel and ankle,” were

strapped into a harness suspended from the ceiling⁴²⁸ and “posed in standard walking position”⁴²⁹ on the floor of a blast/biohazard blast shelter,⁴³⁰ just above a “18" x 24" x 24" deep steel box”⁴³¹ where various types of mines were detonated.⁴³²

This study was at the center of the Tulane University “cadaver scandal” in which

[s]even cadavers donated to Tulane University's medical school were sold to the Army and blown up in land mine experiments Tulane receives up to 150 cadavers a year from donors but needs only between 40 and 45 for classes The university paid National Anatomical Service, a New York-based company that distributes bodies nationwide, less than \$1,000 a body to deliver surplus cadavers, thinking they were going to medical schools in need of corpses. The anatomical services company sold seven cadavers to the Army for between \$25,000 and \$30,000 The bodies were blown up in tests on protective footwear against land mines at Fort Sam Houston in San Antonio.⁴³³

This scandal sparked public outrage, in part because the consent (whether given pre-mortem by the donors themselves or post-mortem by the families thereof) to cadaver donation for *research* likely was not informed of the potential for explosion. Indeed, much of the military’s product testing violates the “most firmly entrenched taboo of the cadaveric research world”:⁴³⁴ explosion. This taboo is so strong, in fact, that “live, anesthetized animals have generally been considered preferable, as target of explosions, to dead human beings.”⁴³⁵

But “[i]n order to be able to protect against a threat, whether it is automotive or a bomb’ . . . ‘you have to put the human to its limits. You’ve got to get destructive.’”⁴³⁶

ALTERNATIVES

Indeed, “[i]t is an unfortunate given of human trauma research that the things most likely to accidentally maim or kill people—things we most need to study and understand—are also the things most likely to mutilate research cadavers . . .”⁴³⁷ But “the difference between a blast test and an anatomy class dissection is essentially the time span. One lasts a fraction of a second; the other lasts a year. ‘In the end’ . . . ‘they look pretty much the same.’”⁴³⁸ So why is it that certain research uses of cadavers are more offensive than others?

Perhaps it is the purpose of the use that so greatly affects our perception: for example, using the dead because they are an easier alternative (either to living subjects or other models) is—or, at least, feels—quite different from using the dead because they are *necessary* for the research design itself. An example of the latter would be research at the University of Tennessee’s Anthropology Research Facility, the first “body farm,” which includes a systematic study of human decomposition⁴³⁹ in an “open air crime lab”:⁴⁴⁰

The bodies are placed in a variety of areas to mimic crime scenes. Some are buried in shallow graves, inside vehicles or even in a noose, and then left to rot while being monitored for decay. The researchers then let nature take its course, gathering vital clues from insects, the decaying bones and odours.⁴⁴¹

Such research, which is crucial to forensic anthropology, simply could not be conducted using any alternative because dead bodies—specifically, victims of crimes—are the very subject of the research question.

But the subject of the questions in most cadaveric research is not *dead* people; rather, the purpose of most cadaveric research—particularly practicing medical

procedures, educating scholars and the public, and researching and developing products—is to benefit *living* people. Still, many alternatives to cadavers have proved insufficient.

Crash test dummies, though having become the archetypal product-testing alternative, have proven insufficient: “A dummy can tell you how much force a crash is unleashing on various dummy body parts, but without knowing how much of a blow a real body part can take, the information is useless.”⁴⁴² Some researchers and their students have experimented on themselves for years: one “has ridden the crash sled some four hundred times, and been slammed in the chest by a twenty-two-pound metal pendulum.”⁴⁴³ Aside from the obvious dangers to the researchers, self-research is insufficient for a reason similar to that of crash-test dummies: “[i]mpact data that doesn’t exceed the injury threshold is of minimal use.”⁴⁴⁴ In other words, self-research may establish that X impact does not cause fatal injury Y, but the crucial question is “how much impact *does* cause fatal injury Y?” The answer to that question would require actually causing fatal injury Y, which would turn self-research into suicide. It should be noted that the military and law enforcement have employed a different, even more questionable type of “self”-research. During the Korean War, a new body armor vest “was tested simply by giving it to six thousand soldiers and seeing how they fared compared to soldiers wearing standard vests.”⁴⁴⁵ Central American police departments “tested their vests by having officers put them on and then shooting at them.”⁴⁴⁶ Using cadavers for these tests would prevent endangering living people while aiding in the production of safer products to protect even more of the living public.

Animals are often suggested as potential alternatives for cadavers, though such

suggestions are vehemently opposed by animal rights activists.⁴⁴⁷ It is true that various animal organs resemble those of humans: the hearts of pigs,⁴⁴⁸ the lungs of goats,⁴⁴⁹ the knees of brown bears,⁴⁵⁰ and even the hips of emu⁴⁵¹ are very similar to those of humans.⁴⁵² Still, these structures only *resemble* the human body and, similar to crash-test dummies, information gathered from animal research is not entirely applicable to the human body. For example, one author notes that ever since a 1904 U.S. Army study comparing the effects on cattle of large caliber bullets as compared to smaller caliber bullets, “the U.S. Army has gone confidently into battle, knowing that when cows attack, their men will be ready.”⁴⁵³ One researcher who used deer in a footwear study exclaimed that the data collected was of minimal value because “deer lack toes and heels and people lack hooves.”⁴⁵⁴ While these observations were made partially in jest, they do illustrate that the subject of these research questions is living *human* bodies, not animal bodies. Again, using cadavers in these types of studies would produce more accurate data than using animals and, accordingly, would aid in producing more effective products for the benefit of the living.

Recent research is developing more “high-tech” alternatives, as well. Ballistic gelatin is a substance “formulated to match the average density of human tissue.”⁴⁵⁵ It offers various advantages over cadavers, including reproducibility—unlike gelatin, cadavers “vary . . . according to the age, gender, and physical condition of their owners . . .”⁴⁵⁶—and unlike cadavers (or living human tissue), gelatin “affords a stop-action view of the temporary stretch cavity The cavity remains, allowing ballistics types to judge, and preserve a record of, a bullet’s performance.”⁴⁵⁷ While gelatin alone is often used in ballistic studies, researchers have also used it in developing The Frangible

Surrogate Leg (FSL), or “surrogate ‘dummy’ leg.” Along with ballistic gelatin representing human muscle, mineralized plastic is used to simulate bone. But, cost considerations aside, the bone fracture patterns in the surrogate dummy leg do not accurately represent those of human cadavers⁴⁵⁸ (and, thus, living humans). Again, these advantages also pose one important disadvantage: like crash-test dummies and animals, ballistic gelatin and mineralized plastic only approximate—but do not replicate—human tissue.

It seems that the only way to accurately represent human tissue is to actually use human tissue. But cadavers are not the only source of human tissue: researchers in the U.K. have tested footwear using feet and legs amputated from still-living bodies. While the issue of accurately representing human tissue is somewhat resolved, a different issue arises: “these limbs have typically had gangrene or diabetic complications that render them poor mimics of healthy limbs.”⁴⁵⁹ In other words, the very fact that these limbs required amputation in the first place means that they are not representative of normal, healthy human tissue. While some cadaver limbs may pose a similar effects-of-disease problem, many would not.

Similar to amputated limbs are prosections (“embalmed cadaver segments”⁴⁶⁰), or parts of a cadaver (rather than the entirety thereof). Many times, researchers only need a single part: for example, “[o]rthopedic surgeons developing new techniques or new replacement joints” use limbs only.⁴⁶¹ While prosections are easier to store and manipulate/move/handle than whole cadavers,⁴⁶² “it’s often desirable, from the standpoint of biomechanical fidelity, to use [a whole cadaver]. A shoulder mounted on a stand and hit with an impactor doesn’t behave in the same manner, or incur the same

injuries, as a shoulder mounted on a torso.”⁴⁶³ Nonetheless, why is the use of prosections more acceptable than the use of whole cadavers?

If you want people to feel comfortable about dead bodies, cut them into pieces. A cow carcass is upsetting; a brisket is dinner. A human leg has no face, no eyes, no hands that once held babies or stroked a lover’s cheek. It’s difficult to associate it with the living person from which it came. The anonymity of body parts facilitates the necessary dissociations of cadaveric research: This is not a person. This is just tissue.⁴⁶⁴

Of course, “virtually any use of a cadaver is potentially upsetting,”⁴⁶⁵ but *why* are some uses more upsetting than others? Perhaps the answer lies in the rights and interests in—and of—the dead.

III THE LAW OF THE DEAD

The status, treatment, and disposition of human remains in the United States is governed by the law of the dead:⁴⁶⁶ a collection of statutes, regulations, and judicial decisions (the common law) at both the state and federal levels,⁴⁶⁷ as well as local ordinances.⁴⁶⁸ Questions regarding the dead arise in every area of law and have done so since the birth of our legal system.

But why is the law of the dead different from the law of the living, and what makes it so problematic with respect to research? In order to understand how the current law of the dead is so problematic, one must understand *why* it is so. The dead and their remains are as taboo to both the national and state legislatures as they are to our death-denying society; accordingly, the American law of the dead is the piecemeal product of statutes, regulations, and judicial decisions which lack any consensus on even the most basic questions regarding the dead.⁴⁶⁹ This section will provide a brief overview of the historical development of the American legal system with an emphasis on the issue of jurisdiction of the dead, the undercurrent of which is the cornerstone issue in the law of the dead: “the legal rights *in what?*” Is a dead body property? If not, what is it? Following this discussion is a brief analysis of various select laws of the dead.

This section is not meant to provide an exhaustive list of every law or issue regarding the dead; rather, its purpose is to illustrate the types of questions and concerns that plague the law of the dead.

Most importantly, the law of the dead has a direct bearing on the use of the dead in research—leaving these legal issues unresolved exposes the dead, the living, and the

research enterprise to the potential for intentional and unintentional research uses that violate law and ethics.

JURISDICTION OF THE DEAD

The cultures, laws, and practices in seventeenth- and eighteenth-century Europe were “most relevant in shaping the American common law of the dead.”⁴⁷⁰ At that time in Europe, two distinct “spheres of authority” reigned: civil and ecclesiastical.⁴⁷¹

Although scholars have not yet definitively determined the date of this division of the Church and civil government,⁴⁷² William the Conqueror (1028-1087) separated the jurisdictions and gave control over churchyards—and burials—to the Church.⁴⁷³

Accordingly, the remains of the dead fell under the sole power and jurisdiction of the Church.⁴⁷⁴

Indeed, by virtue of the Church’s providing funeral rites and consecrated burial, the decedent’s soul or spiritual essence left the earth, and the physical remains were secured by the Church for safekeeping until the literal resurrection.⁴⁷⁵ The Church’s jurisdiction over the dead stemmed from beliefs concerning the importance of the deceased’s physical remains in regard to eternal salvation and literal resurrection.⁴⁷⁶ This theological justification was further supported by a practical justification:⁴⁷⁷

the churches and churchyards were owned, in fee simple, by the Church. Under English law, every person had the right to be buried in his parish churchyard. But the burial of a person in the churchyard did not convey any property interest in the grave. The fee remained with the Church. The Church took “possession” of the body after burial and protected it so long as it remained in consecrated ground. Seventeenth century Anglican doctrine refers to the Church holding human remains “in trust” until resurrection. It was

reasonable, therefore, that . . . the Church should have ecclesiastical jurisdiction over matters concerning the remains after they were buried, again, in the ground that it owned.⁴⁷⁸

Indeed, “[b]ecause ‘the Church took the body to itself,’ the common law courts had no legal control over it and the person having charge of the body could not be considered the owner of it.”⁴⁷⁹ In other words, the remains of the dead were *nullius in bonis* (“in the legal ownership of nobody”⁴⁸⁰ or “goods of no one.”)⁴⁸¹ From this concept, the “no property rule” emerged⁴⁸² and persisted throughout seventeenth- through nineteenth-century English common law.⁴⁸³

Although the cultures, laws, and practices in seventeenth- and eighteenth-century Europe greatly influenced the American law of the dead,⁴⁸⁴ they were not dispositive. Unlike seventeenth- and eighteenth-century Europe, Colonial America lacked an established church,⁴⁸⁵ and thus did not recognize the English tradition of separating jurisdiction over corpses, particularly with respect to granting exclusive jurisdiction to the ecclesiastical sector.⁴⁸⁶ Accordingly, there has been a gap in the foundation of the American law of the dead from the time of its inception: under what jurisdiction are the dead?

This issue has persisted from colonial America into the modern law of the dead. Despite the general consensus that the civil government has an interest in the regulation of disposition of the dead insofar as it must ensure common decency and public health and safety,⁴⁸⁷ American common law has generally denied the civil government jurisdiction over the dead, citing lack of precedent.⁴⁸⁸ Indeed, “one of the baseline norms embraced in American law is that civil government should not take responsibility for the

disposition of human remains.”⁴⁸⁹ While some states have enacted legislation requiring local authorities to fund the disposition of the remains of indigent persons,⁴⁹⁰ the local, state, and federal governments generally lack jurisdiction over the dead. Instead, American common law and modern statutory law grant “jurisdiction” to the decedent’s next of kin.⁴⁹¹ But *in what* does a decedent’s next of kin have such “jurisdiction,” and what does it entail?

