

## ABSTRACT

Body Worlds: Spectacularization and Its Role in Democratizing Anatomy

Jade Connor

Director: Bill Neilson, MD

Since 1993, Gunther von Hagens' Body Worlds has been visited by over 40 million people worldwide. The plastinated displays marketed as "real human bodies" have elicited both praise and condemnation. Through an analysis of Body Worlds that incorporates ethical considerations from the disciplines of anatomy, museology, and art, this thesis seeks to determine whether Body Worlds spreads knowledge of anatomy at the expense of the donors' dignity. After providing a historical foundation for the rise of public anatomy and body donation, the topics of body commodification, informed consent, and museum practices are discussed. This discussion concludes with the call for the closure of Body Worlds due to the systemic depersonalization of the human body. Rejecting Body Worlds' narrative of the human experience with death and instead encouraging a public dialogue on the relationship between bodies, personhood, and death will foster a better public understanding of these issues than Body Worlds has the capacity to achieve.

APPROVED BY DIRECTOR OF HONORS THESIS:

---

Dr. Bill Neilson, Honors College

APPROVED BY THE HONORS PROGRAM

---

Dr. Elizabeth Corey, Director

DATE: \_\_\_\_\_

BODY WORLDS: SPECTACULARIZATION AND ITS ROLE IN DEMOCRATIZING  
ANATOMY

A Thesis Submitted to the Faculty of  
Baylor University  
In Partial Fulfillment of the Requirements for the  
Honors Program

By  
Jade Connor

Waco, Texas  
November 2016

## TABLE OF CONTENTS

Chapter One: Introduction .....	1
Chapter Two: The History of Public Anatomy.....	14
Chapter Three: Commodification of the Body .....	24
Chapter Four: The Ramifications of Commodification in Body Worlds .....	41
Chapter Five: Why Changes in Policies are not Enough.....	66
Bibliography .....	73

## CHAPTER ONE

### Introduction

Every two years, about forty students on the pre-medical track at Baylor University have the opportunity to study at Maastricht University through the Baylor in Maastricht Pre-Med study abroad program. Students spend three months abroad and take group trips across Europe to visit some of the most important sites in the history of medicine. After midterm exams, the students travel to Guben, Germany to see the Body Worlds Plastinarium. The experience at the Plastinarium prompted the exploration of Body Worlds and its ethical implications as the subject of this thesis.

At the Plastinarium, everything that is meant to be seen and everything that is not occupies the same space. First, the tour guide explains the evolution of preservation techniques, referencing several horse heads preserved with the various methods. The guide concludes by introducing von Hagens' innovation: plastination. As the guide discusses the effects of this innovation, the visitors walk into the next room. Skeletons, organs, and blood vessels fill an open exhibit hall. The lungs of a smoker, the heart of a healthy adult, and all types of tumors sit behind glass displays. Something else is in this room though: a plastinated man running. The tour guide ushers visitors toward the display, inviting them to feel the plastinate. This is not the typical museum: visitors are not chastised for touching the display. Beyond the man, separated by a glass wall, are anatomists working on the next additions to the Plastinarium. A human body lies on a

dissection table; a plastinate hangs on a support stand. Seated below the plastinate, a technician uses tweezers to pick out a nerve and bring it to the surface of the body's hand. Watching the anatomists at work, the visitors recognize without any doubt that this is a museum unlike any other.

At this point, the guide leaves the visitors to explore the exhibits. An ostrich, a figure skater, and a soccer player are just some of the displays to view. A plastinate stares at the skin, presumably his own, that he holds in his hand. Behind a black curtain in the corner of the room are two plastinates in a sexual position. At the opposite end of the room are a collection of plastinated fetuses, illustrating the stages of pregnancy. Just when visitors begin to feel overwhelmed or awestruck, a man in a black hat appears. He engages the visitors, showing them details in the plastinates' anatomy that only an expert could point out. Visitors wonder at this man and his seventeenth century hat, but before they can ask about the man, the tour guide introduces him. He is Gunther von Hagens, the founder of Body Worlds.

### *Gunther von Hagens*

Dr. Gunther von Hagens did not always work with anatomical exhibits, however. Raised in a post-World War II Germany, von Hagens studied medicine at Friedrich Schiller University in Jena, East Germany. Before graduating, he was arrested for attempting to escape into West Germany and imprisoned as a political prisoner for two years. His freedom came when the West German government bargained for him and several other prisoners to be allowed into West Germany (Bohannon, 2003). Von Hagens eventually finished his medical training and received his doctorate from the University of

Heidelberg in 1975 (Institute for Plastination, 2006). He then remained at the University of Heidelberg and completed two residency programs, at the Institute of Anatomy and the Institute of Pathology, before taking a position as a research assistant for Dr. Wilhelm Kriz, a kidney pathologist at the university (Bohannon, 2003; Institute for Plastination, 2006). It was in Dr. Kriz's lab that von Hagens began to develop the process of plastination.

While preparing kidney slices in the traditional manner, von Hagens recounted in an interview with *Science*, he became weary of the time and attention that he had to take with the protocol. He began to experiment: he attempted to create a working protocol by which the organ could be preserved without embedding it in a paraffin medium and developed a rudimentary form of the technique he later called "plastination" in 1977 (Bohannon, 2003). While he initially viewed plastination as a solution to the inefficiencies he saw in his research, von Hagens became aware of the great potential plastination had in the field of anatomy. He applied for patents for his plastination process and began to publish papers and present at anatomy conferences. Anatomists received his presentations well, and soon von Hagens established the International Society for Plastination and began to sell his plastinated organs to institutions that taught anatomy. Throughout the 1980s, the organization began to hold conferences, and it published its first issue of a peer-reviewed journal in 1987 (Bohannon, 2003). In the span of ten years, Gunther von Hagens' technique had spurred a revitalization of enthusiasm for anatomical preservation that had been relatively stagnant in the latter half of the twentieth century.

## *Plastination*

The desire to preserve the body after death has been common to humans since the beginning of recorded history. Ancient Egyptians, notably, used mummification to preserve the bodies of pharaohs and other members of the noble class. Over the centuries, many advances have been made to combat the decaying process in corpses. In the Medieval and Renaissance eras, Western European anatomists experimented with various alcohol-based embalming fluids to enable the study of anatomy using human cadavers (Brenner, 2014). During the mid-eighteenth century in the United States, embalming became a popular way to delay putrefaction, allowing for an increased amount of time between the death and burial of an individual (Garment, Lederer, Rogers, & Boulton, 2007). The discovery of formaldehyde in 1869 revolutionized the field of embalming and is still commonly used today for not only the preservation of bodies to be buried but also the preservation of specimens for research (Brenner, 2014). Plastination, however, seems to be a promising alternative to the long-standing chemical of choice for anatomists.

Although plastination is a phrase commonly used in anatomy today and is a technique millions of people around the world have been exposed to since its invention, many still do not know what the process of plastination entails. In a general sense, the process of plastination replaces all of the tissue's water with plastic polymers, such as silicon rubber or polyester resin. To achieve this, the specimen is quickly frozen to about  $-25^{\circ}\text{C}$  to preserve the cell membranes and submerged in an acetone bath for up to thirty days (Bohannon, 2003). The acetone replaces all of the water in the cells. After the water-acetone exchange, the specimen is moved to a bath of liquid polymers under vacuum conditions. The acetone vaporizes and the negative pressure created by the exiting

acetone draws the polymer into the cells. When this step is complete, the technician can then manipulate the specimen to highlight certain aspects of the anatomy before the specimen is cured using ultraviolet light, gas, or heat (Lantos, 2011). The plastination technique can be used with virtually any animal tissue, but whole-body cadavers are the costliest and take the most time to plastinate. All in all, it takes at least one thousand hours and \$30,000 to produce one whole-body plastinate (Bohannon, 2003).

Von Hagen's Institute for Plastination (IfP) creates several types of sectional plastinates for educational use. Primarily marketed to medical institutions, these plastinates offer a supplement and, at times, even an alternative to traditional gross anatomy dissection courses. Plastinates offer a variety of benefits when compared to traditional anatomy teaching tools like models or prosections. They are real human tissue and are similar in color and definition to living tissue (Riederer, 2014). Because of the nature of the preparation, plastinates are more durable than immersed prosections and can be handled through direct contact without the use of gloves. Through the plastination process, the structures of the specimens are finely maintained and can be viewed in great detail. Several anatomical studies have used plastinates to describe the anatomical organization of the reproductive, gastrointestinal, and nervous systems (Pashaei, 2010; Riederer, 2014) In fact, plastination has been deemed by some individuals in the field of anatomy as "an ideal method for long-term preservation of tissues" (Riederer, 2014) and "a vital tool in the enhancement and clarification of anatomical concepts and relationships previously often difficult to appreciate" (Pashaei, 2010). These plastinates have enabled students and professionals at over 400 institutions worldwide to gain a

deeper and more thorough understanding of human and veterinary anatomy (Gubener Plastinate GmbH, 2006).

In addition to plastinated slices and sections, IfP also creates whole-body plastinates. These plastinates are less common in educational training, primarily because of the cost to purchase such a collection. Although whole body plastinates are expensive, IfP maintains that, if used as an alternative to traditional wet dissections, investing in a series of plastinates would be more cost-effective for an institution when the costs of maintaining a body donation and preservation program are considered (Gubener Plastinate GmbH, 2006). Using whole-body plastinates as an alternative to cadavers also avoids much of the discomfort that many medical students feel when taking a gross anatomy dissection lab. In Islamic countries like Iraq, where engaging in cadaver dissections is widely viewed as a form of mutilation, plastination offers a method of teaching anatomy using real human specimens in a manner more in line with the cultural norms. Moreover, education using plastinates instead of a wet dissection also reduces the number of individuals exposed to formaldehyde (which has been linked to higher risks for various types of cancer) and other harsh chemicals in embalming solutions with known toxic effects (Brenner, 2014). While medical training with plastinates is more detached and does not provide the same opportunities to encounter death and humanity that traditional cadaver dissection offers, it remains a useful development in the field of medical education. The main controversy involving plastination, though, arises out of von Hagens' more recent endeavor: the plastination exhibition.



“The Fencer” (© Gunther von Hagens' BODY WORLDS, Institute for Plastination, Heidelberg, Germany, [www.bodyworlds.com](http://www.bodyworlds.com))

### *The Exhibitions*

Since the early 1990s, von Hagens has expanded his contributions in plastination beyond the confines of scientific research and education to reach the general public. Shortly after introducing the process of plastination for scientific use, he began working on a way to “democratize anatomy” by creating an exhibit of his plastinates (Burns, 2007). The inspiration for this vision came after von Hagens caught sight of a janitor staring at some of his plastinates. The man was enthralled with the body parts and this encounter brought the secretive nature of the field of anatomy into question for von Hagens. The majority of anatomical work—embalming, dissections, research—was done out of the public eye, and von Hagens thought that the average person should have access to this valuable educational tool just as anatomists have had for centuries. This change in philosophy led von Hagens’ creation of the Institute for Plastination in 1993 in an attempt

to produce an exhibit of whole body plastinates open to the public, so that people could “see death without the burden of cruelty” (O’Rorke, 2001).

Although von Hagens was confident that this idea was revolutionary, the Western world, it seemed, needed more coaxing. European universities and museums were not convinced that the public would want to see such an exhibition. The German government, along with the governments of many other Western countries, refused to allow von Hagens’ exhibit, citing laws prohibiting the public display of the dead. In 1995, however, the Juntendo University in Tokyo, Japan invited von Hagens to debut his plastination exhibit on its campus. After investing a great deal of his own money into the creation of the plastinates for the exhibition, von Hagens presented his first public display of plastinates to more than eager crowds.

The first exhibition was a surprising success: in just two months, more than 400,000 people visited the exhibit (Bohannon, 2003). Eager to view this display of real human bodies, young and old alike stood in line for hours to see the plastinates. By the time the exhibition ended, 2.5 million visitors had viewed von Hagens’ work (O’Rorke, 2001). This initial success validated von Hagens’ belief in public anatomical displays and motivated him to expand his exhibition. Two years later, he introduced his exhibition, dubbed *Body Worlds*, to a German audience in Mannheim. The interest in the exhibition was so great that the science museum that housed it kept its doors open day and night in the first weeks to accommodate the lines (Bohannon, 2003). After Mannheim, *Body Worlds* traveled across Europe and Asia—Austria, Switzerland, England, China, South Korea—and at each city presented the exhibit to crowds as excited to view the plastinates

as the crowd in Tokyo. Von Hagens had tapped into the inherent fascination with the human body and death that transcended borders and cultures.

As the demand for Body Worlds increased worldwide, the opposition for the exhibit also mounted. Much of the opposition was a response to the plastinates' poses. After his exhibit in Tokyo, von Hagens decided to take more liberties with the manner in which the plastinates were presented. Initially, the bodies were posed didactically: plastinates were fixed so that the general anatomy could be seen, much like figures in anatomy textbooks. Many of the Japanese attendees, though, thought that these poses gave the exhibition too clinical an atmosphere. Von Hagens used this feedback to alter Body Worlds, and after the Tokyo exhibition, he began to fix the plastinates to look more dynamic and life-like (O'Rorke, 2001). The modification of the plastinates' poses and the air of voyeurism that accompanied them led many to cry foul: opponents of Body Worlds viewed these changes as a distancing of the exhibition from its initial intent of educating the public.

More and more people began to speak out against Body Worlds. The International Society for Plastination, the group that von Hagens founded, released a statement in which it "completely disaffirm[ed] the display of human specimens if not entirely for educational purposes" (Burns, 2007). After making its debut in America, many cities including Seattle and San Francisco, along with the entire state of Hawaii, banned cadaver exhibitions (O'Rorke, 2001). In Germany alone, there have been several lawsuits brought against von Hagens, asserting that the exhibition violates the funerary legislations in the country (Lawrence, 2015). Protests have been staged outside of the museums that house the exhibit. Despite all the opposition, however, Body Worlds has

continued to put on shows, and in 2006 von Hagens opened the first permanent Body Worlds exhibit, called the Plastinarium, in Guben, Germany (Institute for Plastination, 2006).

Since the first exhibition, it is estimated that over 40 million people have seen Body Worlds (Lawrence, 2015). Over ten Body Worlds exhibitions have displayed plastinated organs, humans, and even animals to the public. Throughout the years, von Hagens has used the controversy surrounding Body Worlds to his advantage, and in some cases has incited the controversy himself. In November of 2002, in response to a bill introduced to ban Body Worlds from the UK, von Hagens announced that he would be performing a public dissection in London. In the days leading up to the dissection, von Hagens released some details about the subject of the autopsy. He said that the autopsy would be performed on a 33 year old German woman who had donated her body to IfP. In interviews, von Hagens capitalized on the scandalous nature of the event by spectacularizing the woman's death: "Maybe it was a suicide...She was epileptic and died unexpectantly...Her parents also want to know if she was pregnant" (Cavendish, 2002). Tickets were sold for £12, and were sold out by the day of the autopsy (Cavendish, 2002). Five hundred people, some in standing room only, attended the public dissection and an edited version of the event was televised. The subject of the autopsy, however, was not the young woman advertised. Instead, von Hagens dissected a 72 year old man who had a "normal life" ("Autopsy is held before sell-out audience," 2002). The autopsy did not turn out exactly as the public expected, but it was exceedingly effective. People began to flood the London Body Worlds exhibit. Von Hagens and Body Worlds made news headlines worldwide and von Hagens was never charged—although he was

repeatedly threatened to be arrested by London police—with any crime. Body Worlds had taken the world by a storm.

The international success of Body Worlds has led to the rise of other human body exhibitions looking to share some of Body Worlds' multimillion dollar revenues. Since Body Worlds' debut, several competitors, like *Bodies Revealed*, *Bodies...The Exhibition*, and *Our Bodies: The Universe Within*, have attempted to usurp Body Worlds' notoriety. Because von Hagens' plastination technique is patented, each of his "copycats" have used a slightly different technique to preserve the cadavers, but the effect of the displays is similar. From the beginning, though, von Hagens has criticized his competitors for being inferior in the technical and moral standards set by Body Worlds. In 2004, it was revealed that *Bodies...The Exhibition* was using unclaimed bodies from China for its exhibit. More than that, though, allegations surfaced that these unclaimed bodies were actually Chinese prisoners (Schwartz, 2010). A string of investigative reports by news media in the United States, China, and Germany of Body Worlds and its competitors stirred rumors of a body black market, in which these body exhibitions were buying unclaimed bodies from marginalized populations in foreign countries. While none of these rumors have proven to be true, von Hagens maintains that his competitors have tainted the reputation of Body Worlds. The creation of the industry of body exhibitions has contributed to the controversy surrounding Body Worlds, making it even more of a target for criticism in the public eye.

While the current concerns about Body Worlds are valid, they are also a repetition of the fears regarding the field of anatomy that the public has expressed for centuries. Since the foundation of anatomy as a science, there has been discussion about how

anatomy affects the way the human body is viewed in society. From Vesalius to William Hunter and now to Gunther von Hagens, anatomists have pushed the boundaries of science accessed to the public outward, sometimes with strong oppositions to their means of doing so. Advances in anatomy and public sentiment have influenced laws and policies so that human dignity is maintained even after death, and these legal amendments have in turn allowed for wider acceptance of public anatomy. Underlying all of this change have been the work of philosophers, theologians, and anthropologists, each defining and redefining the role of the body in the human experience in their respective disciplines. New developments in medicine and philosophy, in addition to shifting values, have transformed the way the public currently views the body in the Western world, and the public views have changed the way anatomists do their work. Issues of body donation, informed consent, and public education have forced the field of anatomy to consider when and how human bodies should be displayed, if at all.

Von Hagens' Body Worlds is the latest subject of an ongoing discussion about public anatomy, but it is one that involves many ethical considerations from a variety of fields: anatomy, museology, education, and even art is incorporated into this one human body exhibition. This thesis will demonstrate how these fields are incorporated into the arguments for and against Body Worlds, and how they contribute to the unsteady ethical foundation of Body Worlds. Through an analysis of these considerations, it is apparent that although plastination and von Hagens' exhibit have made strides in the public's understanding of the human body, the use of entire human bodies is not warranted for the teaching of anatomy to the public. Body donation inevitably involves the commodification of the body, which may be justified when the act of commodification

maintains the autonomy and dignity of the donor. However, the voyeurism and spectacularization found in the practices of the procurement and display of the bodies exploit the donated bodies, overshadowing the benefit the public may gain from viewing Body Worlds. In light of the several, more ethically-sound avenues for anatomy and health education, there is little defensible reason for Body Worlds to continue hosting its exhibition. Body Worlds should discontinue its exhibits to the public and focus its efforts on providing anatomical specimens for medical and anatomical education. These endeavors will allow for the effective education of students while minimizing the exploitive nature of commodification that accompanies the Body Worlds exhibitions.

## CHAPTER TWO

### The History of Public Anatomy

#### *Early Anatomical Endeavors*

Humans have been fascinated with their own bodies since the beginning of recorded history: some think that it originates with some desire to know oneself, as the ancient Greeks directed humanity: *nosce te ipsum* (Kemp & Wallace, 2000). Others view it as a way to glorify God and to see the created order in all things, even the human body. Whatever the school of thought, one thing is certain: art and science have been intertwined through the field of anatomy. Through the study of anatomy, the world has received both modern surgery and Michelangelo's *David*. The most cited examples of the use of art to further the scientific study of the body are the works of Leonardo da Vinci and Andreas Vesalius, but it did not begin or end with these individuals. Although today science and art are commonly seen as two separate forces, recent attractions like Body Worlds demonstrate that the intermingling of science and art is not just a trademark of the past.

Although the Renaissance was the era when the blend of art and science can be most clearly seen, ancient Greece also saw the influence of anatomy in its day. Galen, one of the most famous physicians of the ancient world, pioneered the field of anatomy by dissecting pigs and even monkeys. Because of the social norms of his time, Galen never dissected a human, but he believed that the conclusions drawn from studying the

anatomy of animals could be applied to humans. Galen's work molded the field of anatomy for over a thousand years, and his work was studied, often presented as uncontested fact, throughout the medieval era. It was not until the 1400s that anatomists began to have reservations about Galen's teachings.

Leonardo da Vinci was one such skeptic. Although he was not the first to dispute Galen's findings, his artistic skill enabled the true structures of the body to be better appreciated in his works than in any previous work. After modeling his drawings on human skeletons and animal dissections, da Vinci performed his first human dissection in 1506. In his career, he dissected an estimated thirty cadavers, and these dissections enabled him to describe the circulatory system, noting that blood circulated by means of the heart, not the liver as Galen had described it. Unfortunately, the majority of Leonardo's anatomical sketches and notes were left unpublished when he abruptly ended his study of anatomy, possibly due to the accusations of "unseemly conduct" by society in Renaissance Rome (R. Jones, 2012). Because of this, his contributions to anatomy in his day were limited to what was depicted in his paintings.

Without da Vinci to assume the role, Andreas Vesalius became the most famous anatomist of his time. His book, *De humani corporis fabrica* (1543), revolutionized the way anatomy was taught to the public. *De humani corporis fabrica* was the first book that revealed accurate representations of human anatomy in a manner appealing to people other than physicians and scientists. Through his book, Vesalius dispelled the inaccuracies of Galen's work through thorough descriptions and elaborate figures. His illustrated humans were drawn in gardens and landscapes, often in dynamic poses to demonstrate how specific body parts functioned. Some of his figures even contained flaps

that the reader could open to reveal the underlying structures. The use of artistic design in the book was remarkable and helped readers better understand the anatomy in way that observing their own bodies could not convey. Vesalius' book was able to reach much of the Western world through the invention of the printing press, and as a consequence, it changed the way the public viewed the human body.

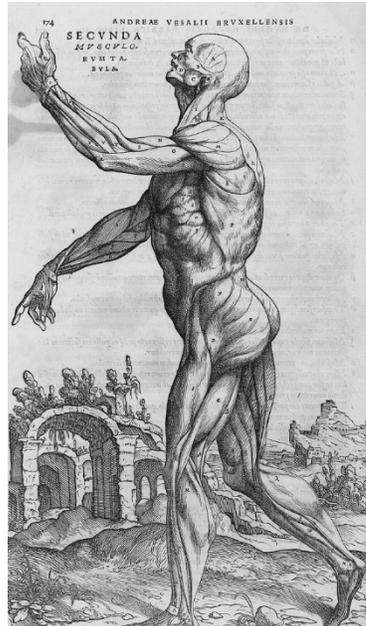


Figure from page 26 of *De humani corporis fabrica* (Vesalius, 1543)

In addition to his written works, Vesalius also made use of dissections to educate his students, and the public, about anatomy. At the University of Padua, which housed the first anatomical theater ever built, Vesalius performed dissections of human cadavers while lecturing to a crowd of medical students, public officials, and even laypeople. On the cover of his book, people from various social circles crowd around Vesalius as he dissects; members of the clergy and merchant classes can plainly be seen in the illustration. Although there was undoubtedly an air of fascination and veneration

accompanying these dissections, Vesalius saw them as a way to show the majesty of God and reaffirm his sovereignty over his creations (Kemp & Wallace, 2000).

After Vesalius' popularization of the public dissection, many other institutions in the Western world began to build anatomical theaters for dissections. In the Netherlands, the Leiden anatomical theater performed annual dissections as an event during Carnival, and after it became too hot to perform dissections, the theater was turned into a museum displaying human and animal skeletons for the remainder of the year. The anatomical theater in Bologna offered anatomy lessons for the public free of charge, with a series including thirty different lectures (Lantos, 2011). After Vesalius's death, no one individual advocated for public anatomy like William Hunter.