THE LEGAL STATUS OF REMAINS

As set forth above, the American law of the dead is the product of judicial decisions which lack any consensus on even the most basic questions regarding the dead.⁴⁹² One such basic question which has remained unanswered is the legal status of the human body. *What is it?*

A corpse in some respects is the strangest thing on earth. A man who but yesterday breathed, and thought, and walked among us has passed away. Something has gone. The body is left still and cold, and is all that is visible to mortal eye of the man we knew. Around it cling love and memory. Beyond it may reach hope. It must be laid away. And the law – that rule of action which touches all human things – must also touch this thing, of death. It is not surprising that the law relating to this mystery of what death leaves behind cannot be precisely brought within the letter of all the rules regarding corn, lumber, and pig iron.⁴⁹³

Indeed, the questions of property rights in a dead body are some of the most intriguing in all of law.⁴⁹⁴ But the first step to answering these questions must be to define the term “property.”⁴⁹⁵

“The concept of ‘property’ in the law is extremely broad and abstract,” and “[t]he definitions of property are not restrictive and exclusive.” The legal definition of property

does not refer to a specific material object but to the rightful dominion or indefinite right of use, control, and disposition, which can be exercised over particular things or objects. Thus, property is often characterized as a “‘bundle of rights’ that may be exercised with respect to an object,” including the right to possess, use, exclude others from, and dispose of the property by sale or gift.⁴⁹⁶

What is the legal status of human remains? Historically, as set forth above, English common law adhered to a “no property rule,” which emerged from various legal writings and cases from the seventeenth- through nineteenth-centuries.⁴⁹⁷ This rule—that dead bodies were not property—is largely attributed to Lord Edward Coke, who declared in 1628⁴⁹⁸ that “the burial of the cadaver, that is *caro data vermibus* (flesh given to worms) is *nullius in bonis*,”⁴⁹⁹ the “property of no one.”⁵⁰⁰ According to Lord Coke, a cadaver belonged to the Church after its burial on Church property.⁵⁰¹ Such declarations by Lord Coke and concurring opinions from Sir William Blackstone, who opined that “though the heir has a property in the monuments and escutcheons of his ancestors, yet he has none in their bodies and ashes,”⁵⁰² had such an influence over English law that they “prevented the body from being treated by the law as a type of property until the mid-Nineteenth Century.”⁵⁰³

Indeed, the no-property status of remains persisted throughout English common law and, accordingly, was incorporated into American common law. Thus, the bodies of the dead in America “were not property and, thus, personal ownership of them was not legally protected.”^{504, 505} Instead, “[p]ublic health laws required that a decedent’s family properly dispose of his or her body, but did not provide any personal remedy if this obligation was interfered with.”⁵⁰⁶

In response to this and other problems caused by the “no property” rule, some

American courts began to establish a quasi-property right in which a decedent's next-of-kin was granted "an exclusive right to possess and control the decedent's body"⁵⁰⁷ with respect to its disposition, as well as some protection against "unauthorized disturbances thereafter."⁵⁰⁸ The earliest American case recognizing such a quasi-property right was *In re Widening of Beekman Street*, wherein the court declared, inter alia, that "the right to bury a corpse and to preserve its remains, is a legal right, which the courts of law will recognize and protect"⁵⁰⁹ and that barring testamentary instructions to the contrary, it is the right of the decedent's next-of-kin.⁵¹⁰ Still, a quasi-property right "falls well short of conferring true property rights on the heirs,"⁵¹¹ as it is "neither pecuniary in nature nor transferrable"⁵¹² and includes:

the right to custody of the body; to receive it in the condition in which it was left, without mutilation; to have the body treated with decent respect, without outrage or indignity thereto; and to bury or otherwise dispose of the body without interference.⁵¹³

Indeed, rather than a positive, affirmative right, such a quasi-property right in another's remains has been analogized to a "'sacred trust' based on the reasons of 'natural sentiment, affection, and reverence.'"⁵¹⁴

Courts find a duty by family members to tend to the bodies of their next of kin, arising from these sentiments and our common humanity. This duty gives rise to a right in the corpse that is not a property right but more akin to a sacred trust. It is not a traditional property right because the family members do not own the body but merely hold the right as a sacred trust for the benefit of all family and friends who have an interest.⁵¹⁵

Accordingly, such a quasi-property right in another's remains has been criticized as being a "legal fiction"⁵¹⁶ which "evolved out of thin air"⁵¹⁷ in an attempt "to enable

relatives to recover for the tort of mental distress”⁵¹⁸ or otherwise protect the personal feelings of a decedent’s survivors.

“As property law is state law and differs among the states, American jurisdictions are today divided between the ‘no property’ jurisdictions and the ‘quasi-property’ jurisdictions, with each side claiming a majority.”⁵¹⁹ Thus, the question of the *living’s* rights in—or duty to—the remains of another is answered differently depending on the jurisdiction and the particular facts of each case. Indeed, the American law of the dead with respect to the status of human remains is in a perpetual “state of confusion and chaos.”⁵²⁰ Further exacerbating the issue is the fluidity of the human body and its uses:

in some instances we—both as individuals and through our legal system—conceptualize our body materials as property and sometimes as simply “not property.” . . . At critical moments, human body materials can move between these realms, as when blood formed in an individual’s body (not property) is removed and donated to a clinic (potential property), which then sells the blood to a medical center (clearly property), which uses it in a transfusion for another individual (not property).⁵²¹

Furthermore, we as human beings have a deep, emotional connection to bodies, alive and dead. Indeed, “[w]e care about our corpses because they are closely linked to our living bodies, which are central to our concepts of ourselves and to our autonomy while alive.”⁵²² The law of the dead generally acknowledges this sentiment insofar as it provides for the living to direct the posthumous treatment of their future remains.

THE RIGHT TO DIRECT POSTHUMOUS TREATMENT

The legal system in the United States recognizes that living individuals have a legitimate interest in deciding the disposition of their future remains.⁵²³ Indeed, various specific laws grant to the living “a legal right to make binding decisions about the treatment of their bodies after death.”⁵²⁴ For example, the living can direct the disposition of their future remains:⁵²⁵ “courts have almost always recognized the right of a person to make a testamentary disposition of his dead body,”⁵²⁶ though “[i]n the absence of specific statutory authority, a person has, at best, a very qualified assurance that the testamentary disposition that he makes of his own body will be fulfilled.”⁵²⁷

One’s directions for the posthumous disposition of his or her own bodily remains are not legally binding under common law because “the law of succession is said only to contemplate transfers of property and one’s body is not property at common law.”⁵²⁸ However, statutes in a majority of states now provide a right to decide the disposition of one’s own remains. In some states, a competent adult can provide written directions for the disposition of his or her own remains, and such directions are binding. Many states grant a living person the right to appoint another person to serve as a substitute decision-maker after his or her own death, and, in some states, the appointee is bound by the decedent’s directions. While these statutory rights to decide the disposition of one’s own remains are not unequivocal—most are subject to limitations of public safety and the method’s being lawful, reasonable, and not financially burdensome—they do establish some right in one’s own body which survives one’s own death.

Further, the living can provide for organ donation for transplant and other uses of their future remains in research and education⁵²⁹ pursuant to the Uniform Anatomical Gift

Act⁵³⁰ (which has been enacted in some form in every state and D.C.)⁵³¹ and various other state laws and regulations.⁵³² Under the Uniform Anatomical Gift Act, posthumous organ donation requires consent. By default, a person is presumed to have *not* consented to posthumous organ donation. However, a living, competent adult has the legal right to “opt in” to organ donation by giving his or her express consent, either orally or in writing.⁵³³ The Act essentially establishes “a right not to have your wishes overridden by your next of kin;”⁵³⁴ in other words, a person’s consent *or* refusal is legally binding. Under the Act as amended in 2006, “in the absence of an express, contrary indication by the donor, a person other than the donor is barred from making, amending, or revoking an anatomical gift of a donor’s body or part if the donor made an anatomical gift of the donor’s body or part”⁵³⁵ Similarly, a living person may *expressly refuse* organ donation, and that refusal cannot be overridden by the decedent’s next of kin.⁵³⁶ Indeed, a substitute decision—whether consent or refusal—is valid *only if* the decedent neither legally consented to *nor* legally refused posthumous organ donation when he or she was alive.⁵³⁷ Under some state-adopted versions, substitute consent is not valid “if it is known that the deceased would have opposed donation . . . even if the deceased’s opposition was not expressed in a legally binding manner.”⁵³⁸ Thus, the Uniform Anatomical Gift Act in its original, amended, and various adopted forms grants a living, competent adult the right to decide what happens to his or her body after death, and that decision is given priority over survivors’ wishes even after death.

There are three primary justifications for recognizing a legal right to make binding directions and decisions with respect to one’s own future remains. First, such recognition prevents harm to the dead, insofar as a living person’s right to bodily

integrity survives death.⁵³⁹

Second, such recognition prevents harm to living individuals, insofar as “living people care about what happens to their bodies after death” and will benefit while alive from “confidence that their wishes will be respected after death.”⁵⁴⁰ The question of whether or not the dead have rights or interests which can be harmed is irrelevant to this view; instead, we respect other people’s wishes regarding what happens to their bodies after death because by doing so, we comfort ourselves that our own wishes will be respected after our deaths.⁵⁴¹ But it is not merely the future dead who have an interest in the disposition of their own remains. Additionally, the decedent’s next of kin may have an interest in protecting their own personal feelings and emotional wellbeing,⁵⁴² and communities may have an interest in disposition of corpses insofar as it is related to public health and safety.⁵⁴³

Third, such recognition prevents harm to the living public as a whole, insofar as “as a society, we wish to see ourselves as people who respect the wishes of the dead.”⁵⁴⁴ This self-perception that we, as a society, respect the dead could be based upon one or more of the following ideas: either “we believe the dead have moral interests and we want to act morally by respecting those interests,”⁵⁴⁵ or “we think the living will benefit if we respect the prior wishes of the dead,”⁵⁴⁶ or “we perceive that respecting the wishes of the dead honors the lives of those who have died.”⁵⁴⁷ Regardless of the foundation of the society-wide self-perception, the recognition that the living have a legal right to give directions and make decisions with respect to one’s own future remains protects society as a whole.

Regardless of the justifications thereof, “[l]aws granting a right to posthumous

bodily integrity demonstrate that American society considers it appropriate to let individuals make many decisions about what will happen to their own dead bodies.”⁵⁴⁸ Indeed, as previously stated, “[w]e care about our corpses because they are closely linked to our living bodies, which are central to our concepts of ourselves and to our autonomy while alive.”⁵⁴⁹ In other words, a dead body is “a sacred symbol” of the person by whom it was once inhabited,⁵⁵⁰ and that symbol should be protected against mistreatment and misuse.

MISTREATMENT AND COMMERCIALIZATION OF REMAINS

Laws protecting against mistreatment of remains, as well as various regulations and policies prohibiting the sale and purchase of remains, aim to protect the dead and the living from violations of that sacred symbol.

But what is *mistreatment*? Many states have enacted statutes which set a standard for posthumous treatment of remains before final disposition and criminalize the breach of such standard.⁵⁵¹ For example, according to the Model Penal Code (and the eleven states adopted thereby⁵⁵²) “[a]buse of a corpse” is a crime “committed when a person ‘except as authorized by law . . . treats a corpse in a way that he knows would *outrage ordinary family sensibilities*.’”⁵⁵³ While this standard is vague and appeals to social norms to identify mistreatment of human remains,⁵⁵⁴ six states actually specify prohibited treatment, which include (among other things) intentionally removing, concealing, mutilating, destroying, cutting, and engaging in sexual deviate conduct with a corpse.⁵⁵⁵ Still, these statutes generally apply to corpses, and the question of whether a part removed therefrom is or is not included within the statutory definition of corpse is up for

debate.⁵⁵⁶ The majority of current cadaveric research uses, a selection of which was described in Chapter III, would be deemed abuse of a corpse under most statutory definitions, but do—and should—such standards apply to cadaveric research?

Further, these statutes generally prohibit disinterring or dismembering corpses, but they do not protect against an entirely different kind of treatment which might violate the sacred symbol of a corpse: sale and purchase.⁵⁵⁷

Indeed, the common law “no property” rule “has not prevented the basest commercial treatment of those remains—their sale on the open market.”⁵⁵⁸ However, individual company policies often restrict such commercialization of human remains. For example, Etsy—“a marketplace where people around the world connect to buy and sell unique goods”—⁵⁵⁹ has its own policy specifically regarding the sale and purchase of human remains. Their list of prohibited items was updated in 2012 to include

Human remains or body parts (excluding hair and teeth):
This includes, but is not limited to, things such as skulls,
bones, articulated skeletons, bodily fluids, preserved tissues
or organs, and other similar products.⁵⁶⁰

Etsy warns that “[i]n many cases, items on the prohibited list may be subject to complex legal regulations or restrictions that vary greatly by location,”⁵⁶¹ but acknowledges that it “it is possible for certain items to be carefully and legally bought and sold.” Nonetheless, the company explains that “when it comes right down to it, some things just aren’t in the spirit of Etsy.”⁵⁶² eBay—“one of the world’s largest online marketplaces, where practically anyone can buy and sell practically anything”⁵⁶³—has a broader policy regarding the sale of human remains. According to its Prohibited and Restricted Items Policy on Human Remains, “humans, the human body, or any human

body parts are not permitted on eBay.” However, “skulls and skeletons that are used for medical purposes may be listed on eBay,” though “eBay does not permit the sale of Native American skulls, bones or other Native American-grave-related items, as the sale of such items may violate federal law.”⁵⁶⁴

These individual company policies afford varying levels of protection against the sale and purchase of human remains on public forums, and each cites legal restrictions on commercialization as support. But these company-specific policies generally afford *more* protection than the law itself.

What sale and purchase does the law prohibit? “No federal law prohibits the disturbance of the burial sites of non-Native Americans, or the possession and trade of funerary objects and human remains.”⁵⁶⁵ The Native American Graves Protection and Repatriation Act (NAGPRA) (1990) is the only federal law protecting against commercialization of human remains, and extends its protection to Native American remains only. It was enacted in an attempt to protect Native American burial sites⁵⁶⁶ by “provid[ing] for both civil and criminal penalties for desecrating Native American graves and for buying, selling, or trading those remains.”⁵⁶⁷

With federal law affording no protection to non-Native American remains, “the laws regarding the disposition, possession, and trade of human remains and the disturbance of graves is handled by the states.”⁵⁶⁸ For example, the Louisiana Unmarked Human Burial Sites Preservation Act affords “considerably more protection for human burials and remains than does NAGPRA,”⁵⁶⁹ providing for criminal and civil penalties for the unauthorized *disturbance* of Native American remains in addition to desecration and commercialization.⁵⁷⁰ Further, this Act “extend[s] analogous protections to all

unmarked human burials. Regardless of affiliation, in most cases, the sale of human remains that had once been buried, under Louisiana law, is prohibited.”⁵⁷¹ Montana’s Human Skeletal Remains and Burial Site Protection Act⁵⁷² affords the most protection, prohibiting “[knowing possession, purchase, sale, transportation, barter or display]’ of ‘human skeletal remains.’”⁵⁷³

Such laws, regulations, and policies prohibiting the sale and purchase of remains may not facially apply to cadaveric research, but they are important at a much deeper level: they are evidence of the living’s commitment to the protection of the sacred symbol of the dead, and demonstrate a public consensus that sale and purchase of human remains is ethically, legally, and/or socially reprehensible. But, as described in Chapter III, there is, indeed, a market for cadavers (and non-transplant tissues and organs). In fact, in some circumstances, cadaver donation can become a commercial industry.

Cadavers are often donated from decedents or their families directly to an institution by name, such as a specific medical school. A select few of these institutions receive the majority of donations, leaving numerous other institutions with a shortage of cadavers. Bodies are sometimes transferred via a “body broker” from the institution having an excess of donations to the institution having a shortage. Brokers charge fees to both the “transferor” and the “transferee” of the body, but insist that this transaction does not constitute a commercial sale or purchase; rather, the fee is for the effort, expertise, connections, and other services provided by the broker in facilitating the transfer. An alternative to donating one’s body to a specific institution is to engage a “body donation program.” These companies, such as Science Care, Inc., “link people who want to donate their body to science with medical researchers”⁵⁷⁴ In other words, rather than

facilitating a transfer between two research institutions, these companies facilitate a transfer from the donor directly to the research recipient.

In any event, a market for cadavers (and parts thereof) does exist, and even if the bodies are not technically bought and sold, body transfers are a commercial transaction. “[T]he commercialization of human remains is dramatically inconsistent with the respect that by law and custom we generally provide to deceased human beings.”⁵⁷⁵ Would the transfer of a cadaver for the financial profit of a third party *outrage ordinary family sensibilities*? Is the commodification of cadavers in research an ethical, legal, or social violation like the sale and purchase of human remains on public commercial forums? Whether the context of research does or does not affect the application of various ethical, legal, and social protections of remains, one thing is clear: such a “sacred symbol” merits more consideration and clarity.

IV A CALL FOR CHANGE IN THE LAW AND ETHICS OF USING THE DEAD IN RESEARCH

Whether or not the dead do—and should—have legal rights has a direct bearing on the use of the dead in research. The existing law of the dead is insufficient to protect the bodies and survivors of the dead; further, the legal, regulatory, and ethical uncertainty exposes institutional research and individual researchers to risks of inadvertent violations. Various aspects of the law of the dead—particularly as it applies to cadaveric research—are in need of specification and clarification. For example, as set forth in Chapter III, the law is inconsistent, contradictory, and vague as to the legal status of human remains. Further, the laws regarding the right to direct posthumous treatment, as well as mistreatment and commercialization of the dead, have unique implications and give rise to new questions when applied to cadaveric research. Indeed, other existing legal concepts which were established in the context of the living—such as the right to bodily integrity and requirements for informed consent—take new life when applied to the dead. How does the law of the living apply to research on the dead?

Rather than answering the countless questions that plague the law of the dead in research, this thesis merely aims to illuminate key legal and ethical issues that are shrouded in the darkness of our death-denying culture, and to promote consideration and discussion of possible answers and solutions. There are many potential changes to laws, regulations, and policies which will be addressed in this section. However, the undercurrent of reform is the question of who holds the ethical and legal rights in a dead body (if any)?

RIGHTS OF WHOM?: THE PROBLEM OF THE RIGHTS-HOLDER

One of the most basic questions underlying the law of the dead is “the legal rights *of whom?*” There are two general ways in which one might have a right in his or her own remains: first, a living person may hold rights and/or interests in his or her own future dead body; second, a dead person may hold rights and/or interest in his or her own currently dead body. In other words, there two primary potential rights-holders: X while alive with respect to X’s *future* remains, and X after death with respect to X’s “*present*” remains.^{576, 577}

The term “right” defies pinpoint definition. Even legal scholars are unable to agree on an exact comprehensive meaning.^{578, 579} Legal rights differ from moral rights in many ways that are beyond the scope of this thesis, but most importantly for the present purposes, a moral right is necessary, but not sufficient, to give rise to a legal right. In other words, assuming that one has a moral right, it does not necessarily follow that such moral right is, or should be, protected by law. In determining which moral rights are, or should be, legally protected, two theories are primarily used: either “interest theory” or “will theory.”⁵⁸⁰

According to interest theories of rights, one must have an interest in order to have a right;^{581, 582} specifically, “an entity has a right when others have a duty to protect one of its interests.”⁵⁸³ In other words, X has a legal right when others have a duty to protect X’s interest.⁵⁸⁴ Like rights, “interests” are difficult to precisely define and have been described in many ways. One description is that an interest is a moral claim in X, “the violation of which is a moral wrong;”⁵⁸⁵ another description is that interests are “‘stakes’

that are derived from and linked to wants,”⁵⁸⁶ insofar as having a stake in X means standing to gain or lose something depending on the condition or outcome of X.⁵⁸⁷ Unlike will theory, interest theory does not require the ability to enforce one’s rights oneself.⁵⁸⁸

Accordingly, “[b]y focusing on the preservation of well-being rather than on the exercise of choice, it leaves open the possibility of ascribing legal rights to . . . dead people”⁵⁸⁹ Indeed, interest theory “acknowledges that the dead can have interests that survive death;”⁵⁹⁰ there is “wide support in case law and legislative history for this idea,”⁵⁹¹ as “courts care very deeply about testamentary wishes, particularly those regarding mortal remains, and often go to great lengths to ensure that the decedent’s wishes are respected.”⁵⁹²

According to a will theory of legal rights, however, “[l]egal rights exist only where one is sentient and capable of making choices,”⁵⁹³ and because the dead are neither sentient nor capable of making decisions, the dead cannot hold rights.⁵⁹⁴ In other words, the dead do not have any legal rights because they are “not competent to form or express their wishes with the elementary degree of precision and reliability that would be necessary for the full-fledged exercise of any legal power of enforcement/waiver.”⁵⁹⁵ Put another way, the dead cannot hold rights because they cannot generate, possess, or communicate their interests to the degree required by our legal system.⁵⁹⁶

In sum, “depending on one’s view of the nature and scope of rights, it may, or may not, be possible for the dead to have them.”⁵⁹⁷ Nonetheless, whether a right belongs to a “living individual only or survives death may seem a rather fine and perhaps irrelevant distinction: the relevant laws apply regardless.”⁵⁹⁸ So why does the identity of

the rights-holder matter?⁵⁹⁹ It is crucial in identifying a violation, violator, and victim in establishing a legal cause of action and remedy. Further, it is essential when drafting laws, regulations, and policies to identify *who* is being protected, living or dead.⁶⁰⁰

Accordingly, the identity of the rights-holder should be of primary concern in considering the following potential changes to laws, regulations, and policies.

ESTABLISHING A POSTHUMOUS RIGHT TO BODILY INTEGRITY

“Given the widespread nature of Americans’ right to make binding decisions about the treatment of their corpses it could be argued that a general right to posthumous bodily integrity exists”⁶⁰¹ Indeed, the law unequivocally recognizes and protects a right to bodily integrity in a *living* body insofar as it prohibits battery and physical assault;⁶⁰² perhaps this right to bodily integrity extends to a dead body, as well.

If so, by whom is such a right held? A general right to posthumous bodily integrity could be held by the living while alive, but “[a]t the moment of death, that person’s legal right to posthumous bodily integrity would cease because there is no longer any entity with moral status to possess that particular right.”⁶⁰³ Alternatively, if the right to bodily integrity while alive survives death, as discussed above, a general right to posthumous bodily integrity (in one’s *dead* body) would remain.⁶⁰⁴ In that case, both the living and the dead would hold a general right to posthumous bodily integrity.⁶⁰⁵

“[L]iving people are said to have an interest in certain events that occur after their deaths because they may be part of a person’s overall life plan.”⁶⁰⁶ Indeed, the living have critical interests—interests that “reflect critical judgments about what makes life good”⁶⁰⁷—in the posthumous treatment of their remains.⁶⁰⁸ Such critical interests

regarding posthumous treatment are not only evidence “that people care what happens after they die, but also that they have a moral claim to determining what happens after they die.”⁶⁰⁹ In addition to moral claims, critical interests “can ground legal rights,”⁶¹⁰ such as a legal right to bodily integrity.⁶¹¹ In sum, “[s]ince critical interests implicate our autonomy—our interest in making decisions about ourselves—we can have a present interest in post-mortem events”⁶¹² including how our bodies are treated after death.⁶¹³ But does this critical interest *of the living* in posthumous bodily integrity, *survive death*?

If the living’s interest in the treatment of their future remains *does survive* death, there is a moral obligation to fulfill the wishes of the dead regarding the treatment of remains “because doing so respects interests that persist.”⁶¹⁴ However, if the living’s critical interest in the treatment of their future remains *does not survive* death, then such interest would end at death and there would be no moral obligation to fulfill the dead’s wishes regarding the treatment of remains. In other words, “any interest a person had in the treatment of her corpse could only be fulfilled or violated during her life: individuals’ moral claims in relation to their bodies would expire at death.”⁶¹⁵ Nonetheless, there are various potential reasons for respecting/fulfilling the dead’s prior wishes regardless of whether the dead hold any rights or interests at all. First, “if a person or the state assures [X] that [X’s] body will be treated in a particular way[,] to break that promise is immoral, even though it is not a violation of [X’s] interests.”⁶¹⁶ In other words, “[i]t is a wrong, but *not* a wrong *to* [X].”⁶¹⁷ Second, “the living have not only an interest in the treatment of their corpse, but an interest in believing their corpse will be treated in a certain way.”⁶¹⁸ In other words,

if [X’s] post-mortem wishes are not systematically

respected, living individuals will have good reason to doubt that their own wishes will be respected after their death [*sic*]. Their critical interests in the treatment of their corpses can therefore not be satisfied. Thus, the claim that living individuals have an interest in what happens to their corpses rests not on interests that survive death, but rather on the benefit of them [*sic*] knowing, while they are alive, that their wishes will be respected.⁶¹⁹

Indeed, people can—and do—“suffer from the belief that their posthumous wishes will not be respected,”⁶²⁰ regardless of whether they ultimately are respected or not.⁶²¹

RECONSIDERING REQUIREMENTS FOR CONSENT TO CADAVERIC RESEARCH

Another potential change is to reconsider requirements for consent in cadaveric research. The issue of consent in cadaveric research far exceeds the scope of this thesis; however, for the present purposes, the issue of required consent is ultimately an issue of one’s right to direct or limit posthumous treatment of one’s own remains.

As previously described, the Uniform Anatomical Gift Act requires consent for donation of one’s body (or a part thereof). The Act grants a living, competent adult the right to decide what will happen to his or her body after death, and such a documented decision is given priority over survivors’ wishes even after death. If the decedent did not make a premortem decision and documentation, the Act sets forth a “‘priority list’ of classes of persons who may consent to the donation.”⁶²² However, “[t]he [Uniform Anatomical Gift Act] does not include persons authorized under a durable power of attorney as a class of persons who may consent to make a gift on behalf of others.”⁶²³ In other words, the Act does not expressly include a decedent’s agent, or person granted

various powers by the decedent principal in a durable power of attorney, to provide proxy consent to make an anatomical gift.⁶²⁴ But in some states, the powers granted to a health care agent *do* expressly include the authority to provide consent required to make an anatomical gift. For example, according to the health care powers of attorney statutory forms for North Carolina, a principal “grant[s] to [his or her] health care agent full power and authority to make and carry out all health care decisions”⁶²⁵ on the principal’s behalf, including *inter alia* “exercising any right [the principal] may have to . . . direct the disposition of [the principal’s] remains,”⁶²⁶ subject to pre-mortem valid and enforceable arrangements to the contrary and any other limitations specified by the principal.⁶²⁷ Further, under the heading of “Organ Donation,” the statutory form provides for a principal to specifically allow an agent to “[d]onate [the principal’s] body for anatomical study if needed.”⁶²⁸ One proposed change is to amend the Uniform Anatomical Gift Act to include such agents in the list of persons who may provide proxy consent for donation, or for states to expressly include in health care powers of attorney statutory forms the authority to provide consent required to make an anatomical gift.⁶²⁹

While consent is clearly required for cadaveric donation for research under the almost universally-adopted Uniform Anatomical Gift Act, the question of consent required for cadaveric research is nonetheless debated. Of course, in the case of pre-mortem refusal, wherein a decedent made and communicated (while alive) a decision that he or she did not want his or her remains to be used in research, that refusal should be honored.⁶³⁰ From a legal perspective, “the Uniform Anatomical Gift Act . . . empowers people to *give* or *withhold* consent to use their bodies, or specified parts of their bodies,

for . . . research . . . after death.”⁶³¹ From an ethical perspective, such refusal should be honored “out of respect for rights and interest of living beings.”⁶³²

However, there is a question of whether consent to donation is—and should be—required when there is no documented pre-mortem decision regarding the use of remains (neither refusal nor consent). Of course, from an ethical perspective, there is a general consensus that a decedent’s premortem preferences and values should be honored due to “a cardinal ethical principle, respect for persons.”⁶³³ But what if they are not known? What if the decedent did not exercise his or her right to direct posthumous treatment?