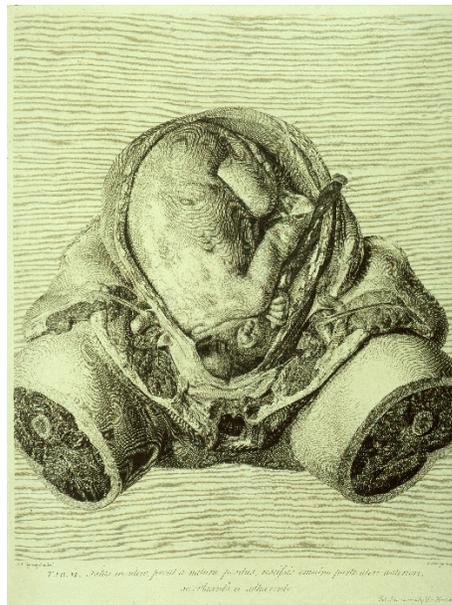


Table 6 of *Anatomia Uteri Humani Gravidi* (Hunter, 1774)

William Hunter was an anatomist and obstetrician who lived in England during the eighteenth century. His early career was marked by innovation: as the Royal Academy's first professor of anatomy, he popularized a new way of teaching anatomy in which each student received hands-on experience with cadavers instead of watching the

lecturer perform the dissection. Hunter did much of his work in female reproductive anatomy, and his most famous book, *Anatomia Uteri Humani Gravidi* (1774), was clearly modeled after Vesalius' *De humani* (Kemp & Wallace, 2000). For this undertaking, Hunter dissected thirteen women who died in different stages of their pregnancy and used what he learned to describe the normal progression of pregnancy (Lantos 2011). In greater detail than ever before, readers could see life-like illustrations of the uterus and the fetus through Hunter's book.

Again taking after Vesalius, Hunter performed numerous public dissections and conducted lessons in midwifery and embalming to both medical and public audiences. Although Hunter charged money to attend his demonstrations, his lectures were always in high demand. Throughout his career, however, Hunter was known to lament the fact that anatomy could not be more openly available to the public (Lantos, 2011). Although he did not see its fruition, Hunter and his advocacy for public anatomy led to the establishment of the Hunterian Museum in Glasgow, Scotland in his name, which houses thousands of human and animal specimens that he and his brother, Dr. John Hunter, collected over their careers. The Hunterian Museum, in the nineteenth century, became one of the many anatomical museums to not only educate the public about anatomy but to capitalize on the public's desire to encounter a sensationalized view of death.

### *Anatomy Museums*

The Hunterian Museum, however, was one of the more recent museums established to display human anatomy. There have been a variety of anatomy museums established from the Renaissance era to the present that have walked the fine line

between education and sensationalism. Some have toed the line, presenting didactic displays that seek to demonstrate a point of medical importance, while others—albeit a minority—have made their displays works of art that comment on the human experience. The most famous of the latter type of anatomy museums—Leiden Anatomical Museum, La Specola, Musee Fragonard d'Alfort, and the Hunterian Museum—offer definitive proof that the trends seen in the displays in Body Worlds are not unique, nor did they originate from Gunther von Hagens. While these are not the only museums of their kind, the museums described in this section provide examples of the issues brought back to the public consciousness through Body Worlds.

The Leiden Anatomical Museum, an outgrowth of the city's anatomical theater, was formally established in the early seventeenth century and was one of the first anatomical museums in the West. This museum became popular in its own right when Fredric Ruysch developed a new technique for preserving and displaying specimens. Anatomists at Leiden decorated the displays with hourglasses, wilting flowers, and other symbols of the passing time (Lantos, 2011). Skeletons often had banners with sayings to remind visitors of their own mortality (Kemp & Wallace, 2000). The museum at Leiden's mission, it seems, was to not only to teach anatomy, but to show off the anatomists' technical and artistic skill by the manner in which specimens were displayed. Reverence for God and for the dead was also central to its mission, made apparent by the choice of moral teaching in the museum. For anatomists during the late Renaissance, anatomy was not simply something to be learned for practical uses, it was also had major philosophical implications.

In the eighteenth century, wax became a popular means of creating not only art but anatomical exhibits as well. In 1775, La Specola opened its doors in Florence, Italy and quickly became the storehouse for incredible anatomical waxworks based on cadaver dissections. Using wax as a medium enabled artists to present the human body in vibrant colors, giving the pieces a more life-like appearance than what could be shown with real human bodies using the preservation techniques of the times. Wax also gave artists the opportunity to showcase certain structures in their work. In line with earlier illustrations for anatomical books, La Specola adopted the trend of social commentary in their pieces. Often waxworks were placed on silken sheets, with the subjects of the pieces lying in dramatic poses with emotion painted on their faces. The works of Clemente Susini, a master in the art of anatomical wax sculpting at La Specola, exemplify what these displays meant to the artists and anatomists who created them: it was a contribution to the public's understanding of the human body, but also to its understanding of human nature as a whole (Kemp & Wallace, 2000).

While La Specola is rich in artistry and philosophy, the Musée Fragnard d'Alfort in Paris, France supplies artistry with the intent to attract and shock visitors. Although all of the specimens were created in the late eighteenth century and could be accessed by medical and veterinary professionals, the museum was not open to the public until 1991 ("Les ecorches de Fragonard," n.d.). The majority of the displays in this museum are human and animal specimens—dissected arms and legs, skeletons, organs, but a subset of these specimens, called *écorchés* or "flayed ones," makes this small museum famous. The *écorchés* are a collection of human and animal corpses fixed in a variety of dramatic displays. Among them are "The Rider" (a preserved human sitting on top of a preserved

horse, surrounded by human fetuses riding on horse sheep fetuses), “The Dancing Fetus” (a fetus appearing to dance a jig), and “The Man and the Mandible” (a human holding a donkey’s jawbone, in the image of Samson fighting the Philistines) (“Les ecorches de Fragonard,” n.d.). These displays have stirred a similar controversy to the displays in Body Worlds, with opponents calling for the removal of the displays that they believe violate human dignity.

Opponents of anatomical displays have also spoken out against the Hunterian Museum in recent years, but for another violation: disregard for informed consent. John and William Hunter lived in a time before stringent and explicit anatomy laws, and many of the cadavers they obtained for scientific use were purchased from body snatchers. Thus, several of the specimens in the Hunterian Museum can be traced back to people whose bodies were taken without their permission or the permission of their kin. The most notable of these cases is the displayed skeleton of the “Irish Giant,” Charles Byrne. Byrne was a famous man with acromegaly that performed in shows across Ireland and England. Because of his inexplicable growth pattern and height, many physicians and anatomists approached him about donating his body to be dissected after his death. After refusing time after time to donate his body, Byrne made preparations to ensure that he would not become an attraction after his death. In his will, he stated that he wanted to be buried at sea (de Herder, 2012). He even paid an undertaker before he died to make sure his coffin remained sealed until he was buried. Unfortunately, John Hunter was determined to obtain Byrne’s body. He paid a detective to notify him of Byrne’s death, and, although it is not known exactly how Hunter obtained the body (the most well-known stories involve the bribing of either Byrne’s friends or the undertaker), years later

the Irish Giant's skeleton was revealed to the public. The skeleton of Charles Byrne is still on display at the Hunterian Museum as of February 2016.

This is not the only case, though, of blatant disrespect for the wishes of the deceased. In 1830, French explorers and taxidermists Jules and Edouard Verreaux began to display the remains of the unidentified Botswanan man who came to be known as “El Negro” in their taxidermy shop. On one of their many expeditions to Africa, the Verreaux brothers, who are usually remembered for their great contributions to the characterization of African plant and animal species, attended the funeral of a native Botswana man. After the funeral, however, the men stole the body and subsequently preserved him using their taxidermy techniques. Jules Verreaux, in a letter to the Paris Museum director, even boasted about his actions, saying:

“An object which is not the least interesting in our collection is a stuffed 'bouchouana' which is very well preserved and which was about to cause my death, because in order to get it I was obliged to disinter it at night in places guarded by his fellows” (Molina, 2002).

In this letter, Jules Verreaux continually refers to the man as “an object” with the impersonal pronoun “it” instead of him, indicating the explicit dehumanization of the Botswanan that undoubtedly contributed to the justification for stealing his body. Despite this, the French newspapers praised the courage of the Verreaux brothers and noted the public interest in seeing the taxidermy man. What is more striking, though, is that the story of “El Negro” was only recently told, causing a mass public outcry in 1991. “El Negro” was not taken off display and reburied until 1997, after a heated debate about repatriation and the display of human remains. Gunther von Hagens, in light of the deficits in informed consent, would not be the first museum exhibitionist to display bodies obtained through unethical means.

These anatomical museums and exhibits demonstrate the legacy of anatomy, highlighting both the potential opportunities for education along with the great occasion for ill-treatment and misuse. Although the public acceptance of such controversial displays like the exhibits in Body Worlds may be perpetuated by the social norms and cultural values of the Western world at the present time, this trend did not begin in the current social climate of the world. There has always been a touch of artistry in anatomy, and as a consequence, the line between the acceptable and the unethical is often blurred. Body Worlds happens to be the most recent example of this trend.

## CHAPTER THREE

### Commodification of the Body

Plastination is a time-intensive process that converts once living tissue into material made of 70% plastic polymers. Though it is a feat to be celebrated for enabling more detailed studies of anatomy, this innovation is accompanied by a new set of ethical questions arising from the state of the plastinated body. Because the plastinates are mostly man-made material, they are typically thought of as property in a legal sense. Many ethical assertions accompany this property designation. Underlying Body Worlds and its endeavors is a collection of beliefs about the body and its relation to the human experience. These beliefs are grounded in two main concepts of the body: the body as a republic and the body as property, both of which stem from the well-established theory of Cartesian dualism. Through Body Worlds' treatment of the bodies it displays, it is apparent that these dualistic theories have led to a commodification of the body. In Body Worlds, a person is reduced to a body, and the body is then presented as an inaccurate and overly simplistic representation of humanity. It is this ethical foundation upon which the institution of Body Worlds is built that has led to some troubling outcomes.

#### *Cartesian Dualism*

Renee Descartes first penned his theory of the mind in 1641 in *Meditations on First Philosophy*. In this book, Descartes sought to demonstrate the existence of God by

first addressing a major stumbling block for unbelievers. He set out to answer whether the soul also dies with the body, an idea in direct opposition to Scripture. In response to this inquiry, Descartes asserts that “thinking” and “extension”—qualities of the soul (which encompasses the mind) and the body, respectively—are distinct property attributes of human nature. Although the two work closely together, they are not interconnected (Descartes, 1911). In its essence, Cartesian dualism is the philosophical belief that the mind and the body are two independent entities. This distinction, he claims, enables the soul to live eternally even after the body dies.

Although Descartes intended for his work to resolve a common question about the Christian faith, he also introduced many points that have several interpretations. For example, at the end of the Sixth Meditation, Descartes explains that the body is subject to deception that the mind must discern (Descartes, 1911). Over the centuries, this statement has been used to support the Gnostic idea that one must sublime from material and corporeal things into divine and intellectual endeavors. Alternatively, the assertion that the body is distinct from the mind has been used to perpetuate the argument that actions performed with the body have no bearing on the soul. Both of the arguments that arise from Cartesian dualism create major implications regarding human nature and the role that bodies play in life.

The first and most readily-made implication of Descartes’ theory is religious in nature. In the Christian tradition, there is a constant conflict between man and his flesh. The Bible views the flesh as disloyal, subject to fleeting desires, and a temptation that must be overcome with the help of the Holy Spirit. Paul references the flesh several times in the Bible, and in the Gnostic tradition, “flesh” is interpreted as “body.” Thus, Gnostics

believe that the body is an evil that must be conquered. Because of the belief that the body is evil, Gnosticism, in one form or another, rejects the idea of the Incarnation (Shuman & Volck, 2006). Some Gnostics believe that Jesus was not divine, while others deny that Jesus had a real body in the way that humans do. The Gnostics refute the idea that a divine entity would take on a body, which is thought to be base.

Cartesian dualism easily fits into the Gnostic narrative of Christianity. The separation of the mind and the body supports the idea that one can overcome the sinful body, because the two are not intertwined. It also perpetuates the idea that the body is inferior and subordinate to the mind. Because of this, some have classified Cartesian dualism as a form of Gnosticism and consequently deemed it a heresy (Shuman & Volck, 2006). A heresy is a belief that denies some theological truth, like the Gnostic's rejection of the Incarnation. Just as Gnostics call the body, God's own creation, evil, proponents of Cartesian dualism overstate the body's participation in sin and downplay the mind's contribution to sinful action. This leads to a misunderstanding of the mind and body as it relates to sin and salvation that is contrary to Christian teachings.