Some bioethicists have argued that under these circumstances, consent from a decedent’s next of kin should *not* be required *if* it would cause the decedent’s survivors serious emotional or psychological harm. Instead, they advocate a “don’t ask, don’t tell” approach. In addition to preventing harm to the next of kin, they argue that getting informed consent from the next of kin is impracticable, given that the short window of time in which certain important procedures can be practiced is greatly exceeded by the amount of time in which it is considered disrespectful to approach survivors with such an emotionally-charged decision. Further, they argue, such impracticability only hinders the research process. While this claim may seem outrageous, it is not without authoritative support. According to a report by the President’s Commission for the Study of Ethical Problems in Medicine and Biomedical and Behavioral Research,⁶³⁴ researchers should “make a reasonable effort to obtain specific consent from next of kin when the research is ‘beyond the normal scope of teaching and research.’”⁶³⁵ This seems to imply approval of some types of cadaveric research—specifically, practicing non- and minimally-invasive procedures—without consent.⁶³⁶

Although there is consensus on the legal requirements of consent for donation, such consensus on the ethical requirements is lacking. In other words, it is settled that the law *does* require consent for donation, but *should* it?

It is important to note that the preceding discussion of consent is with respect to donation. Yet, *donated* bodies—those which were donated premortem by the decedent or postmortem by the survivors thereof—are not the only source of research cadavers.

Unclaimed bodies are also used in cadaveric research.

Under the Uniform Anatomical Gift Act, as previously discussed, consent to *donation* is explicitly required and may be provided either by the decedent premortem or, if the decedent provided no premortem consent, by the survivors postmortem.⁶³⁷

However, if the decedent *expressly refused donation*, his or her survivor's proxy consent cannot trump that refusal.⁶³⁸ In other words, if a person expressly refuses to donate his or her body premortem, his or her family cannot do so on his or her behalf postmortem.

However, if the decedent's family refuses to claim the body, it becomes "unclaimed remains," and accordingly, may be used in research despite the decedent's premortem refusal.

Indeed, many states have enacted statutes which permit the transfer of unclaimed remains for use in research. For example, North Carolina has established a Commission of Anatomy, which has *inter alia* the "power and duty to adopt rules for the distribution of dead human bodies and parts thereof for the purpose of promoting the study of anatomy in the State of North Carolina."⁶³⁹ The Commission "is authorized . . . to be a donee of a body or parts thereof pursuant to [North Carolina's Revised Uniform Anatomical Gift Act] and to distribute such bodies or parts thereof pursuant to the rules

adopted by the Commission.”⁶⁴⁰ Any unclaimed human remains—those which have not been claimed within ten days after death—are delivered to the Commission of Anatomy, in which all interests in and rights to such remains vest.⁶⁴¹ Accordingly, the Commission of Anatomy may distribute unclaimed remains to be used in research.

Of course, unclaimed bodies by definition lack premortem or postmortem consent for donation. And, of course, many bodies are unclaimed due to the poverty of the decedent, his or her family, or both. Thus, the bodies which once belonged to people of a vulnerable population are being used in research without their consent or the consent of their families. This raises infinite and important issues of justice which are beyond the scope of this thesis. Still, what is important for the purposes hereof is that questions of consent are not limited to body donation, and that the use of unclaimed remains raises unique issues of vital importance. Thus, in re-considering the requirements for consent to cadaveric research, the use of unclaimed remains should be afforded special attention.

Regardless of the legally and ethically required consent for use in cadaveric research, the fact is that individuals can—and do—consent to donation for research. But *to what* are they consenting?

ESTABLISHING CADAVERIC-RESEARCH SPECIFIC STANDARDS

When a living individual expressly consents to the donation of his or her future remains for research, to what is he or she consenting? The range of potential research uses is vast: perhaps medical students will learn life-saving techniques, perhaps they will be plastinated on permanent display, or perhaps they will be dropped onto explosives or become crash-test dummies. Do people really know what research might entail? Would they want to know? Indeed, some research uses are harder to stomach than others. Do these uses constitute mistreatment of a corpse? If so, can one consent to the mistreatment of one's future corpse? Can one consent to the mistreatment of another person's corpse?

As previously discussed, the standards of treatment of the dead are both over-protective (they may prohibit legitimate research uses) and under-protective (they do not protect against commercialization), and vague. Establishing a uniform minimum standard of respectful treatment⁶⁴² would “ensure that cadavers will be handled and treated at all times in a manner that is consistent with their having once been the bodies of living persons.”⁶⁴³

But, by its very nature, research on the dead would almost certainly violate such a minimum standard. Thus, one potential change is to establish and promote an *research-specific* standard of treatment specifically for research involving the dead; a minimum standard of general treatment beyond the research context will necessarily conflict with certain research uses. Establishing and promoting a research-specific standard (and accompanying protocols and oversight, as discussed below) would allow for certain treatment that is necessary for the study design and protocol but would otherwise constitute mistreatment, while nonetheless protecting the dead from disrespectful

treatment⁶⁴⁴ and requiring the utmost respect of, and even gratitude toward, the decedent. While “[i]t is generally acknowledged that human corpses should be treated with respect,”⁶⁴⁵ “disrespect” varies by culture, time periods, and individual persons and depends on context, intent, and objective. Indeed, the contexts, intents, and objectives of research may differ significantly from other posthumous events. Accordingly, what is mistreatment outside of the research context may not constitute mistreatment within it. Thus, research-specific criteria should be established apart from a general minimum standard of treatment of the dead.⁶⁴⁶

After establishing a research-specific minimum standard of treatment, it must be put into action via cadaver-specific protocols and oversight.⁶⁴⁷ Such protocols and oversight⁶⁴⁸ are necessary to protect the dead, the living, and the research enterprise as a whole. These mechanisms would protect the dead “from being used for research that is incompatible with the [decedent’s] premortem preferences and values,”⁶⁴⁹ as previously discussed with respect to consent. It has been argued that the ethical principle of respect for persons “requires, at the very least, considering the person’s preferences with regard to the treatment and disposition of her body after death,”⁶⁵⁰ thereby “acknowledging the body’s history as that particular person’s body.”⁶⁵¹

The existence of such protocols would protect the living public, as well. Protecting the dead “can contribute to the well-being of people while they are still alive.”⁶⁵² Indeed,

the expectation that people’s preferences with respect to the disposition of their estates and their bodies will be respected after their deaths can be a source of considerable reassurance and comfort to them before they die. Conversely, a concern that these preferences might not be

respected can be a source of considerable anxiety, anguish, and distress.⁶⁵³

In addition to protecting the dead and the living public, cadaveric-research-specific protocols and oversight would protect the surviving relatives of the deceased.⁶⁵⁴ While protecting a decedent's family from emotional harm may seem unimportant, it should be noted that the law does care about family's feelings, as evidenced by the common standard in statutes prohibiting abuse/desecration of a corpse of "ordinary family sensibilities."⁶⁵⁵ Generally, research involving *living* participants "aims to protect subjects, and not their families."⁶⁵⁶ But in the case of research involving the dead, surviving family members thereof warrant protection on account of both their decision-making authority and their interest in avoiding emotional harm.

If a decedent did not give premortem consent to postmortem research, "it is generally inappropriate to conduct such research without the consent of the family, and their decision-making authority warrants protection."⁶⁵⁷ Indeed, the Uniform Anatomical Gift Act "recognizes the decision-making authority of next-of-kin insofar as an anatomical gift requires their consent if the decedent did not make such a gift premortem."⁶⁵⁸ Additionally, families generally have responsibility/duty to dispose of remains,⁶⁵⁹ so "[a]llowing families to approve or disapprove of postmortem research when the deceased has not done so prior to death also serves to protect their ability to responsibly discharge their duty to dispose of a relative's body."⁶⁶⁰

Further, the family has interest in avoiding emotional harm and "should be protected from the emotional shock and trauma that can result if they discover that, without their knowledge, a research intervention was performed on a deceased loved

one.”⁶⁶¹ Additionally, it is arguable that family members “have a legitimate interest in knowing what will be done to a deceased loved one, and that this interest also warrants protection,”⁶⁶² though such protection is not absolute (as in the limits on family veto of a deceased’s premortem decision).

In addition to protecting the dead, the general living public, and the survivors of decedents, cadaveric-research-specific protocols would protect the research enterprise itself from unintentional violations and public distrust. In addition to providing much-needed guidance to investigators whose research often explores “uncharted territory,”⁶⁶³ “uniform and consistent ethical standards”⁶⁶⁴ are vital to cadaveric-specific research because “the range of ‘acceptability’ is both potentially unlimited and uncontrollable.”⁶⁶⁵ Indeed, fundamental issues such as whether or not consent from a decedent’s family is required or the definition of respectful treatment of a corpse “should not be left to the personal discretion of individual investigators.”⁶⁶⁶

In sum, a cadaveric-specific minimum standard of treatment and accompanying protocols and oversight would protect the dead, the living, and researchers.

RE-DEFINING THE LEGAL STATUS OF REMAINS

Another potential change is to specifically re-define the legal status of human remains, whether as property, quasi-property, or not property. As set forth above, the “quasi-property” status of cadavers is more like a duty to perform some disposition than a property right in the remains. If “quasi-property” jurisdictions continue to adhere to this notion, the exact legal nature of human remains must be clarified.

Alternatively, some scholars opine that the body (and the parts and remains thereof) should constitute property. These proponents point to the existing market for body parts as support for property status; indeed, eggs, sperm, and blood are bought and sold,⁶⁶⁷ over sixty-seven percent of organ procurement agencies sell organs directly to for-profit firms,⁶⁶⁸ and “[t]he tissue industry has become a billion dollar industry, not to mention the biotechnology industry which also derives many products, such as cell lines, from human body parts.”⁶⁶⁹ Property-status proponents also cite “the concrete and well understood rules associated with property”⁶⁷⁰ as support; property law, they argue, “is a familiar legal field developed over centuries with ready-made concrete rules associated with it that can be pulled off the rack and applied to different situations.”⁶⁷¹ At the same time, “the malleability and flexibility of the legal concept of property”⁶⁷² is “flexible enough to accommodate new functions.”⁶⁷³ But opponents—those arguing that bodies should not constitute property—warn of “devaluation through commodification of something that is priceless”⁶⁷⁴ and “reification and objectification of that which is inherently subjective, and hence, the long-term consequences for how we view and relate to ourselves”⁶⁷⁵ In response to the property-status-proponents’ position that “property really describes a set of relationships (the proverbial bundle of sticks) between

a subject and a thing,”⁶⁷⁶ these opponents argue that such a conceptualization of property

does not comport with everyday lived experiences. In everyday life, most people relate to property as a thing or something to acquire, to use, and to put on display, such as an object that is to be manipulated and coveted. But even accepting the bundle of sticks conception poses problems. If applied to the body, viewing property as a bundle of different relationships among persons or other entities with respect to things is a way of disaggregating--fragmenting the body and distributing its discrete components. Literally and figuratively this conception of property alienates us from our bodies and selves as wholes, turning them into discrete alienable parts.⁶⁷⁷

With respect to the legal status of human remains as property, quasi-property, or not property, it is important to remember that “[o]ur relationship with our bodies is complicated and laden with many different religious and societal beliefs.”⁶⁷⁸ Indeed, the issue is more than mere semantics.

CONCLUSION

This thesis is a call for a change not in cadaveric research, but in the legal, ethical, and social climates within which such research occurs. These legal, ethical, and social issues are overwhelmingly complex and merit careful consideration and scrutiny. Yet, death and the dead are not easily understood or discussed.

Ultimately, how we view and understand ourselves is at stake. Many of our core values overlie the questions and answers we ask about how we treat our body parts. Most fundamentally, our autonomy, dignity, human liberty, and self-determination are at issue, but balanced against these are our sense of ourselves as part of a larger community and our concomitant duties to help others. . . . The questions are complex and hard to answer. Yet, given our nature as conscious beings with ethical sensibilities, we are compelled to ask questions and to attempt to develop some answers.⁶⁷⁹

We—as bioethicists, lawmakers, and the public—*must* overcome the social taboo and face the issue of the legal and ethical rights of the dead in research. Indeed, what happens when we die is not a problem for the dead—rather, it is a problem for the living.

“Anthropologists note that one of the defining characteristics of humanity is that we do not casually dispose of what remains after death.”⁶⁸⁰ We not only treat the remains of our loved ones with great respect,⁶⁸¹ but we also treat the remains of anonymous strangers with great reverence:⁶⁸² traffic stops for funeral processions,⁶⁸³ funerals for celebrities and public figures draw large crowds throughout the country, donations are collected for the burial of anonymous corpses⁶⁸⁴ and sympathetic strangers organize fundraisers to help defray funeral expenses, candlelight vigils and protests are formed to raise awareness of the dead, and knowledge of the mistreatment of remains sparks

“disgust and anger”⁶⁸⁵ throughout the general public. Indeed, the dead do matter. But *why?*

Some people protect the remains of the dead in an attempt to protect the dead. In seventeenth- and eighteenth-century Europe, the right to a decent burial—which has been consistently recognized throughout American common law—⁶⁸⁶ was based upon the living’s “Christian duty” to the dead.⁶⁸⁷ This duty was based upon the concept that one’s chance of resurrection and eternal salvation was directly dependent upon the disposition of one’s remains.⁶⁸⁸ A more modern theory is, as previously discussed, that certain interests possessed by the living actually survive death and, accordingly, are subject to harm by posthumous treatment of their remains. Or, instead of trying to protect the actual dead, perhaps it is merely the sacred symbol of the once-living person⁶⁸⁹ that we are protecting, insofar as “respecting the wishes of the dead honors the lives of those who have died.”⁶⁹⁰

Perhaps it is not the dead that we are trying to protect, but the living. We often revere the dead’s remains in an attempt to protect the emotional and psychological wellbeing of the decedents’ loved ones. Perhaps our duties to the dead are based upon “universal feelings of mankind.”⁶⁹¹

In one view it is true it may not matter much where we rest after we are dead, and yet there has always existed in every person a feeling that leads him to wish that after his death his body shall repose beside those he loved in life. Call it sentiment, yet it is a sentiment and belief which the living should know will be respected after they are gone.⁶⁹²

Perhaps the ultimate purpose is to provide assurance to the living public: “living people care about what happens to their bodies after death and we want to give them confidence

that their wishes will be respected after death.”⁶⁹³ In other words, we treat all remains in a certain way not for the benefit of the dead, but for the purpose of establishing or maintaining a social precedent or cultural norm which will provide a psychological benefit to the *living*. “[T]he living have not only an interest in the treatment of their corpse, but an interest in believing their corpse will be treated in a certain way.”⁶⁹⁴ Thus, the living are subject to emotional and psychological harm from the *belief* that their remains will be treated in a certain way—and, correspondingly, may benefit from the reasonable expectation that their remains will be treated in accord with cultural norms—regardless of how their remains are actually treated after death. Put another way,

if [X’s] post-mortem wishes are not systematically respected, living individuals will have good reason to doubt that their own wishes will be respected after their death [*sic*]. . . . the claim that living individuals have an interest in what happens to their corpses rests . . . on the benefit of them [*sic*] knowing, while they are alive, that their wishes will be respected.⁶⁹⁵

Or are we are merely seeking to protect ourselves through reciprocity?

“Respecting the right of the decedent to a decent burial is part of a social compact to secure future respect for our own rights.”⁶⁹⁶ According to one New York court in 1880, “the dead themselves . . . have rights, which are committed to the living to protect, and in doing which [the living] obtain security for the undisturbed rest of their own remains.”⁶⁹⁷

In any event, the dead do matter. The potential reasons *why* they matter are crucial in considering reforms to law and policy. If, for example, we want to protect decedents’ surviving loved ones from emotional harm, then we must ensure that the law or policy actually meets that end (rather than, for example, denying survivors access to recovery for emotional harms).

This thesis has explored how the dead *are* treated (from a research perspective) and how the dead *may* be treated (from a legal perspective), but it is now up to us—bioethicists, lawyers, and the public—to give the question of how the dead *should* be treated the careful consideration it merits. Until the existing law of the dead is amended to accurately reflect the rights that people (living or dead) do have in dead bodies—or until new laws and regulations, are created to establish the rights that people (living or dead) should have in dead bodies—the dead, the living, and the research enterprise as a whole are at grave risk of harm.

ENDNOTES

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³ *Id.*

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⁵ Jessica Mitford, *The American Way of Death Revisited* 14-18 (1998).

⁶ *Id.*

⁷ Marsh, *Limitations on Treatment of Human Remains*, *supra* at 4.

⁸ *Id.*

⁹ *Id.*

¹⁰ *Id.*

¹¹ *Id.*

¹² *Id.*

¹³ Michael C. Kearl, *Social Functions of Death*, Encyclopedia of Death & Dying, <http://www.deathreference.com/Sh-Sy/Social-Functions-of-Death.html> (last visited Nov. 11, 2014).

¹⁴ *Id.*

¹⁵ *Id.*

¹⁶ *Id.*

¹⁷ *Id.*

¹⁸ *Id.*

¹⁹ *Id.*

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²¹ *Id.*

²² *Id.*

²³ United States Gen. Serv. Admin. Office of Citizen Services & Innovative Tech., *9/11 Commemorations and Memorials*, USA.gov (Nov. 7, 2014), <http://www.usa.gov/Citizen/Topics/History-American/September11.shtml>.

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²⁷ *Id.*

²⁸ *Id.*

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³² Kearl, *supra*.

³³ *Id.*

³⁴ *Id.*

³⁵ *Id.*

³⁶ *Id.*

³⁷ *Id.*

³⁸ *Id.*

³⁹ Steven Jobs, CEO of Apple, Inc. and of Pixar Animation Studios, Inc., Commencement address at Stanford Univ. (June 12, 2005), in “*You've Got to Find What You Love,*” *Jobs Says*, Stanford Rep. (June 14, 2005), <http://news.stanford.edu/news/2005/june15/jobs-061505.html>.

⁴⁰ Michael Dawson, *Styx (River)*, Encyclopedia Mythica Online, http://www.pantheon.org/articles/s/styx_river.html (Dec. 27, 1998).

⁴¹ Melanie King, *The Dying Game: A Curious History of Death* 16 (2008) (quoting Edgar Allen Poe, *The Premature Burial* (1844)).

⁴² James T. Gire, *How Death Imitates Life: Cultural Influences on Conceptions of Death and Dying* in W. J. Lonner et al. eds., *Online Readings in Psychology and Culture* § 14.2 (2002), <http://www.wvu.edu/culture/gire.htm>.

⁴³ *Id.*

⁴⁴ *Id.*

⁴⁵ *Id.*

⁴⁶ “[T]he Truskese of Micronesia believe that life ends at 40 years of age, and when you reach 40, you are, in effect, dead. Given the physically demanding activities engaged in by people in this society, there seems to be a noticeable decline in the ability of the Truskese to perform their socially assigned roles at acceptable standards at this age. Sensing that the end must be coming, the individual begins to prepare for death and is viewed as being dead even before he or she transitions to that point as viewed from the Western perspective.” *Id.*

⁴⁷ Harry Scott-Holland, *The King of Terrors* (1910).

⁴⁸ Robert Kastenbaum, *Definitions of Death*, Encyclopedia of Death & Dying, <http://www.deathreference.com/Da-Em/Definitions-of-Death.html> (last visited Nov. 11, 2014).

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⁵¹ *Id.*

⁵² Kastenbaum, *supra*.

⁵³ Kastenbaum, *supra* (emphasis added).

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⁵⁵ *Id.*

⁵⁶ *Id.*

⁵⁷ *Id.*

⁵⁸ *Id.*

⁵⁹ *Id.*

⁶⁰ *Id.*

⁶¹ *Id.*

⁶² *Id.*

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⁶⁶ *Id.*

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⁷⁰ King, *supra* at 23-24.

⁷¹ Kastenbaum, *supra*.

⁷² *Id.*

⁷³ King, *supra* at 24 (emphasis added).

⁷⁴ King, *supra* at 6.

⁷⁵ “The Revd J.G. Ouseley in his 1895 pamphlet *Earth to Earth Burial* estimated that at least 2,700 persons in England and Wales ‘are yearly consigned to a living death’”
Id.

⁷⁶ Kastenbaum, *supra*.

⁷⁷ King, *supra* at 16.

⁷⁸ Jan Bondeson, *Buried Alive: The Terrifying History of Our Most Primal Fear* 53 (2002) (quoting Jean-Jacques Bénigne Winslow, *Morte Incertae Signa* (1740)).

⁷⁹ King, *supra* at 20.

⁸⁰ *Id.*

⁸¹ *Id.*

⁸² *Id.*

⁸³ King, *supra* at 21.

⁸⁴ *Id.*

⁸⁵ Radionuclide cerebral angiography is “a harmless radioactive dye is injected into the patient’s brainstem. If circulation below the base of the brain does not occur, showing no evidence of fluid draining away, the patient is declared dead.” *Id.*

⁸⁶ *Id.*

⁸⁷ Kastenbaum, *supra*.

⁸⁸ King, *supra* at 19.

⁸⁹ *Id.*

⁹⁰ King, *supra* at 20.

⁹¹ King, *supra* at 9.

⁹² *Id.*

⁹³ *Id.*

⁹⁴ *Id.*

⁹⁵ Kastenbaum, *supra*.

⁹⁶ *Id.*

⁹⁷ *Id.*

⁹⁸ *Id.*

⁹⁹ *Id.*

¹⁰⁰ *Id.*

¹⁰¹ *Id.*

¹⁰² *Id.*

¹⁰³ *Id.*

¹⁰⁴ *Id.*

¹⁰⁵ *Id.*

¹⁰⁶ *Id.*

¹⁰⁷ *Id.*

¹⁰⁸ *Id.*

¹⁰⁹ *Id.*

¹¹⁰ *Id.*

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¹¹² *Id.*

¹¹³ *Id.*

¹¹⁴ *Id.*

¹¹⁵ *Id.*

¹¹⁶ *Id.*

¹¹⁷ David C. Magnus et al., *Accepting Brain Death*, 370 New Eng. J. Med. 891, 892 (Mar. 6, 2014).

¹¹⁸ *Id.*

¹¹⁹ Nat'l Conference of Comm'r on Unif. State Laws, *Why States Should Adopt UDDA*, <http://www.uniformlaws.org/Narrative.aspx?title=Why%20States%20Should%20Adopt%20UDDA> (last visited May 21, 2014).

¹²⁰ *Id.*

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- ¹²¹ Mangus, *supra* at 893.
- ¹²² *Id.* at 892.
- ¹²³ *Id.* 893.
- ¹²⁴ *Id.*
- ¹²⁵ Kastenbaum, *supra*.
- ¹²⁶ *Id.*
- ¹²⁷ *Id.* (emphasis added).
- ¹²⁸ *Id.*
- ¹²⁹ Under this “cerebral brain death” definition, a person in a persistent vegetative state or irreversible coma would be considered dead.
- ¹³⁰ Kastenbaum, *supra*.
- ¹³¹ *Id.*
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- ¹³³ *Id.*
- ¹³⁴ *Id.*
- ¹³⁵ *Id.*
- ¹³⁶ *Id.*
- ¹³⁷ *Id.*
- ¹³⁸ *Id.*
- ¹³⁹ Mangus, *supra* at 893.
- ¹⁴⁰ Kirsten Rabe Smolensky, *Rights of the Dead*, 37 Hofstra L. Rev. 763, 772 (2009).
- ¹⁴¹ Smolensky, *supra* at 772-73.
- ¹⁴² Mangus, *supra* at 893.
- ¹⁴³ Nat’l Conference of Comm’r on Unif. State Laws, *supra*.
- ¹⁴⁴ N.J. Stat. Ann. § 26:6A-5 (West).
- ¹⁴⁵ Okla. Stat. Ann. tit. 63, § 3122 (West).
- ¹⁴⁶ Such states include Alabama, Arkansas, Delaware, Florida, Georgia, Hawaii, Iowa, Kentucky, Louisiana, Missouri, New Jersey, North Carolina, Ohio, Texas, Virginia, and Washington.
- ¹⁴⁷ Nat’l Conference of Comm’r on Unif. State Laws, *supra*.
- ¹⁴⁸ Kearl, *supra*.
- ¹⁴⁹ Seven out of ten deaths occur in an institutionalized setting. *Id.*

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- ¹⁵⁰ Mitford, *supra* at 14-18.
- ¹⁵¹ Robert C. Mayer, *Embalming: History, Theory, and Practice* 31 (5th ed. 2012).
- ¹⁵² *History of Death: Death in Ancient Civilisations, supra*.
- ¹⁵³ *Id.*
- ¹⁵⁴ King, *supra* at 65.
- ¹⁵⁵ *History of Death: Death in Ancient Civilisations, supra*.
- ¹⁵⁶ *Id.*
- ¹⁵⁷ *Id.*
- ¹⁵⁸ *Id.*
- ¹⁵⁹ *Id.*
- ¹⁶⁰ King, *supra* at 66.
- ¹⁶¹ *Id.*
- ¹⁶² *Id.* at 67.
- ¹⁶³ Mary Roach, *Stiff: The Curious Lives of Human Cadavers* 78 (2004).
- ¹⁶⁴ Gary M. Laderman, *Civil War, U.S.*, Encyclopedia of Death & Dying, <http://www.deathreference.com/Ce-Da/Civil-War-U-S.html> (last visited Nov. 11, 2014).
- ¹⁶⁵ King, *supra* at 86.
- ¹⁶⁶ Tanya D. Marsh, *Introduction to the Law of the Dead* in *The American Law of the Dead 2* (unpublished manuscript) [hereinafter Marsh, *Introduction to the Law of the Dead*].
- ¹⁶⁷ Roach, *supra* at 81.
- ¹⁶⁸ King, *supra* at 65.
- ¹⁶⁹ Marsh, *Introduction to the Law of the Dead, supra* at 2.
- ¹⁷⁰ *Id.*
- ¹⁷¹ *Id.*
- ¹⁷² *Id.*
- ¹⁷³ “The United States, and probably most of the societies in the West, is a death-denying/defying society where even the idiom of expression is that of resistance. People vow not to go gently into the good night . . . or conjure images of fighting illness, or fighting the enemy, death” Gire, *supra*.
- ¹⁷⁴ Kearl, *supra*.
- ¹⁷⁵ This “tradition” is relatively new, having existed for only about a century and a half. Roach, *supra* at 76.

¹⁷⁶ A claim professed by the funeral industry. *Id.*
¹⁷⁷ *Id.*
¹⁷⁸ *Id.*
¹⁷⁹ Mitford, *supra* at 14-18.
¹⁸⁰ Kearl, *supra*.
¹⁸¹ Marsh, *Introduction to the Law of the Dead, supra* at 1.
¹⁸² It should be noted that remains may be buried after cremation.
¹⁸³ Marsh, *Introduction to the Law of the Dead, supra* at 3.
¹⁸⁴ *Id.*
¹⁸⁵ *Id.*
¹⁸⁶ *Id.*
¹⁸⁷ *Id.* at 1.
¹⁸⁸ *Id.* at 3.
¹⁸⁹ King, *supra* at 110.
¹⁹⁰ *Id.*
¹⁹¹ *Id.*
¹⁹² King, *supra* at 111.
¹⁹³ King, *supra* at 112.
¹⁹⁴ *Id.*
¹⁹⁵ King, *supra* at 114.
¹⁹⁶ Roach, *supra* at 253.
¹⁹⁷ *Id.*
¹⁹⁸ *Id.* at 252.
¹⁹⁹ *Id.* at 253.
²⁰⁰ *Id.*
²⁰¹ King, *supra* at 113.
²⁰² Roach, *supra* at 261.
²⁰³ *Id.*
²⁰⁴ *Id.* at 262.
²⁰⁵ 45 C.F.R. § 46.101(a).
²⁰⁶ 45 C.F.R. § 46.1.