While Cartesian dualism can be seen in a negative light when analyzing it through the lens of Christianity, it can also be viewed as a catalyst for medical innovation. Many people thought that because the soul and body were inseparable entities, what was done to the body would also be done to the soul. Thus, many thought that diseases had spiritual origins, such as God's punishment for wrongdoing or manifestations of guilt or grief. Additionally, a stigma developed against cadaver dissections because people feared that if their bodies were not intact they would not be resurrected during Christ's second coming (Mehta, 2011). Cartesian dualism provided an alternative hypothesis to these

beliefs and added to the credibility of the physicians and scientists attempting to find biological origins of disease.

The popularization of mind-body dualism has also contributed to the widening social acceptance of alternative treatments of bodies after death: the body is no longer in contact with the soul and as a consequence, any manipulation to the body has no influence on the mind. Because of this belief, alternative forms of body disposal like cremation and burial at sea became more accepted. Furthermore, body—and later organ—donation became more appealing in society. Donations to science no longer benefitted the scientific community at the expense of one's own soul. These dissections became a necessary way to discover the mechanisms of the body, which Descartes referred to as a substance that could be objectively studied (Descartes, 1911). By gathering measurable data and observations, one could learn about the body, which was something that could not be done with the mind in Descartes' time. Dissections were justifiable because they enabled physicians and scientists to find the physical origin of the disease ailing the body.

Despite prompting the philosophical shift in the biomedical field that allowed for the study of the human body, Cartesian dualism also contributed to a more concerning transition in society. Many medical anthropologists and bioethicists have attributed the commodification of the body in society today in part to the prevalence of Cartesian dualism (Herring & Chau, 2014; Sharp, 2000; Shuman & Volck, 2006). Descartes' theory created a dichotomy in which the mind is the seat of identity and the body is simply a vessel that enables the mind to execute its desires. As Dr. Lesley Sharp, a medical anthropologist at Columbia University, explains:

“This dualism, so rampant in medical practice, facilitates the depersonalization—and, thus, dehumanization—of persons-as-bodies, a process that ultimately allows for the commodification of the body and its parts” (Sharp, 2000).

In a society shaped by Cartesian dualism, bodies are seen not as integral parts of the person but as objects to be used. As a result, the worth of the body is not intrinsic but is instead determined by what the body can do or how it can be exchanged.

It is worth noting that commodification did not begin with the societal acceptance of Cartesian dualism. In fact, the most characteristic instances of commodification, prostitution and chattel slavery, began long before Descartes’ writings. Beyond this new theory, the social climate of the burgeoning Enlightenment period (an era marked by rebellion against religious authorities, increased value of rational thought and education, and rising efficacy of science and medicine) legitimized the wish to commodify the body specifically for scientific study. Moreover, not all commodification is unethical, despite Sharp’s overarching condemnation. The world’s system of paid labor is undoubtedly commodification: workers are paid for the amount and quality of work they perform, and the value of workers is contingent upon how their labor can be exchanged for money. It is generally only when this commodification becomes exploitive (the employees are subject to abhorrent working conditions, for example), that there is public outcry. While regulations have been made to curb exploitation, on the whole, this system continues in this manner primarily because the benefit to society outweighs the negative impacts of commodification. Similarly, science, like labor, became a component of society valuable enough to warrant body commodification. Because of this, new theories of the human body and its relationship to the person arose to reconcile commodification with public good.

### *The Body as Property*

The theory of the body as property grew out of Cartesian dualism and the desire to utilize bodies for both scientific and practical purposes. It asserts that the body is owned by the person who possesses it and that property rights apply to the body. While there are some who argue that bodies can always be viewed as property, many proponents consider the body as property only when the person is no longer living. While this idea may be less intuitive, there are strong precedents for this belief. Historically, cadavers and human materials that have been separated from the body have been treated similar to property: museums sell and purchase mummified bodies, citizens can will their body to donation programs or institutions in a legally-binding agreement, and people sell their hair and blood without a second thought. The belief that the body is property after death has been implicit in society for centuries, even before there was an explicit argument for the inherent property rights of the body.

Although ownership is sometimes thought as an equivalent to possession of property, the two terms have subtle differences (Wall, 2011). Ownership is a broader term that encompasses property: all property is owned but not everything that is owned is property. In a legal sense, ownership entitlements are protected by three different rules: inalienability rules, liability rules, and property rules. Inalienability rules dictate the possession of things that cannot be transferred to another and are protected by deterrence under the law. Social security numbers are an example of this. A person owns his social security number and cannot transfer it to another person. If someone steals an identity, then the perpetrator is charged with a crime. Liability rules apply to objects that are transferred involuntarily and must be paid for as a result of the loss of possession. This is

the governing theory behind eminent domain. Property rules state that objects are transferred voluntarily when the value of the entitlement is agreed by both parties. This is the most widely understood type of ownership entitlement rule and is how most things are bought and sold in society.

Supporters of the body-as-property theory argue that in addition to the entitlements of possession, use, and management granted by ownership, owners of bodies also have income rights. This means that owners of bodies have the right to not only transfer ownership but also benefit financially from their bodies. This has major implications, especially for cadaver and organ donations. Under this theory, organ donors would have the right to sell their organs and whole-body donors could receive money for their donation. Body Worlds, which currently sells plastinates, would be able to charge for the actual body itself and not simply the labor and material costs to make and transport the plastinates.

The property theory takes a more individualistic approach to the body and highlights the importance of autonomy when making decisions about one's own body. The individual wishes are significant and even take precedence before the benefit of society. Just as a person can decide to sell his food instead of donating it to a food pantry, so too can a person decide to transfer ownership of his body for financial gain instead of out of charity. Understandably, this theory has been extensively scrutinized by bioethicists. Many argue that an individualistic, legalistic approach to the body does not fully address all of the nuances involved with the person (Herring & Chau, 2014). Herring and Chau's reasons that bodies should not be considered property fall under two broad assertions: the body is dynamic and the body cannot be viewed apart from the

community of bodies that surrounds it (Herring & Chau, 2014). Much of what we consider our body is not even human material, like the bacteria in our intestines and on our skin. The cells in our body die and are replaced constantly. Moreover, transfers of bodily materials between people occur constantly but are seldom dictated by property rules: when mothers breastfeed their children, antibodies are being transferred to the children in the breastmilk. The body as property theory does not fully account for these considerations.

There is also a wider social context in which bodies operate. The decisions made about the body (most notably about cadaver and organ donation) occur after interactions between physicians, organizations, families, and friends. These decisions, although ultimately made by the individual or a guardian, are not the decisions of a single person; they are interwoven with societal and cultural considerations. Additionally, this theory presents a conundrum in instances of willed donation. The possession of and all rights to property cease when the owner dies in this theory. The property is then legally owned by the next of kin or, if no family can be identified, the governing entity. Once property is transferred, however, the previous owner has no legal rights to that property, including management rights (Goold, 2014). Thus, the wishes of an individual would end when that person dies. This would negate the entire system of willed donations and any deceased donations would be dependent upon the wishes of the new owner of the body. Under the body as property theory, commodification of the body is inevitable. Although financial gain would incentivize and subsequently increase the number of organ and cadaver donations, this increase comes with a potential for societal harm. Beyond the looming

opportunity for undue inducement, there are also concerns that viewing the body as property undermines human dignity by viewing the person as a mean to an end.

### *Body as a Republic*

The theory of the body as a republic can be seen as an offshoot of the body-as-property theory. While the latter theory views the body through the ownership by an individual, the former asserts that when a person dies, the body is not transferred as property to another individual but becomes a public good. Like the body-as-property-theory, the theory of the body as a republic has its roots in Cartesian dualism and is built on the understanding that the mind houses the identity of a person. However, it also takes on utilitarian judgement. Utilitarianism is a moral theory that uses the principle of maximum utility to make decisions (Beauchamp & Childress, 2009). In the case of the body, the utility is the health benefit to society. Should the body be considered a republic after death, there would be an undeniable maximum utility found in the donation of the body to research and academic institutions and hospitals. These cadavers could be used for transplantation, research, or medical education, and every need could be filled in time. It is estimated that about 7,000 people die in the United States each year whose deaths could have been avoided if they had received a transplant (Harrington & Sayre, 2006). Treating bodies as a public good after death would ensure that everyone in need of a transplant would have the opportunity to receive one. The benefits to society due to the surplus of cadavers would be tremendous and would not introduce the undue inducement that accompanies the strict body-as-property theory.

This use of bodies as public good does not resolve the issue of commodification found in all theoretical offspring of Cartesian dualism and even introduces new moral concerns. People may continue to be viewed as a means to an end. Personal beliefs that oppose what many view as mutilation of the body after death would be subordinate to the greater societal good. Furthermore, the utilitarian judgements that accompany this theory do not always predict objective action. Many ethicists have rejected the idea that judgements made under the guise of utilitarianism are void of bias and are solely concerned with the maximum good (Kahane, Everett, Earp, Farias, & Savulescu, 2015). Similarly, critics often claim that utilitarian decision-making ignores the needs of the minority in order to fulfil the needs of the majority, that which would do the most good for the greatest number of people. Even in this particular case of treating the body as a republic, priorities would have to be set based on the needs of the majority and may delay the fulfilment of valid needs of a subset of the population. For example, in an isolated location all of the cadavers could be used to meet the demand for organs transplants for the population because this is the need with the most utility. During that time, however, no cadavers would be used for medical education, an activity that would only benefit a select number of people. Although medical education has its own importance, it would be prioritized behind the immediate need of patients waiting for transplants and medical training—and specifically training for transplant surgeries— may suffer because of it. Even the best intentions and moral actions come with reason for pause and contemplation.

Advances in medical technology have necessitated defining the ownership and accompanying rights of bodies, but as it usually happens, these practices arose before

conversations of ethics took place. This is not only a phenomenon in the biomedical field: the same trend can be seen outside of the realm of medicine. As a result, ethics plays a different role when contributing to these conversations, often times trying to reconcile ethical considerations with current practices. This can be seen in the current debate of ownership of the body. With organ transplantation and cadaver dissection for medical education widely accepted by society, the conversation of body ownership has shifted to address the legal ramifications of donating bodies. Despite this, it is important to note that the language of ownership and property is inherently the language of commodification. Defining ownership and claiming property is only useful inasmuch as it enables society to determine which parties can use or exchange the owned item (i.e. the commodity) and whether or not a practice is exploitive.

These theories also fail to fully acknowledge the physical body is an integral part of the person. Bodies, in addition to enabling humans to interact with and experience the world, are inextricably tied to identity, something that is unique for each person. As a consequence, one can never truly transfer ownership to another party in the same sense that one can do with other types of property. Although viewing the body as property or a public good is a beneficial model in some respects, these theories cannot explain all of the practices regarding the body after death that occur in society.

Because of the close association with Cartesian dualism while failing to account for the psychosocial aspects of the body, ownership and property language are not sufficient to discuss the rights of individuals with respect to their bodies. It is not necessarily true that individuals' right to autonomy ends when they die. In their discussion of surrogate decision-making, Buchanan and Brock assert that there are two

types of interests: experiential interests (pertaining to present circumstances) and surviving interests (pertaining to the future) (1989). While it is widely accepted that the deceased cannot create new interests, an individual's surviving interests, because they relate to events that have not yet occurred, can exist beyond the individual's death. Thus, autonomy extends beyond death inasmuch as an individual's surviving interests can still be fulfilled. Furthermore, although deceased individuals can no longer feel harm, Feinberg's definition of harm as a setback to an interest or, in a more extreme case, a violation of another individual's rights implies that harm can still be done even if it is not being perceived by the victim (Feinberg, 1984). When considering Feinberg's definition of harm with Buchanan and Brock's definition of interests, it is clear that an individual can have interests that are able to be fulfilled or violated after death. Respect for autonomy, then, includes the respect for an individual's decisions about the future though the individual may no longer be able to independently carry out or even perceive the fulfillment of those decisions. This objective view of interest and harm assert that beyond the general arguments for maintaining human dignity for the sake of society or to honor the memory of the dead, there is also an obligation to respect autonomy for the sake of the deceased individuals themselves. Casting this obligation in the light of property—whether public or private—limits the right to autonomy with respect to an individual's own body. If these theories are upheld, an individual's autonomy would be more finite, not only limited by the degree to which the exercising of the autonomy infringes on the rights of others but limited temporally as well.

In these introductory sections, the theories of the body under which Body Worlds operates have been expounded in general terms. Now the discussion will turn to how

Body Worlds as an institution views the body, indicated by specific aspects of their treatment of the cadavers that they received through donation.

### *Examples of Body Commodification in Body Worlds*

Body Worlds is undoubtedly founded with a dualistic understanding of the person. Despite Gunther von Hagens' reverence for the body and its capacities and his wish to democratize anatomy, Body Worlds falls victim to the ever-present temptation of commodification by its concern with the body over its concern with the person. Sharp presents several conditions that result in body commodification, namely technocratic medicine fueled by capitalism, body fragmentation, and the language of gifts and donation (Sharp, 2000). Throughout Body Worlds, these conditions have facilitated the exploitive commodification of the body, creating exhibitions fueled more by the draws of popularity and financial gain than by the desire to educate the public.

Body Worlds benefits from the technocratic society that has emerged out of twentieth and twenty-first century innovations. Beginning in World War II, there has been an exponential increase in medicine's ability to improve and save human life. Treatments like dialysis and organ transplantation, imaging techniques like CT and MRI scans, and genetic testing have enabled for better understanding of the body from an increasingly reductionist viewpoint. These innovations were a welcomed addition to clinical practice, but they have also reinforced the dualistic view of the person. For many people, physical conditions do not contribute to their concept of their own personhood, resulting in self-objectification (Sharp, 2000). The body's parts are something that can be transformed and replaced, making it more difficult to view the body as an integral part of

the person. If one can have their heart removed and replaced by a total artificial heart and still be the same “person,” then it begs the question of whether that heart could be a part of one’s personhood. The modern technocratic society denies that a body is a necessary component of a person, and so it reduces the body to a means to accomplishing the mind or soul’s will. This idea has inspired movies like *A.I.: Artificial Intelligence* and *Her* to propose that one does not need a physical human body to be a legitimate person. *Body Worlds* simply inverts the maxim asserted by society: if the body is not needed in order for a person to exist, then what is made with the bodies of the deceased need not take into account the person to whom body once belonged. This idea legitimizes the plastination and display of bodies.

Body fragmentation can occur both physically and socially (Sharp, 2000). Bodies are divided so that a single donor can provide organs to multiple recipients, but they can also be separated from their social context. The act of body donation isolates the body so that the social worth of the body is no longer perceivable. This is apparent when considering a plastinated organ, but is less obvious with a whole-body plastinate. In *Body Worlds*, donations occur anonymously, and there is no hint of the donors’ identity to the public. The whole-body plastinates are stripped of their skin and hair, and their eyes are replaced with plastic replicas. The plastination process dissolves the fat in the body so that all of the plastinates appear slender and muscular, regardless of their actual health at the time of death. When the process is complete, all of the displays look like manufactured models: plastination reduces the physical body to perfect specimens of health. To the average visitor, there is no indication of the donors’ health or even their demographic characteristics beyond their gender. Not only this, but plastination also

makes it virtually impossible to view the bodies apart from the context of displays. Moreover, instead of acknowledging the donor in the displays, Gunther von Hagens signs his own name and ascribes a title to each of the pieces, effectively branding the plastinates (Burns, 2007). Apart from von Hagens' naming, the plastinates become indistinguishable and interchangeable. Because the majority of the plastinates have no identifiable characteristics and only a small percentage of the plastinates are human tissue, they effectively become models of the body and are easily treated as such. This anonymity reinforces the view of the body as property and perpetuates the commodification of the body without regard to the person.

Body Worlds' belief in the body as property can also be seen in the commercialism of the institution. Von Hagens uses his management entitlements to dictate the terms in which patrons can view the bodies and there is a voluntary exchange of money when patrons visit the exhibit. These actions are consistent with the legal rights granted to property owners. Von Hagens' assumption of property rights with respect to the plastinates attest to Body Worlds' philosophical views of the body. As seen through the advertisements and publicity stunts, Body Worlds exploits the body as a means to achieve commercial success. More and more plastinates are not being made to show different or more detailed parts of the body, but rather are created to depict more interesting characters or personas. Body Worlds maintains that the property rights to the donated bodies apply to the plastinates, and this permits for the use of donated bodies in ways that attract visitors.

In addition to the societal context of Body Worlds, the language of donation and education aids in silencing opposition to the commodification occurring in the exhibits.

The use of donor language to mask commodification is a well-developed idea in the realm of anthropology (Sharp, 2001). The language that Body Worlds uses to recruit support follows the same path to commodification that is seen in organ procurement. Utilizing the language of gifting to describe willing one's body to Body Worlds appeals to society's value of altruism and charity. "Donating" one's body denotes a selfless act made to benefit society. One's donation to Body Worlds is spoken of as a "gift," something that is appreciated and cherished. Similarly, "democratizing" anatomy links Body Worlds' mission with the superordinate goals of Western society. Just as the Western world seeks to secure political autonomy and choice for individuals, Body Worlds aims to empower individuals to learn about the human body for themselves rather than accepting the word of a scientist or physician. The strong moral undertones of the rhetoric used in Body Worlds, however unintentional, make it difficult to identify and speak out against the commodification. It presents cognitive dissonance: people question whether an institution so committed honoring the donors' gifts by furthering anatomical education can be guilty of inappropriately commodifying the bodies donated to them. If Body Worlds' words are taken at face value, then it would negate the accusations of inappropriate commodification. Thus, the issue of commodification is made ambiguous and subsequently left untouched in discussions of the exhibits among the general public.

Acceptance of technocracy, body fragmentation, and donor language facilitates the tolerance and even the celebration of Body Worlds as an institution in society. Although objections have been made to the exhibits for more than twenty years, Body Worlds has been able to thrive and expand. In a technocratic, capitalist society that celebrates innovation, commodification is almost inescapable. The cadavers used in

medical school anatomy labs are undeniably human; the smell of formaldehyde alone reaffirms the fact that the cadavers are deceased people. In spite of the constant reminders that the cadavers are the bodies of people who had lives of their own, there are still reports of commodification of the body in those settings which infringes on the dignity of the donors (Sharp, 2000). If this type of commodification occurs in these situations, it is not surprising that violations of human dignity may exist in exhibits of plastinated bodies or in any other medical setting. Plastination is another technological innovation enabling humans to better understand their bodies, but the mission of Body Worlds should not cloud the evaluation of the means by which it achieves its mission. In order to accurately assess the practices of Body Worlds, we must first understand the nature of the commodification present and then determine whether this commodification comes at the expense of the donors' dignity and autonomy.

## CHAPTER FOUR

### The Ramifications of Commodification in Body Worlds

Body Worlds has introduced many practices that reflect its value of only the donated bodies rather than the entire person. Although this indifference toward the entire person can most plainly be seen in the individual displays of the plastinates, the policies regarding informed consent also point to Body Worlds' views. While it is easy to deem all instances of commodification as immoral, commodification may be acceptable if the respect for autonomy and view of the inherent value of the body as a component of the person remains. Body Worlds' commodification of the body, however, has allowed for policies that inadequately protect the autonomy and dignity of the donors. These policies do not address the vast scope of ethical considerations that are required of an educational institution and museum using donated cadavers, and as a consequence, the donors are subject to abuse.

#### *Informed Consent*

The modern definition of informed consent developed as a result of the social and legal evolution of Western culture that began with the rise of scientific study. In the 17<sup>th</sup> and 18<sup>th</sup> centuries, the majority of the bodies used for anatomical research or medical education were obtained through body snatching. The only legal source of obtaining bodies for dissection was executed criminals (popularized by the view of dissection as an

extension of punishment beyond death), but the rate at which criminals were executed could not meet the demands of the scientific community (Garment et al., 2007). In rare instances, such as in Paris, unclaimed bodies of the poor could also be directed to research institutions and medical schools (Roach, 2003). Body snatching became a reliable way to obtain corpses, supplying a more consistent influx of bodies than from criminal execution or the donation of unclaimed bodies. It was not until the early 1800s that many European countries as well as the United States restructured the body acquisition process for medical institutions.

Before this time, there was no legal precedent for autonomous decision making and no requirement for any degree of informed consent for individuals to donate their bodies. The decision to donate the bodies of criminals and of the poor was made by the government without the consent of the individual. The Anatomy Act of 1832 in Great Britain and the state statutes implemented in the United States during the early 1800s expanded the sources of cadaver acquisition. These laws legalized the use of unclaimed bodies for dissection and made a legal path to body donation (D. G. Jones & Whitaker, 2012). Even though cadaver donation was now possible, it was not popular due to dissection's association with the poor and criminal classes and the view that dissection was desecration of the body. On the rare occasions that individuals did willingly donate their bodies after death, there was no procedure for donation documentation and the agreement was usually made verbally. Thus, the bulk of the cadavers used by medical schools or research institutions in the Western world were the remains of the poor and marginalized in society.

In the 20<sup>th</sup> century, body donation became more popular. In the early 1900s, the rise of funeral costs due to innovations in embalming techniques, and the global economic downturn of the 1920s paved the way for socially-acceptable body donations (Garment et al., 2007). Body donation became an alternative to expensive funerals and burials. In addition, the growing secularization of society helped to free body donation from the religious stigmas of the past. Even with these changes, the consent of the donor's kin superseded an individual's wish to donate and family members could bar willful donations. The most radical change to the system of body donation in the United States, however, was the Uniform Anatomical Gift Act (UAGA).

The UAGA, approved in 1968, standardized body and organ donation policies for the entire country and increased the number of donations by stating that the individual's wishes take precedence over the family's wishes. Willing-body programs were more tightly regulated and this strengthened the credibility of these programs in society. The most recent version of the law bars family members from overriding the consent of a donor and allows for easier transfer of bodies across states lines ("Uniform Anatomical Gift Act," 2009). Similar laws, like the UK's Human Tissue Act of 1961, have been passed in other Western countries and have strengthened the autonomy of donors.

This Western ideal of autonomy introduced during the Enlightenment brought about the idea of informed consent for scientific research and medical treatment. Generally, bioethicists agree that the decision-making rights of individuals should be respected, and as a result, the concept of informed consent was introduced as a way to more fully grant the right of autonomy to individuals. Informed consent not only addresses the duty of the researcher or physician to make information concerning the

subject or patient known but also includes the subject's or patient's understanding of the information (Beauchamp & Childress, 2009). Because the goals of informed consent are to prevent deception or coercion and to enable individuals to exercise their right to autonomy, all forms of informed consent have widely accepted requirements: competence, voluntariness, disclosure, understanding, and consent (Beauchamp & Childress, 2009). Although these five concepts are equally necessary for informed consent, the competence, voluntariness, and understanding of the individuals will be assumed for this thesis and the extent to which Body Worlds fulfills the remaining two requirements, disclosure and consent, will be analyzed in further detail.

Beyond the accepted requirements of informed consent, the nature of the informed consent must be appropriate to the setting. Therefore, a formulaic informed consent cannot be universal to all situations because it would not be specific enough to sufficiently address all of the five requirements. The informed consent required of the donation of cadavers after death is unique: there are multiple individuals who may give consent, several instances in which the consent can be given, and a variety of actions to which consent may be given. Donations can occur through willed-body programs when the individual is living or may be decided by the family or guardian after the individual dies. Conflicting interests such as religious beliefs or social norms may also influence the decision to donate one's body. The nature of body donation is such that once the procedure is started, the individual can no longer withdraw from treatment or research. Because of these considerations, a distinct type of informed consent is essential. This is even more apparent in Body Worlds, where the way the body will be utilized is not determined at the time consent is given. This uniqueness will also be considered in the

discussion of informed consent in Body Worlds as it applies to each of the requirements analyzed.