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- ²⁰⁷ 45 C.F.R. § 46.102(f).
- ²⁰⁸ *Id.*
- ²⁰⁹ Rebecca L. Walker et al., *Genomic Research with the Newly Dead: A Crossroads for Ethics and Policy*, 42 J.L. Med. & Ethics 220, 225 (Summer 2014).
- ²¹⁰ 21 U.S.C. § 301.
- ²¹¹ 21 C.F.R. § 50.1(a).
- ²¹² 21 C.F.R. § 50.3(g).
- ²¹³ Encyclopædia Britannica Inc., *Anatomy*, Encyclopædia Britannica Online Adac. Edition (Aug. 26, 2014), <http://www.britannica.com/EBchecked/topic/22980/anatomy?anchor=ref281415>.
- ²¹⁴ *Id.*
- ²¹⁵ Roach, *supra* at 39-40.
- ²¹⁶ *Id.* at 40.
- ²¹⁷ *Id.*
- ²¹⁸ Encyclopædia Britannica Inc., *Herophilus*, Encyclopædia Britannica Online Acad. Ed., <http://www.britannica.com/EBchecked/topic/263634/Herophilus> (last visited Nov. 11, 2014).
- ²¹⁹ Roach, *supra* at 40.
- ²²⁰ *Id.*
- ²²¹ Encyclopædia Britannica Inc., *Anatomy*, *supra*.
- ²²² Vivian Nutton, *Galen of Pergamum*, Encyclopædia Britannica Online Acad. Ed. (Sept. 8, 2014) <http://www.britannica.com/EBchecked/topic/223895/Galen-of-Pergamum>.
- ²²³ Encyclopædia Britannica Inc., *Anatomy*, *supra*.
- ²²⁴ *Id.*
- ²²⁵ *Id.*
- ²²⁶ Marcel Florkin, *Andreas Vesalius*, Encyclopædia Britannica Online Acad. Ed. (July 21, 2014) <http://www.britannica.com/EBchecked/topic/626818/AndreasVesalius/225346/Life?anchor=ref258143>.
- ²²⁷ Encyclopædia Britannica Inc., *Anatomy*, *supra*.
- ²²⁸ Florkin, *Andreas Vesalius*, *supra*.
- ²²⁹ Encyclopædia Britannica Inc., *Anatomy*, *supra*.
- ²³⁰ Roach, *supra* at 40.
- ²³¹ *Daniel* 12:2.

²³² 1 *Kings* 17:20-23.

²³³ 2 *Kings* 4:35.

²³⁴ *Kings* 13:21.

²³⁵ *Acts* 9:40-41.

²³⁶ *Acts* 20:10-12.

²³⁷ *Matthew* 9:25.

²³⁸ *John* 11:43-44.

²³⁹ *Luke* 7:13-15.

²⁴⁰ *Matthew* 27:52-53.

²⁴¹ “And the angel answered and said unto the women, Fear not ye: for I know that ye seek Jesus, which was crucified. He is not here: for he is risen, as he said. Come, see the place where the Lord lay. And go quickly, and tell his disciples that he is risen from the dead.” *Matthew* 28:5-7; *see also Mark* 16:1-8; *Luke* 24:1-11; *John* 20:1-10.

²⁴² Catholic Answers, *Resurrection of the Body*, <http://www.catholic.com/tracts/resurrection-of-the-body> (last visited Nov. 11, 2014) (quoting 1 Cor. 15:13–18).

²⁴³ *Id.*

²⁴⁴ *Id.*

²⁴⁵ *Id.*

²⁴⁶ Roach, *supra* at 41.

²⁴⁷ *Id.*

²⁴⁸ King, *supra* at 31.

²⁴⁹ *Id.*

²⁵⁰ *Id.*

²⁵¹ *Id.*

²⁵² *Id.*

²⁵³ Roach, *supra* at 44.

²⁵⁴ *Id.* at 46.

²⁵⁵ *Id.* at 44.

²⁵⁶ King, *supra* at 31.

²⁵⁷ Roach, *supra* at 44.

²⁵⁸ *Id.* at 43.

²⁵⁹ *Id.*

²⁶⁰ *Id.* at 42.

²⁶¹ “Seventeenth century surgeon-anatomist William Harvey, famous for discovering the human circulatory system, . . . dissect[ed] his own father and sister.” *Id.*

²⁶² It should be noted that this remains an issue for medical students under Taliban rule even today; “In a strict interpretation of Koranic edicts regarding the dignity of the human body, Taliban clerics forbid medical instructors to dissect cadavers or use skeletons—even those of non-Muslims, a practice other Islamic countries often allow—to teach anatomy.” One student at Kandahar Medical College exhumed his grandmother’s remains and shared with classmates; another did so with his neighbor’s remains. *Id.*

²⁶³ Roach, *supra* at 43.

²⁶⁴ King, *supra* at 32.

²⁶⁵ Roach, *supra* at 43.

²⁶⁶ King, *supra* at 32-33.

²⁶⁷ *Id.* at 32.

²⁶⁸ Bess Lovejoy, *The Gory New York City Riot that Shaped American Medicine* (June 17, 2014), <http://www.smithsonianmag.com/history/gory-new-york-city-riot-shaped-american-medicine-180951766/?no-ist>.

²⁶⁹ *Id.*

²⁷⁰ *Id.*

²⁷¹ Whitfield J. Bell, Jr., *Doctors’ Riot, New York, 1788*, 47 *Bul. N.Y. Acad. Med.* 1501 (Dec. 1971).

²⁷² *Id.* at 1501-02.

²⁷³ King, *supra* at 33.

²⁷⁴ *Id.*

²⁷⁵ *Id.*

²⁷⁶ *Id.*

²⁷⁷ *Id.*

²⁷⁸ *Id.* at 34.

²⁷⁹ *Id.* at 33.

²⁸⁰ *Id.*

²⁸¹ *Id.* at 34.

²⁸² *Id.* at 33.

²⁸³ *Id.*

²⁸⁴ *Id.*

²⁸⁵ *Id.*

²⁸⁶ Joel Feinberg, *The Mistreatment of Dead Bodies*, 15 *Hastings Center Rep.* 31 (Feb., 1985).

²⁸⁷ King, *supra* at 35.

²⁸⁸ *Id.*

²⁸⁹ *Id.*

²⁹⁰ *Id.*

²⁹¹ This section was substantially derived from Catherine M. Hammack, *Practice Makes Problems: Practicing Medical Procedures Post-Mortem* in Tanya D. Marsh (ed.), *Grave New World: Readings in Modern American Funeral and Cemetery Law* (forthcoming).

²⁹² Kenneth V. Iserson, *Case: Practicing Procedures on the Newly Dead*, *Ethics In Emergency Med.* (2nd ed., 1995), available at <https://galenpress.com/extras/extra20.htm> (last visited Nov. 11, 2014).

²⁹³ Roach, *supra* at 27.

²⁹⁴ *Id.* at 19.

²⁹⁵ *Id.* at 20.

²⁹⁶ *Id.*

²⁹⁷ *Id.*

²⁹⁸ *Id.* at 31.

²⁹⁹ Am. Coll. of Emergency Physicians Ethics Comm., *Teaching Procedures Using the Newly Dead* (Jan. 2003), <https://www.acep.org/Clinical---Practice-Management/Teaching-Procedures-Using-the-Newly-Dead/>.

³⁰⁰ *Id.*

³⁰¹ Kenneth V. Iserson, *Postmortem Procedures in the Emergency Department: Using the Recently Dead to Practise and Teach*, 19 *J. Med. Ethics* 92, 93 (1993).

³⁰² Iserson, *Case: Practicing Procedures on the Newly Dead*, *supra*.

³⁰³ *Id.*

³⁰⁴ *Id.*

³⁰⁵ Iserson, *Postmortem Procedures in the Emergency Department: Using the Recently Dead to Practise and Teach*, *supra* at 93.

³⁰⁶ *Id.*

³⁰⁷ Iserson, *Case: Practicing Procedures on the Newly Dead*, *supra*.

³⁰⁸ *Id.*

³⁰⁹ *Id.*

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- ³¹⁰ Iserson, *Postmortem Procedures in the Emergency Department: Using the Recently Dead to Practise and Teach*, *supra* at 94.
- ³¹¹ *Id.*
- ³¹² Iserson, *Case: Practicing Procedures on the Newly Dead*, *supra*.
- ³¹³ Jeffrey T. Berger et al., *Ethics of Practicing Medical Procedures on Newly Dead and Nearly Dead Patients*, 17 J. Gen. Internal Med. 774, 777 (Oct. 2002).
- ³¹⁴ Roach, *supra* at 45 (quoting Sir Astley Cooper in Select Committee on Anatomy, Report, 1828, H.C., ¶ 14 (U.K.)).
- ³¹⁵ Berger, *supra* at 775.
- ³¹⁶ Peter Pressman, *Practicing Medicine on the Newly Deceased: A Dilemma in Medical Ethics* (Oct. 12, 2014), <http://neurology.about.com/od/Coping/fl/Practicing-on-the-Newly-Deceased.htm>.
- ³¹⁷ Christine Kuehn Kelly, *Is it OK to 'Practice' on Patients Who Have Just Died?*, Am. C. of Physicians Observer (April 2003), <http://www.acpinternist.org/archives/2003/04/residents.htm> (quoting Kenneth Iserson).
- ³¹⁸ King, *supra* at 67.
- ³¹⁹ *Id.*
- ³²⁰ *Id.*
- ³²¹ Marsh, *Introduction to the Law of the Dead*, *supra* at 2.
- ³²² King, *supra* at 67.
- ³²³ *Id.*
- ³²⁴ *Id.*
- ³²⁵ *Id.*
- ³²⁶ *Id.* at 67-68.
- ³²⁷ *Id.* at 68.
- ³²⁸ *Id.* at 69.
- ³²⁹ *Id.*
- ³³⁰ *Id.*
- ³³¹ *Id.*
- ³³² *Id.*
- ³³³ *Id.* at 70.
- ³³⁴ Inst. for Plastination, *Exhibitions: The Original*, http://www.bodyworlds.com/en/exhibitions/original_copycat.html (last visited Nov. 11, 2014).

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- ³³⁵ King, *supra* at 70.
- ³³⁶ BODY WORLDS Amsterdam, *What is Plastination?*, FAQ, <http://bodyworlds.nl/faq/> (last visited Nov. 11, 2014).
- ³³⁷ King, *supra* at 70.
- ³³⁸ Inst. for Plastination, *Exhibitions: The Original*, *supra*.
- ³³⁹ BODY WORLDS Amsterdam, *BODY WORLDS: The Happiness Project*, <http://bodyworlds.nl/body-worlds-the-happiness-project-en/> (last visited Nov. 11, 2014).
- ³⁴⁰ King, *supra* at 70.
- ³⁴¹ *Id.*
- ³⁴² *Id.*
- ³⁴³ Inst. for Plastination, *Exhibitions: Questions and Answers*, http://www.bodyworlds.com/en/exhibitions/questions_answers.html (last visited Nov. 11, 2014).
- ³⁴⁴ *Id.*
- ³⁴⁵ *Id.*
- ³⁴⁶ *Id.*
- ³⁴⁷ *Id.*
- ³⁴⁸ King, *supra* at 70.
- ³⁴⁹ Inst. for Plastination, *Exhibitions: Unparalleled Success*, http://www.bodyworlds.com/en/exhibitions/unparalleled_success.html (last visited Nov. 11, 2014).
- ³⁵⁰ Inst. for Plastination, *Exhibitions: The Original*, *supra*.
- ³⁵¹ *Id.*
- ³⁵² Ethics Advisory Comm. of the Cal. Science Ctr., *Summary of Ethical Review: Body Worlds: An Anatomical Exhibition of Real Human Bodies 4* (Nov. 30, 2009), available at http://www.bodyworlds.com/Downloads/englisch/Media/Press%20Kit/BW_LA_SummaryofEthicalReview.pdf.
- ³⁵³ Hilary Young, *The Right to Posthumous Bodily Integrity and Implications of Whose Right it Is*, 14 Marq. Elder's Advisor 197, 199 (Spring 2013).
- ³⁵⁴ King, *supra* at 71.
- ³⁵⁵ *Id.*
- ³⁵⁶ Inst. for Plastination, *Exhibitions: The Original*, *supra*.
- ³⁵⁷ Inst. for Plastination, *The History of Our Body Donation Program*, <http://www.koerperspende.de/en.html> (last visited Nov. 11, 2014).
- ³⁵⁸ Inst. for Plastination, *Exhibitions: The Original*, *supra*.

³⁵⁹ *Id.*

³⁶⁰ *Id.*

³⁶¹ Young, *supra* at 199.

³⁶² *Id.* at 198.

³⁶³ *Id.*

³⁶⁴ King, *supra* at 70.

³⁶⁵ Young, *supra* at 198.

³⁶⁶ *Id.*

³⁶⁷ *Id.*

³⁶⁸ It should be noted that “[a]lthough bodies are rendered anonymous by removing skin, hair, and other identifying features, families could object to the very idea of their loved one’s remains suffering this fate.” *Id.*

³⁶⁹ *Id.*

³⁷⁰ Ethics Advisory Comm. of the Cal. Science Ctr., *supra* at 9.

³⁷¹ Roach, *supra* at 87.

³⁷² Lee Vinsel, *Doctors Inventing Auto Safety*, Bright Ideas: The Smithsonian’s Lemelson Center for the Study of Invention & Innovation (Aug. 2, 2013) <http://blog.invention.smithsonian.org/about-the-lemelson-center/#sthash.8MsBU20j.dpuf>.

³⁷³ Crash simulators are “front halves of cars on machine-accelerated sleds that are stopped abruptly to mimic the forces of a head-on collision.” Roach, *supra* at 91.

³⁷⁴ *Id.* at 87.

³⁷⁵ *Id.*

³⁷⁶ *Id.* at 91.

³⁷⁷ *Id.* at 92.

³⁷⁸ *Id.*

³⁷⁹ *Id.*

³⁸⁰ Albert Kind, *Humanitarian Benefits of Cadaver Research on Injury Prevention*, 38 J. of Trauma 564 (1995).

³⁸¹ Roach, *supra* at 92.

³⁸² *Id.* at 99.

³⁸³ *Id.* at 87.