Disclosure is more than simply telling the individuals what will be done with their bodies: it also encompasses much of the background information for the procedure including the purpose of the donation and goals associated with that purpose, the nature of the authorization as it relates to consent, and any information that the professional or the donor feels may influence the decision to give consent (Beauchamp & Childress, 2009). In the case of Body Worlds, much of this information has yet to be determined at the time consent is given. While the broad goals of Body Worlds are made apparent (Body Worlds aims to spread anatomical knowledge through medical education and exhibits), the donors are not given any specific plan stating how their bodies will be used. The bodies are willed to the IfP, von Hagens' organization that not only provides plastinates for the Body Worlds exhibits but medical and research institutions as well. Donors are given the option to state whether or not they want their bodies to be exhibited or used for teaching, but it is unclear if the IfP solicits this information in its informed consent or if it is only honored if the donor states it of his own volition (Georgina Gomez, 2016). Furthermore, each whole-body plastinate is posed and displayed in a way that aligns with the theme of the exhibit, and some of these poses, like the two plastinates copulating, are extremely controversial. The themes of the exhibits are decided on a case by case basis after the bodies are in the custody of the IfP and are not disclosed to the donors' kin, denying the donors the right to make a decision on the status of their donation based on this information (Georgina Gomez, 2016).

In interviews, Body Worlds donors echo the sentiments of body donors to medical schools: they view their donations as a way to give back to society and further the field of science (Grinberg, 2008; Lin, 2008). The superordinate reflections of the donors support the idea that the intended use of the body is central to their willingness to donate. In other words, the primary interest for most prospective donors is that their bodies will help people increase their knowledge of health and science. It is reasonable to conclude that information regarding the poses of the displays (and the degree to which those poses fulfill the goal of anatomical education) is material to most donors. Therefore, this should be included in the disclosure by Body Worlds. Knowledge of the use of the donors' bodies may influence their decision to will their body for the purpose. An issue may arise if a future exhibit is created with the body of a donor whose opinions were known to have reasonably opposed such a display (because of the anonymity of the displays, however, it would be difficult for the donors' relatives to monitor if the wishes of the donors are honored). This lack of disclosure creates larger problems in the oversight of Body Worlds' adherence to the wishes of the donors. Donors should be able to determine whether the planned display of their bodies achieves the goals they have for their body after death.

A major determinant of informed consent is the nature of the consent given. Problems with the actual consent of the donors may not be cause for some concern for donors from the Western world, but it is exceedingly important when considering donors from Eastern countries like China and Russia. Most of the donors from the Western world made the decision to donate after seeing the Body Worlds exhibit, but the donors obtained through the Chinese government and Russian institutions did not have the

option to view their fate before donation (Institute for Plastination, 2016). Much of the early controversy of Body Worlds surrounded the cadavers von Hagens received from Eastern sources. Von Hagens admitted to using unclaimed Chinese bodies for plastination, and doctors from the University of Novosibirsk in Russia were sued for sending cadavers to Body Worlds to be plastinated (Bohannon, 2003). Body Worlds has since stopped plastinating unclaimed bodies, but there is no record that the already plastinated unclaimed bodies of Chinese citizen were returned to China (Lawrence, 2015). Although it can be argued that using unclaimed bodies for plastination is no different than using unclaimed bodies for cadaver dissection (which is legal in many states in the United States), there is a subtle yet important difference.

The bodies dissected in medical schools and research institutions are given socially-acceptable burials after they are dissected (usually cremation and burial at the medical school or on government property), but the plastinates are “stored or conserved” until they are needed again (Georgina Gomez, 2016). Therefore, the IfP does not have a process for the cremation or burial of the bodies they plastinate. The plastinates can be stored because their tissue does not decay, and as a result the deceased do not receive the default formal duties that society ascribes to people who die. Default formal duties are the actions that a society is obliged to take when the desires of an individual are unknown (Barilan, 2006). These duties may vary among cultures but are founded in the moral obligation that people feel to honor the dead. At the very least, when the desires of the dead are not known (as in the case of unclaimed bodies), the default formal duties of a society should be followed as a way to honor the deceased in a manner that is accepted by the society in which they lived. Any deviation from the default formal duties of a

society, like in Body Worlds, should require informed consent in order to protect the autonomy of the individual.

As of 2015, almost 15,000 people from around the world have willed their bodies to the IfP for plastination, and yet the IfP has made it a policy to not consider what will be done with a body until the donor dies (Lawrence, 2015). This policy highlights both the lack of foresight on the part of Body Worlds and the possible lack of understanding on the part of the donors. Without predetermined plans, the number of donors needed for an exhibit does not dictate the influx of donations coming to the IfP. This presents the opportunity for mismanagement if there is a surplus of bodies without plans for plastination. Moreover, it is apparent that the IfP does not require the adequate informed consent that is necessary for the treatments of the bodies it performs. When the competence, voluntariness, and understanding of the donors—requirements of consent that are primarily dictated by the donor—are assumed, Body Worlds still has gaping holes in disclosure and in some cases complete lack of consent. Although Body Worlds has shifted its donor base to exclusively willed donations, the anonymity of the plastinates makes it difficult to monitor whether the conditions set by the informed consent are honored. These deficits nullify the assertion that the consent of Body Worlds is adequately informed. Without an organized and transparent plan for bodies, it appears that Body Worlds is unprepared for the responsibilities associated with the appropriate care of bodies after death.

### *Museum Practices in the Display of Human Remains*

When the informed consent shows such clear deficits, it is no surprise that the practices of Body Worlds are called into question. Many opponents of Body Worlds cite the deviation from the traditional museum ethos as evidence of Body Worlds' prioritization of attracting audiences above maintaining the human dignity of the donors (Alberti, Bienkowski, Chapman, & Drew, 2009; Barilan, 2006; Burns, 2007; Hibbs, 2007). As an exhibition housed in museums and touted as a means to educate the public, Body Worlds should be held to the same standards as modern museums that display human remains. These museums are expected to fulfill the legal and moral obligations regarding human remains (although these obligations are typically met to maintain the dignity of the deceased person, not the body itself) through accepted practices in the treatment and contextualization of the remains.

In the Barilan's preliminary discussion of Body Worlds, he enumerates three obligations that he argues Body Worlds must have to the bodies it displays (Barilan, 2006). The practices that accompany use of a cadaver stem from obligations to the deceased person, to the loved ones or next of kin, and to society. Barilan argues that there is inherent value in the body by its very nature of being connected to a human, and only when the desires of the person, the loved ones, or society supersede the default formal duties can the display of bodies be justified. The International Council of Museums (ICOM) echoes Barilan's sentiment in its code of ethics (International Council of Museums, 2013). In its minimum standards for museums, it recognizes the obligations a museum has to the society in which the museum operates, to the culture or people group from which the remains come, and to the deceased persons themselves. These obligations

shape the standards that the ICOM has set for the obtaining, display, and care of human remains.

In the ICOM's code of ethics, the provisions describe the "stewardship" with which the museum must treat the "public inheritance," or the collections that they display (International Council of Museums, 2013). The language of the ICOM implicitly asserts that the primary role of the museum is to serve the community. It is the museum's responsibility to leave a legacy of the "natural, cultural, and scientific heritage" of the displays in the society in which it is housed (International Council of Museums, 2013). The discussion of stewardship parallels Barilan's assertion that cadavers are "on loan for the sake of science and medicine" rather than owned (Barilan, 2006). Thus, the benefits to society in terms of developing its awareness and understanding of a subject matter are essential considerations when determining how to display a collection.

In a similar way, museums inherit the heritage of the displays from the culture or people group from which they obtain the displays. When specifically discussing human remains, the Code of Ethics states that museums must consider the interests and beliefs of the original community. An ethically sound exhibit should reflect the values of the community in the most accurate and factually grounded way possible. Moreover, museums are obligated to display collections in a manner that is consistent with the values and beliefs of the source. This also stems from the museum's role as a steward of the knowledge that accompanies a display. Interestingly, the ICOM asserts that museum collections "have a character beyond that of ordinary property, which may include strong affinities to national, local, regional, ethnic, religious, or political identity" (International Council of Museums, 2013). In this statement, the ICOM establishes that the wishes and

beliefs of the individual and the community with which the individual identifies persist even after the transfer of ownership.

These broad, overarching statements about the purpose of museums informs and dictates the specific policies that the ICOM and many other museum ethicists recommend. All of these standards were developed with the belief that the human dignity is paramount and the exploitation of humans to further the museum's own agenda is unethical. Given these goals and the purpose of museums, the best practices in the display of collections will be compared to the practices of Body Worlds. The policies regarding the natural respect of the displays and the removal of displays will be analyzed for deficits in Body Worlds' museum ethos.

The ICOM maintains that “museums are responsible for the tangible and intangible natural and cultural heritage” of the displays (International Council of Museums, 2013). The tangible aspects of the display (the physical object) should not be prioritized above the intangible aspects of the display (the cultural, societal, or relational significance). The central goal of a museum display is to contextualize the tangible in such a way that the intangible can be perceived. In the case of mummified bodies, for example, the body is often surrounded by religious artifacts with labels that explain the cultural practices of Ancient Egyptian society. In this way, the tangible and intangible work in tandem to inform the visitors of not only the cultural practices of a certain people, but to explain the religious and social motives behind the practice as well. In the case of Body Worlds, however, the tangible is manipulated in such a way that the intangible is masked.

One fundamental difference between Body Worlds and traditional museums is that the remains, namely the whole-body plastinates, have been altered for the sole purpose of being displayed. Body Worlds manipulates the bodies in such a way that the tangible no longer has ties to the culture or society from which it originated. Science or natural history museums may manipulate natural remains inasmuch to further clarify and point to the intangible. Even anatomical museums, which house some of the most controversial displays of human remains, are historical and cultural museums of the medical field that display remains originally preserved and used for anatomical study. Body Worlds is unique because the purpose of posing the plastinates is not to enhance the learning of anatomy (some displays such as “The Centaur,” where the upper body of a human plastinate is mounted on the body of a plastinated horse, even hinder the study of human anatomy) but to entice visitors. The plastinates that have been thematized, taking the physical body and ascribing a new intangible meaning to it that no longer reflects the source. If Body World’s intention is truly anatomical education, then creating fictional, life-like personas for the whole-body plastinates seems superfluous and counterproductive to the missions of both the institution and museums in general.

The ICOM’s code of ethics also includes provisions for the removal of displays should they become worn or damaged. It requires that every collection in the museum have procedures for determining if a display should be removed and for removing the display (International Council of Museums, 2013). Body Worlds, however, has adopted a policy of denial: von Hagens maintains that the plastinates can maintain in good condition for about 1,000 years “with occasional cleaning” (Lawrence, 2015). Furthermore, the IfP’s current policy provides for the plastinates to be stored indefinitely

if no longer needed in the exhibitions (Georgina Gomez, 2016). This policy undermines the ICOM's standard practice by creating a policy that does not address the removal of human remains.

Most evident is that fact that such a policy overtly treats the plastinated human remains as objects and not features of people with inherent value. Storing the bodies until they can be used again implicitly asserts that the utility of the plastinates takes priority over any obligations to personal wishes. Under this policy, a plastinate's usefulness in future Body Worlds exhibitions would be decided based on how the plastinate's pose, a manufactured and now permanent configuration, will fit into the theme of a new exhibition. This policy is inconsistent with the ICOM's statement on the "strong affinities" of the donor or source community and potentially the wishes of the donors as well (International Council of Museums, 2013). Donors gift their bodies to Body Worlds to contribute to educational or research endeavors, which do not reasonably include being stored for potentially hundreds of years. When there is no educational or research value that can be justifiable, the default formal duties to the deceased person should be performed, which include honoring the deceased through a socially-acceptable burial.

More troubling is the apparent spectacularism in the policies regarding the removal of plastinates from display. These policies are unrealistic when taking the institution of Body Worlds into consideration. With about 15,000 willed bodies currently and the anticipation of more bodies to be willed, the adequate storage of these bodies is cause for concern. In the next 150 years alone, all of the current willed donors will die and the plastination process will ensue. Each Body Worlds exhibition contains human remains from nearly 200 donors, which means that in order to utilize each of the current

willed bodies, about 75 exhibitions would have to be running at the same time, neglecting the influx of new donors and the number of plastinates created for medical and research institutions. Given the current state of Body Worlds, it is unlikely that Body Worlds would have the resources or the public interest to plastinate that number of bodies and maintain 75 exhibitions (Lawrence, 2015). It is inconceivable that Body Worlds would be able to display all of the bodies it plastinates and just as inconceivable that even half of those bodies could be stored adequately without significant expense, security measures, and governmental oversight. Furthermore, the argument that the plastinates will remain in a presentable condition for 1,000 years is difficult to accept when visitors are allowed to touch and handle the plastinates and the plastinates are being moved from city to city in a touring exhibition. Given that there are only about twenty years of experience with plastination, the extrapolation to 1,000 years is far-fetched. In 1,000 years it is unlikely that Body Worlds will even exist, let alone continue to display bodies. Because of all of these factors, Body Worlds' current removal policy does not sufficiently comply with museum standards and should be altered to address the real and present issue of the removal of the plastinates from display.

Although there are aspects of Body Worlds that are at odds with the current norms of museums, the argument can be made that the introduction of exhibitions like Body Worlds is an innovation in line with the current transition in museology. In the twenty-first century, there has been a significant shift in what museologists have defined as the role of a museum. Traditionally, the museum has been seen as an institution for well-founded and definitive knowledge on a specific topic. With the rise of technology, however, this perception has been changing. Among the issues that current museums

must face are competing points of view made public through new media outlets, public apathy in light of more exciting learning tools, and the influence of stakeholders wanting commercial success (Marstine, Bauer, & Haines, 2011). To combat the looming threat of becoming obsolete in the current age, many museums have shifted their presentation of information to reflect the changing times. Museums have included personal narratives and alternative interpretations to their displays, acknowledging the variety of experiences that may be present and the battling the traditional museum practice of presenting one interpretation often grounded in the views of the majority or the powerful in society. To engage visitors, museums have also constructed more interactive displays that allow the viewers to actively learn from and contribute to the exhibits. In light of the transition in museum practices, it seems as though Body Worlds may reflect the times.

Body Worlds does indeed employ many of the tools utilized by natural science museums to engage a younger audience, including demonstrations of lungs at work and the extension and contraction of muscles during movement. These are the same type of educational tools used to teach students about the respiratory and musculoskeletal systems that teachers use in classroom all over the country, except Body Worlds uses human tissue instead of rubber bands, balloons, and meter sticks. Additionally, the plastinated bodies that are used in medical and research institutions have been noted for both their cost-effectiveness and their superiority to other alternative methods of anatomical education beyond cadaver dissection (Riederer, 2014). However, beyond these two facets of Body Worlds and the IfP, there is no substantial empirical evidence that points to the anatomical education of the public through the Body Worlds exhibitions.

In a survey collected from visitors of the Body Worlds exhibition in Vienna, there were slight gains in health awareness and healthy lifestyles after six months, but the gains could not be definitively linked to viewing Body Worlds (Burns, 2007). Even if these improvements in health and anatomical education could be attributed to Body Worlds, there are several methods of teaching anatomy to the public that are cheaper, more accessible, and less controversial. Innovations such as the National Institute of Health's Visible Human Project and other online body atlases, make Body Worlds significantly less justifiable given the visitors' slight improvements in anatomical and health knowledge. Although anatomical and health education of the public is the central aim of the exhibitions, Body Worlds has only conducted one post-visit survey, in Vienna, as of 2007 to evaluate the efficacy of the exhibitions (Burns, 2007). This calls into question the veracity of Body Worlds' prioritization of education over commercial success.

### *The Fascination with Death*

What is more evident in Body Worlds is the capitalization of the Western world's fascination with death. Body Worlds has been marketed as the exhibition of "real human bodies," created to show the public the inner workings of the human body (Burns, 2007). Even von Hagens himself has cited an additional motivation for the exhibitions. In an interview with *The Observer*, von Hagens explained:

"Except for the short period of the Renaissance when anatomy was studied widely and available to artists, intellectuals and medical students, the interior of the body has always been connected with horror and gruesome effects - it is Hitchcock, it is Frankenstein, or the movie industry obsessed with killing. At Körperwelten [Body Worlds] the gap between life and death is narrowed" (O'Rourke, 2001).

Beyond simply teaching the public about the structures and functions of the body, von Hagens also wants the visitors to encounter death. Von Hagens alludes to the Renaissance age, when anatomical museums carried themes of mortality and the fleetingness of life. His vision is not only to teach scientific lessons but to teach moral ones as well.

Unfortunately, this noble endeavor has been marred by the atmosphere of spectacularism in the exhibitions. In the Plastinarium and in most of the Body Worlds traveling exhibitions, visitors are slowly acclimated to the exhibit: generally, the visitors see skeletons and plastinated organs and view comparisons between diseased and health tissues. The first whole body plastinates viewed, like a male baseball player or a female figure skater, are benign and carry no overt moral theme. The last set of plastinates are the most controversial. These include displays containing sensitive or graphic poses, modeling famous works of art, and even depicting fanciful creatures. This progression from the most to the least educational plastinates leads to a “foot in the door” paradigm: visitors accept plastination and Body Worlds by connection when viewing the more educational plastinated displays, and because of this they are more receptive to some of the more controversial displays. The same techniques used to engage the audience with the more educational plastinates (holding a human brain to more closely analyze the grey and white matter, viewing a cancerous tumor up close) serve as fuel for the spectacularism and voyeurism surrounding the whole-body plastinates. Visitors are allowed to touch the plastinates and view them at a close proximity, but these relaxed policies contribute little to anatomical learning. The plastinates do not feel like human flesh (the texture of the muscles and ligaments are as stiff and immovable as plastics), and so touching them does not lend itself to the understanding of the human body.

Visitors touch and are invited to touch because it adds to the excitement and scandal of the exhibition: after they leave, the visitors can say truthfully that they have touched a dead human body.

Barilan cites three major reasons for showing human remains that have been central to displays in the past: the documentation of a personal story such as the relics of a saint, the demonstration of an anatomical finding like the skeleton of a patient with acromegaly, or the authentication of a scientific principle, such as the remains of a healthy lung versus a diseased one (2005). In each of these cases, he argues that the story of the person must accompany the didactic story of the human remains in order to maintain the dignity of the deceased person. In Body Worlds, however, anonymity is a core component of the exhibitions. This is done in part to protect the donors and their families (the controversy of Body Worlds is so prevalent that death threats to the exhibitors and vandalism to the plastinates are common), but the anonymity also serves to distance the viewers from the realities of death. Although Body Worlds attempts to distinguish itself from pop culture's approach to mortality, it actually perpetuates the sanitization of death in modern society. This is no more evident than in the displays modeled after notable works of art.

### *Art in Anatomy*

The influence of art, specifically Renaissance art, can be seen throughout all of the Body Worlds exhibits. Quotes from Renaissance thinkers and replicas of famous sixteenth century paintings line the exhibition halls (Fras, 2006). Many of the most controversial plastinates in Body Worlds are actually replicas of famous artwork. Among

these are “The Runner,” inspired by Boccioni’s *Unique Forms of Continuity in Space*; “Open Drawer,” based on Dali’s *Anthropomorphic Cupboard*; “The Skin Man,” modeled after Michelangelo’s *Bartholomew* on the ceiling of the Sistine Chapel; and “Horse and Rider,” constructed from multiple artistic interpretations of the Four Horsemen of the Apocalypse (O’Rorke, 2001). The debate surrounding these displays focuses on whether Body Worlds is attempting to create works of art with the bodies instead of educational tools. In a more general sense, the controversy also speaks to opponents’ rejection of the use of human tissue in art. Although there is value in using human tissue in artistic works in some cases, in the case of Body Worlds the use of human bodies to recreate paintings and sculptures disregards the original meaning of these works of art and is not justified when the guaranteed objectification of the body that denies the close relationship of the cadaver with the deceased person is considered.



*Unique Forms of Continuity in Space* by Umberto Boccioni (left, (Boccioni, 1913) and “The Runner” (right, © Gunther von Hagens' BODY WORLDS, Institute for Plastination, Heidelberg, Germany, [www.bodyworlds.com](http://www.bodyworlds.com))

Since the beginning of anatomical study, art has been integral to the research and dissemination of anatomical education. In a time when there was no other option for conveying the insights learned by cadaver dissection—no long-term preservation techniques, no photographic capabilities—expertise in drawing was paramount to educating physicians and scientists with accuracy. With the introduction of *Gray's Anatomy*, the medical field began to distance itself from the art world. In an attempt to produce a thorough and comprehensive textbook of the body, Henry Gray also introduced a new approach to anatomical study that forfeited the aesthetic quality of anatomical depictions of the past for a neutral, clinical one (Kemp & Wallace, 2000). What is more, new advances in the visual documenting of the human body has made artistic liberties in the representation of the human body all but obsolete. The biomedical field generally places the scientific value of the depictions ahead of the aesthetic or social value, which has both allowed the scientific realm to study anatomy in a more efficient way and enabled the disregard of the whole person, which Barilan calls the biopsychosocial model of the person (Barilan, 2007).

The value of these anatomical depictions popularized during the Renaissance lies in their ability to contextualize the physical body in society. Some even credit these early anatomical artists with ushering in the change of the perception of the body in society (Batur, 2007). These artists depicted muscles, bones, and inner organs in the same tradition as exemplifications of male and female beauty, asserting that the inner workings of the human body were as beautiful as the outer features. In this way, early anatomical artwork served to reconcile people to their own bodies and bridge the gap between the scientific and the social. Through didactic figures, anatomical artists showed that not only

is the human body in its entirety beautiful, but it also informs the psychological and social aspects of the human experience as well.



*St. Catherine of Alexandria* by Raphael (left, 1507) and *Cross Sections of Male and Female Anatomy* by Jacques Fabien Gautier D'Agoty (right, D'Agoty, 1752)

The work of Jacques Fabien Gautier D'Agoty exemplifies the role of anatomical art in changing the perceptions of society. In his book, *Anatomie generale des viscères en situation*, D'Agoty poses the bodies in the figures of the textbook much like the ideal bodies in Renaissance art (D'Agoty, 1752). The women appear ethereal with their heads tilted, their profiles visible, and their hands daintily placed on their body. The same mannerisms can be seen in famous Renaissance art like *St. Catherine of Alexandria* by Raphael: St. Catherine's head is tilted to the heavens and her hands are softly pressed to her body (1507). Both D'Agoty and Raphael place their figures in front of natural backgrounds (although in the case of D'Agoty's figures, the age and wear of the original book makes it difficult to make out the brick wall and shrubbery in the background).

Whether on a large canvas or as a figure in a textbook, both Renaissance and anatomical artwork shared these ideal characteristics in the depictions of their subjects. The celebration of the body and how it informs the other aspects of the person are central themes to both Renaissance and anatomical works.

Although for much of the 19<sup>th</sup> and 20<sup>th</sup> centuries this rich tradition of artistic representations of anatomy was largely ignored in the scientific field, the artistic realm embraced it whole-heartedly. Interestingly, the initial push for the biopsychosocial model of the person came from art and not medicine (Barilan, 2007). Throughout the centuries, artists of anatomical works and artists who have benefitted from anatomical study have used their works to emphasize the view of the person as body and soul in the human experience, making some of the most notable commentary on humanity and mortality. Even the use of human tissue in art, like Gideon Gechtman's use of his own urine in *Urine*, takes a seemingly useless component of everyday life to convey the trials of illness and the hardship that accompanies chronic disease (Barilan, 2007). Gechtman, a man suffering from rheumatic heart disease, displayed containers full of urine with papers detailing his food and water consumption for that particular day. He used something that most people overlook to comment on the attention that ill people must have when dealing with their disease and how the weight of this attention goes largely unnoticed in society. Works such as *Urine* demonstrate that human tissue can be used to positively contribute to the overall meaning of an artistic piece, but this aesthetic quality is lost in Body World's treatment of the displays.