³⁸⁴ *Id.* at 99.

³⁸⁵ *Id.* at 98-99.

³⁸⁶ *Id.* at 97.

³⁸⁷ *Id.* at 100.

³⁸⁸ *Id.* at 97.

³⁸⁹ *Id.* at 87.

³⁹⁰ *Id.* at 97.

³⁹¹ *Id.* at 99.

³⁹² *Id.*

³⁹³ *Id.* at 132.

³⁹⁴ *Id.*

³⁹⁵ *Id.*

³⁹⁶ *Id.*

³⁹⁷ *Id.*

³⁹⁸ *Id.* at 131.

³⁹⁹ *Id.* at 132.

⁴⁰⁰ *Id.* at 131.

⁴⁰¹ *Id.*

⁴⁰² *Id.*

⁴⁰³ *Id.* at 132.

⁴⁰⁴ *Id.* at 131.

⁴⁰⁵ *Id.* at 133.

⁴⁰⁶ *Id.*

⁴⁰⁷ *Id.*

⁴⁰⁸ *Id.*

⁴⁰⁹ *Id.* at 133-34.

⁴¹⁰ *Id.* at 132.

⁴¹¹ *Id.*

⁴¹² *Id.* at 132-33.

⁴¹³ *Id.* at 142.

⁴¹⁴ *Id.* at 143.

⁴¹⁵ It should be noted that manufacturers of body armor do not test their products on cadavers. *Id.* at 144.

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- ⁴¹⁶ *Id.*
- ⁴¹⁷ *Id.* at 145.
- ⁴¹⁸ *Id.* at 150.
- ⁴¹⁹ *Id.*
- ⁴²⁰ *Id.*
- ⁴²¹ *Id.* at 149.
- ⁴²² *Id.* at 150.
- ⁴²³ U.S. Army Inst. of Surgical Research, *ATC-8199, Final Report of the Lower Extremity Assessment Program (LEAP 99-2)* iii (Aug. 2000).
- ⁴²⁴ Roach, *supra* at 149.
- ⁴²⁵ U.S. Army Inst. of Surgical Research, *supra* at 4.
- ⁴²⁶ *Id.*
- ⁴²⁷ It should be noted that the uniform's purpose was not only to provide realism, but also to "[confer] a measure of respect." Roach, *supra* at 150.
- ⁴²⁸ *Id.*
- ⁴²⁹ *Id.*
- ⁴³⁰ U.S. Army Inst. of Surgical Research, *supra* at 5.
- ⁴³¹ *Id.*
- ⁴³² *Id.*
- ⁴³³ *Tulane Gave Donated Bodies to Army for Land Mine Tests* (Mar. 11, 2004) http://usatoday30.usatoday.com/news/nation/2004-03-11-cadavers-tulane_x.htm.
- ⁴³⁴ Roach, *supra* at 148.
- ⁴³⁵ *Id.*
- ⁴³⁶ *Id.* at 152.
- ⁴³⁷ *Id.*
- ⁴³⁸ *Id.* at 151.
- ⁴³⁹ Univ. of Tenn. Knoxville, *The Forensic Anthropology Center*, <http://fac.utk.edu/> (last visited Nov. 11, 2014).
- ⁴⁴⁰ *Body Farm* (Nat'l Geographic Soc'y), <http://video.nationalgeographic.com/video/body-farm-sci> (last visited Nov. 11, 2013).

⁴⁴¹ Simon Tomlinson, *Inside the 'Body Farm' Where Corpses are Left Outside to Decompose for Forensic Researchers to Study* (Nov. 20, 2012), <http://www.dailymail.co.uk/news/article-2235692/Inside-body-farm-corpses-left-outside-decompose-forensic-researchers-study.html#ixzz3D3Ic4hK>.

⁴⁴² Roach, *supra* at 88.

⁴⁴³ *Id.* at 93-94.

⁴⁴⁴ *Id.* at 94.

⁴⁴⁵ *Id.* at 144.

⁴⁴⁶ *Id.*

⁴⁴⁷ *Id.* at 95.

⁴⁴⁸ *Id.* at 134-35.

⁴⁴⁹ *Id.* at 135.

⁴⁵⁰ *Id.*

⁴⁵¹ *Id.*

⁴⁵² *Id.* at 134.

⁴⁵³ *Id.*

⁴⁵⁴ *Id.* at 152.

⁴⁵⁵ *Id.* at 139.

⁴⁵⁶ *Id.*

⁴⁵⁷ *Id.*

⁴⁵⁸ *Id.* at 151.

⁴⁵⁹ *Id.* at 152.

⁴⁶⁰ *Id.* at 104.

⁴⁶¹ *Id.* at 106.

⁴⁶² *Id.* at 107.

⁴⁶³ *Id.* at 105.

⁴⁶⁴ *Id.* at 104-05.

⁴⁶⁵ *Id.* at 150.

⁴⁶⁶ Marsh, *Introduction to the Law of the Dead*, *supra* at 1.

⁴⁶⁷ Elizabeth E. Appel Blue, *Redefining Stewardship Over Body Parts*, 21 J.L. & Health 75, 105 (2008).

⁴⁶⁸ Marsh, *Introduction to the Law of the Dead*, *supra* at 1.

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- ⁴⁶⁹ Appel Blue, *supra* at 105.
- ⁴⁷⁰ Marsh, *Limitations on Treatment of Human Remains*, *supra* at 5-6.
- ⁴⁷¹ Marsh, *The Right and Duty to Possess Human Remains* in *The American Law of the Dead* 1 (unpublished manuscript) [hereinafter Marsh, *The Right and Duty to Possess Human Remains*].
- ⁴⁷² Tanya D. Marsh, *Historical Background* in *The American Law of the Dead* 9 (unpublished manuscript) [hereinafter Marsh, *Historical Background*].
- ⁴⁷³ *Id.*
- ⁴⁷⁴ Mark Pawlowski, *Property in Body Parts and Products of the Human Body*, 30 *Liverpool L. Rev.* 35, 36 (Apr. 2009).
- ⁴⁷⁵ Pawlowski, *supra* at 36, n. 5, quoting Percival E. Jackson, *The Law of Cadavers and of Burial Places* 126 (2nd ed. 1950).
- ⁴⁷⁶ Marsh, *Limitations on Treatment of Human Remains*, *supra* at 7.
- ⁴⁷⁷ *Id.*
- ⁴⁷⁸ *Id.*
- ⁴⁷⁹ Pawlowski, *supra* at 36, n. 5, quoting Percival E. Jackson, *The Law of Cadavers and of Burial Places* 126 (2nd ed. 1950).
- ⁴⁸⁰ Pawlowski, *supra* at 36.
- ⁴⁸¹ Tanya D. Marsh, *Legal Status of Human Remains* in *The American Law of the Dead* 1 (unpublished manuscript) [hereinafter Marsh, *Legal Status of Human Remains*].
- ⁴⁸² Pawlowski, *supra* at 36.
- ⁴⁸³ *Id.*
- ⁴⁸⁴ Marsh, *Historical Background*, *supra* at 1.
- ⁴⁸⁵ Marsh, *The Right and Duty to Possess Human Remains*, *supra* at 1.
- ⁴⁸⁶ *Id.*
- ⁴⁸⁷ *Id.*
- ⁴⁸⁸ *Id.* at 1-2.
- ⁴⁸⁹ *Id.*
- ⁴⁹⁰ *Id.* at 10.
- ⁴⁹¹ *Id.* at 7-10.
- ⁴⁹² Appel Blue, *supra* at 105.
- ⁴⁹³ *Louisville & N.R.R. v. Wilson*, 51 S.E. 24, 25 (Ga. 1905).
- ⁴⁹⁴ Walter F. Kuzenski, *Property in Dead Bodies*, 9 *Marq. L. Rev.* 17 (Dec. 1924).

⁴⁹⁵ *Id.* at 19.

⁴⁹⁶ Erin Collieran, Comment, *My Body, His Property?: Prescribing a Framework to Determine Ownership Interests in Directly Donated Human Organs*, 80 Temp. L. Rev. 1203 (Winter 2007).

⁴⁹⁷ Pawlowski, *supra* at 36.

⁴⁹⁸ Marsh, *Legal Status of Human Remains*, *supra* at 1.

⁴⁹⁹ Kuzenski, *supra* at 18.

⁵⁰⁰ Marsh, *Legal Status of Human Remains*, *supra* at 1.

⁵⁰¹ *Id.*

⁵⁰² *Id.*

⁵⁰³ Apple Blue, *supra* at 106.

⁵⁰⁴ Lisa Milot, *What are We: Laborers, Factories, or Spare Parts? The Tax Treatment of Transfers of Human Body Materials*, 67 Wash. & Lee L. Rev. 1053, 1083 (Summer 2010).

⁵⁰⁵ Ironically, under American statutory law, the bodies of certain *living* bodies *were* property, and personal ownership of them was legally protected. Thus, prior to the enactment and ratification of the Fourteenth Amendment, “while a slave was alive, he was property, but when he died, his corpse was not.” Marsh, *Legal Status of Human Remains*, *supra* at 4. Of course, “[s]ince the abolition of slavery in 1865, and the subsequent adoption of the Fourteenth Amendment, property rights have not existed in *living* human bodies. Instead, the interests we have in our bodies are formulated as liberty interests, protected by substantive due process.” Milot, *supra* at 1082 (emphasis added).

⁵⁰⁶ Milot, *supra* at 1083.

⁵⁰⁷ *Id.*

⁵⁰⁸ *Id.*

⁵⁰⁹ Kuzenski, *supra* at 17.

⁵¹⁰ *Id.*

⁵¹¹ Milot, *supra* at 1084.

⁵¹² *Id.*

⁵¹³ Marsh, *Legal Status of Human Remains*, *supra* at 9.

⁵¹⁴ Appel Blue, *supra* at 106-07.

⁵¹⁵ *Id.* at 107.

⁵¹⁶ *Id.*

⁵¹⁷ Marsh, *Legal Status of Human Remains*, *supra* at 9 (quoting William Prosser, *The Law of Torts* 58-59 (4th ed., 1971)).

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- ⁵¹⁸ Appel Blue, *supra* at 107.
- ⁵¹⁹ *Id.* at 106.
- ⁵²⁰ *Id.*
- ⁵²¹ Milot, *supra* at 1088.
- ⁵²² Young, *supra* at 214.
- ⁵²³ *Id.* at 264.
- ⁵²⁴ *Id.* at 234.
- ⁵²⁵ *Id.*
- ⁵²⁶ B. C. Ricketts, Annotation, *Validity and Effect of Testamentary Direction as to Disposition of Testator's Body*, 7 A.L.R. 3rd § 1(a) (1966).
- ⁵²⁷ *Id.* § 1(b).
- ⁵²⁸ Young, *supra* at 247.
- ⁵²⁹ Dorothy Nelkin & Lori Andrews, *Do the Dead Have Interests? Policy Issues for Research After Life*, 24 Am. J. L. & Med. 261 (1998); Young, *supra*.
- ⁵³⁰ Unif. Anatomical Gift Act (amended 2006).
- ⁵³¹ Marjorie A. Shields, Annotation, *Validity and Application of Uniform Anatomical Gift Act*, 6 A.L.R. 6th 365 (2005).
- ⁵³² *Id.*
- ⁵³³ Young, *supra* at 235.
- ⁵³⁴ *Id.* at 236.
- ⁵³⁵ Unif. Anatomical Gift Act § 8 (2006).
- ⁵³⁶ *Id.* § 7.
- ⁵³⁷ *Id.* §§ 7-9.
- ⁵³⁸ Young, *supra* at 237.
- ⁵³⁹ The question of whether the dead can or cannot be harmed is beyond the scope of this paper, and the literature analyzing this issue is endless.
- ⁵⁴⁰ Young, *supra* at 200-01.
- ⁵⁴¹ *Id.*
- ⁵⁴² Marsh, *Limitations on Treatment of Human Remains*, *supra* at 3.
- ⁵⁴³ *Id.*
- ⁵⁴⁴ Young, *supra* at 201.
- ⁵⁴⁵ *Id.*

⁵⁴⁶ *Id.*

⁵⁴⁷ *Id.*

⁵⁴⁸ Young, *supra* at 264.

⁵⁴⁹ Young, *supra* at 214.

⁵⁵⁰ Feinberg, *The Mistreatment of Dead Bodies, supra* at 32.

⁵⁵¹ Marsh, *Limitations on Treatment of Human Remains, supra* at 8.

⁵⁵² *Id.* at 9.

⁵⁵³ *Id.* at 8 (emphasis added).

⁵⁵⁴ *Id.*

⁵⁵⁵ *Id.*

⁵⁵⁶ Marsh, *Legal Status of Human Remains, supra* at 12.

⁵⁵⁷ *Id.* at 11-12.

⁵⁵⁸ *Id.* at 10.

⁵⁵⁹ *About*, <https://www.etsy.com/about?ref=about> (last visited Dec. 1, 2014).

⁵⁶⁰ Lauren Engelhardt, *Policy Update: Changes to the Prohibited Items List*, Etsy News Blog (Aug. 08, 2012), <https://blog.etsy.com/news/2012/policy-update-changes-to-the-prohibited-items-list/>.

⁵⁶¹ *Id.*

⁵⁶² *Id.*

⁵⁶³ *Who We Are*, http://www.ebayinc.com/who_we_are/one_company (last visited Nov. 11, 2014).

⁵⁶⁴ Ryan M. Seidemann et al., *The Identification of a Human Skull Recovered from an eBay Sale*, 54 J. Forensic Sci. 1247, 1248 (Nov. 2009).

⁵⁶⁵ Marsh, *Legal Status of Human Remains, supra* at 11.

⁵⁶⁶ *Id.*

⁵⁶⁷ Seidemann et al., *supra* at 1248.

⁵⁶⁸ Marsh, *Legal Status of Human Remains, supra* at 11.

⁵⁶⁹ Seidemann et al., *supra* at 1248.

⁵⁷⁰ *Id.*

⁵⁷¹ *Id.*

⁵⁷² Mont. Code Ann. § 22-3-801 (West).

⁵⁷³ Marsh, *Legal Status of Human Remains, supra* at 12.

⁵⁷⁴ Science Care, Inc., *FAQs*, Whole Body Donation Program Summary, http://www.sciencecare.com/whole_body_donation_faq/ (last visited Nov. 11, 2014).

⁵⁷⁵ Tanya D. Marsh, *Rethinking Laws Permitting the Sales of Human Remains*, The Huffington Post, The Blog (Aug. 13, 2012), http://www.huffingtonpost.com/tanya-d-marsh/laws-permitting-human-remains_b_1769082.html.

⁵⁷⁶ Young, *supra* at 202.

⁵⁷⁷ It should be noted that the question of the rights-holder does not necessarily preclude others—such as the decedent’s family or the public—from having other interests (or possibly rights) in remains.

⁵⁷⁸ “Rights are notoriously difficult to define and are conceptualized differently by different scholars.” Young, *supra* at 207.

⁵⁷⁹ According to Joel Feinberg, “[t]o have a right is to have a claim *to* something and *against* someone, the recognition of which is called for by legal rules or, in the case of moral rights, by the principles of an enlightened conscience.” Joel Feinberg, *The Rights of Animals and Unborn Generations*, in *Rights, Justice, and the Bounds of Liberty* 43-44 (1980).

⁵⁸⁰ Young, *supra* at 207-11.

⁵⁸¹ Young, *supra* at 210.

⁵⁸² It should be noted that although “having interests is the basis for having legal rights,” “having interests may not be a sufficient condition for having legal rights” *Id.*

⁵⁸³ Young, *supra* at 208.

⁵⁸⁴ *Id.*

⁵⁸⁵ *Id.*

⁵⁸⁶ Feinberg, *Harm to Others*, *supra* at 177.

⁵⁸⁷ Ernest Partridge, *Posthumous Interests and Posthumous Respect*, 91 *Ethics* 243, 244 (1981).

⁵⁸⁸ Young, *supra* at 210.

⁵⁸⁹ Matthew H. Kramer, *Do Animals and Dead people Have Legal Rights?*, 14 *Can. J. L. & Juris* 30 (2001).

⁵⁹⁰ Smolensky, *supra* at 774.

⁵⁹¹ *Id.*

⁵⁹² *Id.*

⁵⁹³ *Id.* at 768.

⁵⁹⁴ *Id.*

⁵⁹⁵ Kramer, *supra* at 30.

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- ⁵⁹⁶ *Id.*
- ⁵⁹⁷ Young, *supra* at 208.
- ⁵⁹⁸ *Id.* at 203.
- ⁵⁹⁹ *Id.* at 32.
- ⁶⁰⁰ *Id.* at 265-66.
- ⁶⁰¹ *Id.* at 264.
- ⁶⁰² *Id.* at 202.
- ⁶⁰³ *Id.* at 203.
- ⁶⁰⁴ *Id.*
- ⁶⁰⁵ *Id.*
- ⁶⁰⁶ *Id.* at 206.
- ⁶⁰⁷ *Id.* at 211.
- ⁶⁰⁸ *Id.* at 211-12.
- ⁶⁰⁹ *Id.*
- ⁶¹⁰ *Id.* at 213.
- ⁶¹¹ *Id.*
- ⁶¹² *Id.* at 212.
- ⁶¹³ *Id.*
- ⁶¹⁴ *Id.* at 213.
- ⁶¹⁵ *Id.*
- ⁶¹⁶ *Id.*
- ⁶¹⁷ *Id.* (emphasis added).
- ⁶¹⁸ *Id.* at n. 63.
- ⁶¹⁹ *Id.* at 213-14.
- ⁶²⁰ *Id.* at n. 63.
- ⁶²¹ *Id.*
- ⁶²² Alexandra K. Glazier, “*The Brain Dead Patient Was Kept Alive*” and Other Disturbing Misconceptions; *A Call for Amendments to the Uniform Anatomical Gift Act*, 9 Kan. J.L. & Pub. Pol’y 645 (Summer 2000).
- ⁶²³ Glazier, *supra* at 649.
- ⁶²⁴ *Id.*

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- ⁶²⁵ N.C. Gen. Stat. Ann. § 32A-25.1 (West).
- ⁶²⁶ *Id.*
- ⁶²⁷ *Id.*
- ⁶²⁸ *Id.*
- ⁶²⁹ Glazier, *supra* at 649.
- ⁶³⁰ Mark R. Wicclair & Michael DeVita, *Oversight of Research Involving the Dead*, 14 Kennedy Inst. Ethics J. 143, 144-45 (2004).
- ⁶³¹ *Id.* at 145.
- ⁶³² *Id.*
- ⁶³³ *Id.*
- ⁶³⁴ President's Comm'n for the Study of Ethical Problems in Med. & Biomedical & Behavioral Research, *Research Involving the Comatose and Cadavers in Implementing Human Research Regulations* 39-41 (1983).
- ⁶³⁵ Council on Ethical & Judicial Affairs of the Am. Med. Ass'n, *Performing Procedures on the Newly Deceased*, 77 Acad. Med. 1212, 1213 (Dec. 2002).
- ⁶³⁶ *Id.*
- ⁶³⁷ Unif. Anatomical Gift Act §§ 7-9 (2006).
- ⁶³⁸ *Id.* §§ 7-8.
- ⁶³⁹ N.C. Gen. Stat. Ann. § 130A-33.30 (West).
- ⁶⁴⁰ *Id.*
- ⁶⁴¹ N.C. Gen. Stat. Ann. § 130A-415 (West).
- ⁶⁴² Wicclair & DeVita, *supra* at 146.
- ⁶⁴³ *Id.*
- ⁶⁴⁴ *Id.*
- ⁶⁴⁵ *Id.*
- ⁶⁴⁶ *Id.* at 149.
- ⁶⁴⁷ *Id.* at 143.
- ⁶⁴⁸ *Id.* at 144.
- ⁶⁴⁹ *Id.*
- ⁶⁵⁰ *Id.* at 145.
- ⁶⁵¹ *Id.*
- ⁶⁵² *Id.*
- ⁶⁵³ *Id.*

⁶⁵⁴ *Id.* at 147.

⁶⁵⁵ *Id.*

⁶⁵⁶ *Id.*

⁶⁵⁷ *Id.*

⁶⁵⁸ *Id.*

⁶⁵⁹ *Id.*

⁶⁶⁰ *Id.*

⁶⁶¹ *Id.* at 148.

⁶⁶² *Id.*

⁶⁶³ *Id.*

⁶⁶⁴ *Id.* at 149.

⁶⁶⁵ *Id.*

⁶⁶⁶ *Id.*

⁶⁶⁷ Appel Blue, *supra* at 87.

⁶⁶⁸ *Id.* at 86-87.

⁶⁶⁹ *Id.* at 87.

⁶⁷⁰ *Id.* at 86.

⁶⁷¹ *Id.* at 87.

⁶⁷² *Id.* at 86.

⁶⁷³ *Id.* at 87.

⁶⁷⁴ *Id.* at 91.

⁶⁷⁵ *Id.*

⁶⁷⁶ *Id.*

⁶⁷⁷ *Id.*

⁶⁷⁸ *Id.* at 113.

⁶⁷⁹ *Id.* at 112.

⁶⁸⁰ Marsh, *Limitations on Treatment of Human Remains, supra* at 3.

⁶⁸¹ *Id.* at 4.

⁶⁸² *Id.*

⁶⁸³ *Id.*

⁶⁸⁴ *Id.*

⁶⁸⁵ *Id.*

⁶⁸⁶ *Id.* at 1.

⁶⁸⁷ *Id.* at 7.

⁶⁸⁸ *Id.* at 12.

⁶⁸⁹ Feinberg, *The Mistreatment of Dead Bodies*, *supra* at 32.

⁶⁹⁰ Young, *supra* at 201.

⁶⁹¹ Marsh, *Limitations on Treatment of Human Remains*, *supra* at 7.

⁶⁹² *Id.*

⁶⁹³ Young, *supra* at 201.

⁶⁹⁴ *Id.* at n. 63.

⁶⁹⁵ *Id.* at 213-14.

⁶⁹⁶ Marsh, *Limitations on Treatment of Human Remains*, *supra* at 7.

⁶⁹⁷ *Id.*

CURRICULUM VITAE

CATHERINE M. HAMMACK

EDUCATION

Juris Doctor Wake Forest University School of Law	December 2014 Winston Salem, NC
Master of Arts, <i>Bioethics</i> Wake Forest University Graduate School of Arts and Sciences	December 2014 Winston Salem, NC
Bachelor of Science, <i>Psychology</i> University of Southern Mississippi	2009 Hattiesburg, MS

EMPLOYMENT AND EXPERIENCE

Research Assistant Wake Forest University Center for Bioethics, Health, and Society	2014 Winston Salem, NC
Research Assistant Wake Forest University School of Law	2012-2013 Winston Salem, NC
Assessment Counselor Pine Grove Behavioral Health & Addiction Services	2009 Hattiesburg, MS
Research Assistant Univ. of Southern Mississippi Behavioral Neuroscience Laboratory	2007-2009 Hattiesburg, MS
Research Assistant Univ. of Southern Mississippi Clinical Psychology Laboratory	2005-2009 Hattiesburg, MS
Laboratory Instructor Univ. of Southern Mississippi Psychology Department	2009 Hattiesburg, MS
Tutor Univ. of Southern Mississippi Athletic Department	2007 Hattiesburg, MS

AWARDS AND HONORS

CALI Excellence for the Future Award Highest grade in <i>Health-Related Research: Law, Regulation, and Policy</i> Wake Forest University School of Law	2014
CALI Excellence for the Future Award Highest grade in <i>Dispute Resolution</i> Wake Forest University School of Law	2014
CALI Excellence for the Future Award Highest grade in <i>Health Law & Policy</i> Wake Forest University School of Law	2013
CALI Excellence for the Future Award Highest grade in <i>Secured Transactions</i> Wake Forest University School of Law	2013
CALI Excellence for the Future Award Highest grade in <i>Business Drafting</i> Wake Forest University School of Law	2012
Outstanding Senior in Psychology Award University of Southern Mississippi	2008

ACTIVITIES AND AFFILIATIONS

Student Health Law Association Wake Forest University School of Law	2013-2014
American Psychological-Law Society	2009
Golden Key International Honour Society	2008-2009
Psi Chi National Honor Society in Psychology University of Southern Mississippi <i>President (2008), Vice President (2007)</i>	2007-2009
Society for Neuroscience	2008-2009
The Honor Society of Phi Kappa Phi	2008-2009
Peer Advisor University of Southern Mississippi Psychology Department	2006-2008

Alpha Lamda Delta National Honor Society	2005
Phi Eta Sigma National Honor Society	2005

PUBLICATIONS AND PRESENTATIONS

Hammack, Catherine M., *Paying Your (Dis)Respects: Memorials That Offend*, in Tanya D. Marsh ed., *Grave New World: Readings in Modern American Funeral and Cemetery Law* (forthcoming).

Hammack, Catherine M., *Practice Makes Problems: Practicing Medical Procedures Post-Mortem*, in Tanya D. Marsh ed., *Grave New World: Readings in Modern American Funeral and Cemetery Law* (forthcoming).

Hammack, Catherine M., *Secrets of the Dead: To Tell or Not to Tell?*, in Tanya D. Marsh ed., *Grave New World: Readings in Modern American Funeral and Cemetery Law* (forthcoming).

Echevarria, D.J., **Hammack, C.M.**, Jouandot, D.J., & Toms, C.N. (2010). *Does acute alcohol exposure modulate aggressive behaviors in the zebrafish (Danio Rerio), or is the bark worse than the bite?* *International Journal of Comparative Psychology*, 23, 62-69.

Echevarria, D.J., **Hammack, C.M.**, Pratt, D.W., & Hosemann, J.D. (2008). *A novel behavioral test battery to assess global drug effects using the zebrafish*. *International Journal of Comparative Psychology*, 21, 19-34.

Hammack, C.M., Jouandot, D.J., Toms, C.N., & Echevarria, D.J. (2009). *Does acute alcohol exposure disrupt zebrafish shoaling by increasing aggressive behaviors?* [Abstract]. Society for Neuroscience, Washington, D.C.

Hammack, C.M., Hosemann, J.D., Pratt, D.W., & Echevarria, D.J. (2008, November). *The effects of MK-801, SKF 38393, and Ethanol on shoaling behaviors in the zebrafish (Danio rerio)*. Poster session presented at the annual meeting of the Society for Neuroscience, Washington, D.C.

Echevarria, D.J., **Hammack, C.M.**, Wooton, A.J., Welch, A.M., & Rosenblatt, M.P. (2008, November). *The effects of varying doses of ethanol on shoaling behavior in the zebrafish (Danio rerio)*. Poster session presented at the annual meeting of the Society for Neuroscience, Washington, D.C.

Pratt, D.W., **Hammack, C.M.**, Hosemann, J.D., Egglestone, T., & Echevarria, D.J. (2007, November). *Developing new animal models using the zebrafish (Danio rerio)*. Poster session presented at the annual meeting of the Society for Neuroscience, San Diego, California.

Marcus, D.K., & **Hammack, C.M.** (2009, March). *Somatization, health-anxiety, and the two-factor model of psychopathy*. Poster session presented at the annual meeting of the American Psychological-Law Society, San Antonio, Texas.

Payne, K.T., Marcus, D.K., Merkey, T., **Hammack, C.M.**, & Saputo, P. (2008, August). *Group psychotherapy for older adults: A meta-analysis*. Poster session presented at the annual meeting of the American Psychological Association, Boston, Massachusetts.

Marcus, D.K., Hughes, K.T., Saputo, P., **Hammack, C. M.**, Robbins, T.B., Merkey, T., & Arnau, R.C. (2007, August). *Rumination and health anxiety*. Poster session presented at the annual meeting of the American Psychological Association, San Francisco, California.