The key difference between artists like Gechtman and Body Worlds is that these artists create original works of art with themes inspired by their own experiences, while

Body Worlds fashions representations of famous artwork with the plastinates. Through these replicas, Body Worlds attempts to convey the same themes that are conveyed through the original work, but the utilization of real human bodies to portray these themes creates the semblance of parody rather than respect for the original work. The subtleties and intricacies of the original paintings and sculptures are lost in the almost literal representations of mortality and humanity in the plastinates. In contrast to the early anatomical pieces that worked to integrate the scientific and the social, the displays in Body Worlds separate the two even further by effectively dividing the exhibit into two sections: the educational displays with labels of the body parts and the artistic displays that lack these educational resources and serve merely as entertainment.

The ineffective use of the plastinates as works of art is not a reason to create original works of art in the Renaissance tradition out of the plastinates but instead highlights the question of necessity. Body Worlds' artistic displays, even if they were not reproductions of famous works, place invented personas over the original identities of the donors. This is in direct contrast to the goal of anatomical artwork. Art aims to convey the humanity of the person through the depiction of the physical body, not to replace the original story of the person with a contrived story that seeks to point to mortality and humanity. Anatomical artwork is most effective in a medium other than donated remains because it allows the identity of the artist, as in the case of *Urine*, or the human experience (when the artwork is not of a particular person) to be conveyed free from conflicting messages. Because of the deep association of a cadaver with the deceased person, Body Worlds should not create new art but should allow the inherent demonstration of humanity to be highlighted in the plastinates they display, free from

embellishment. This cannot be achieved through the spectacularism that accompanies the fashioned personas of posed plastinates.

While artwork influenced by anatomy and medicine achieves the union of the “story of the body” with the “story of the person”, Body Worlds fails to do so (Barilan, 2005). Gunther von Hagens claims to expose the public to its own mortality by forcing visitors to face the mortality of others:

“We think about everything too much yet we never ponder our own bodies and we should. Our bodies have been kept a secret from us and we fear pain and death of the body. I am here to open up and reveal that secret to everyone” (Cavendish, 2002).

In the same breath, though, he explains the value of clinical detachment:

“The viewer must also have clinical detachment. They must see that body as a purely physical specimen, not a person. If I put the dead people's names and histories, the exhibition would cease to be what it is. It would become like a holocaust museum, a place of deep sadness” (Cavendish, 2002).

What von Hagens fails to realize is that truly meaningful encounters with death always require a connection between the body and the deceased person, even if that connection elicits sadness. To believe that one is able to face the realities of death without acknowledging that the body represents more than a physical object is to divorce the person and the greater meaning of life from the realities of the physical world. Through Body Worlds’ deficits in informed consent and the disregard for maintaining the dignity and identity of the deceased, it is clear that the Body Worlds places priority on the commercial success of its exhibitions over the accurate and holistic education of its visitors. The commodification present in Body Worlds is not justifiable given its practices: Body Worlds exploits the altruism of its donors by failing to truly contribute to the democratization of anatomy while continuing to benefit financially from the exhibits.

Because of these reasons, Body Worlds exhibitions should not be allowed to continue its exhibitions without a significant revising of Body Worlds' policies. These policies, however, are reflective of the foundation upon which the institution is built. Addressing the glaring cases of dehumanization in Body Worlds by altering only its practices neglects the fundamental issues of dualism and commodification of the body in the exhibitions. For this reason, policies changes are not enough.

## CHAPTER FIVE

### Why Changes in Policies are not Enough

In these preceding chapters, the practices of Body Worlds have been analyzed through three lenses: in the context of history, in light of ethical principles, and in comparison to contemporary museums and artwork. These differing viewpoints allow for a more comprehensive understanding of Body Worlds as an institution, taking its historical influences and the myriad policies to which it adheres into consideration. Influenced by increasing technological capabilities and widening acceptance of the macabre in public arenas, gaping holes in Body Worlds' policies hinder informed consent and devalue the personhood of the donors, relying on spectacularization rather than ethical principles to guide the practices of the exhibitions. Exploitation of the donors can be seen through these policies, which insufficiently inform and even mislead donors and mask the donors' experiences in its controversial displays.

Because of its touted role as an educational exhibition using human remains, Body Worlds has two primary obligations: to its donors and to society. The first obligation stems largely from the idea of human dignity, a concept that—though it is abstract and carries multiple interpretations—generally emphasizes the intrinsic worth of a human being that leads to the ideal of honoring an individual's self-determination and privacy and maintaining a level of respect rooted in the individual's status as a human (Beauchamp & Childress, 2009). The second obligation is rooted in the social contract of

an institution and the public: in order for a society to exist, there must be confidence that the agreed-upon rights built on the principle of human dignity will be honored by societal institutions. In addition, the obligation to society can be viewed as an outgrowth of the common morality apparent in all societies. Among what Beauchamp and Childress deem the “standards of action (rules of obligations)” of common morality are “tell the truth,” and “keep your promises” (Beauchamp & Childress, 2009, p. 3). Beyond the obligation to avoid the degradation of society, the common morality argues that individuals—and by extension, institutions—have an obligation to contribute to society by upholding moral standards. Body Worlds’ obligations to both the individual and society require it to function in a manner consistent with the principles of autonomy and respect for humanity. It is the violation of these principles that warrant the discontinuation of Body Worlds’ exhibits as they currently exist.

This thesis has thoroughly analyzed the practices of Body Worlds, but the question of whether the exhibits are irredeemable still remains. Unfortunately, the deficits in informed consent and neglect of the personhood of the donors arise from a foundational flaw that has led to the systemic disregard of autonomy and human dignity. Based on the organization of the exhibits and the degree of planning on the part of Body Worlds in respect to the individual displays, it is obvious that the ethical issues rampant in Body Worlds do not stem from lack of oversight. The informed consent used for donors is intentionally ambiguous to allow for more flexibility in the planning of the displays. This is done for the convenience of the exhibitors, not out of lack of knowledge. Though the consent contains inadequate disclosure of the intended use of the bodies, it enables the exhibitions to create the controversial displays that attract and horrify

audiences through the justification that the donors agreed to the display of their bodies. Not only does the plastination process itself depersonalize the bodies of individuals, it also perpetuates dualistic thoughts about personhood, which often disparage the body's intrinsic worth in light of the soul or mind. Body Worlds' practices actually harm the deceased donors and society by failing to fulfill the interests of the donors.

Running parallel to Body Worlds' efforts to democratize anatomy is a metanarrative of the shifting preference of the general public for more exciting and thrilling stimuli instead of accurate representations of humanity and its relationship to death. This idea of a metanarrative for museum exhibits is best described by Leahy, who presents the museum as a "site of social and corporeal practices" (2012, p. 3). In addition to its educational function, museum exhibits also play a role in setting what society deems socially acceptable. The shift in museum depictions from primarily didactic to open-ended discussion reflects and has even prompted the societal value of relativism and pluralism over absolutism. In the same way, Body Worlds hints at society's priority of experience over knowledge. While this desire is not inherently misguided, it does introduce the opportunity to seek out experiences at the expense of truth. The fact that Body Worlds has been in exhibition for more than twenty years is indicative of the public value of experience, but more dangerous, the disconnect between experience and understanding. Body Worlds and other anatomy exhibits like it contribute to the propensity to overlook or even trivialize important discussions about the body and its relationship to the human experience in life and in death. Even if Body Worlds were to alter its policies to include a more thorough disclosure to its donors, a plan for the disposal of the bodies after they are exhibited, and the exchange of voyeuristic displays

for those that are more educational, this perpetuation of the depersonalization and devaluation of the body would still remain. Any measures taken to curb the spectacularization of the exhibits without ending them completely only treat the symptoms of body devaluation and do not address the root cause.

More than anatomical education, which has little utility in the public sphere beyond improved appreciation of the human body, the public needs education in understanding the body in the context of death (Burns, 2007). According to the Centers for Disease Control and Prevention, almost 70% of deaths in the US occur in a hospital, nursing home, or another similar institution (2008). Additionally, major depressive episodes are reported in 29-58% of people one year after the death of a loved one (Maj, 2012). In society today, most people are shielded from the realities of death and when they personally encounter death: they do not know how to cope. These statistics underscore the need for meaningfully discussing experiences with death, not “seeing death without the burden of cruelty,” which von Hagens proposes through his exhibitions (O’Rourke, 2001).

In light of this finding, then, how should body devaluation and depersonalization as a result of commodification be treated in society, and more specifically in an environment of public education? Incidentally, further democratization of medical education may aid in this. The current approach to anatomical education in medical schools is a prototype of what an instruction in both the human body and the human experience can achieve. Often cited as teaching clinical detachment, medical school curricula across the United States have actually adapted to answer the calls for a more holistic medical education in recent years. In the past two decades, while Body Worlds

continued to gain notoriety, medical schools across the United States and abroad revised their anatomy courses to address the deficits identified in physicians' abilities to discuss death with patients. Once discouraged by professors, students are now encouraged to engage with their peers and openly discuss their experiences during the anatomy course (Warner & Rizzolo, 2006). Themes of death and mortality are taught in three stages in most modern anatomy courses: fostering an environment where expressing feelings is affirmed, modifying the language used to discuss death, and providing opportunities for closure after the experience with death (Rizzolo, 2002). Integration of these themes into encounters with death in a public setting will allow members of society to become more aware of their own mortalities and better equipped to cope with death in their own lives.

One museum excelling in this is the Morbid Anatomy Museum. Opening in 2014 in Brooklyn, New York, this small, nonprofit museum seeks to celebrate and exhibit “artifacts, histories and ideas which fall between the cracks of high and low culture, death and beauty, and disciplinary divides” (“About Us,” 2014). With exhibitions like “The Art of Mourning” and “Taxidermy: Art, Science, and Immortality,” the Morbid Anatomy Museum sheds new light on anatomical curiosities and comments on how humans have historically perceived and coped with bodily remains and death. The Morbid Anatomy Museum is a stark contrast to Body Worlds, exemplified in its mission stated by the museum's creative director, Joanna Ebenstein:

“I want people to walk in and say: ‘Wow, this is really interesting. Why don't we know about that? And what does it say about us today that we don't know about it’” (Schuessler, 2014).



Moulages in the Morbid Anatomy Museum's House of Wax exhibition (Daniel Schvarcz, 2014)

This idea is also echoed in the disclaimers to viewers about some of the more graphic pieces:

“We believe that it is our duty as a cultural and educational institution to critically display items that may otherwise be ignored or erased from cultural memory. By better understanding the past, perhaps we can better understand the present” (“House of Wax: Anatomical, Pathological, and Ethnographic Waxworks from Castan’s Panopticum, Berlin, 1869-1922,” 2014).

The Morbid Anatomy Museum allows its visitors to engage in discussions about death without spectacularizing the human remains or making the museum a “place of deep sadness” (Cavendish, 2002). This museum (although its popularity has primarily been limited to New York City most likely due to its status as a nonprofit museum and the more subdued presentation of the displays) has introduced a unique niche in museology. In the years to come, this museum, which in some respects is a reaction to the

current societal norm of pushing death away, has the potential to shift the societal trend towards more productive talk about the human body and its relationship to death.

After tracing the progression of anatomical study from its origins in artistic depictions to the democratization of anatomy in the current age, one thing remains constant: the human body is an extraordinary thing that warrants study but also deference because of its inextricable ties to one's sense of self. Our bodies allow us to experience and participate in the world around us and consequentially inform our beliefs and actions. They are part of our identities. To divorce the body from the person and in effect strip individuals of their identities is depersonalization, which denies the foundation in which human dignity is rooted. Any institution that condones depersonalization must be condemned, regardless of its appeal in society. Body Worlds is no exception. Beyond safeguarding human dignity, educational institutions in society also have a duty to pursue and dispense knowledge in an ethical manner and to promote substantive conversations among the public. When this occurs, both the individuals and the public as a whole are honored.

## BIBLIOGRAPHY

- About Us. (2014). Retrieved October 30, 2016, from <http://morbidanatomymuseum.org/visitor-info/about-us/>
- Alberti, S., Bienkowski, P., Chapman, M., & Drew, R. (2009). Should we display the dead? *Museum and Society*, 7(3), 133–149.
- Autopsy is held before sell-out audience. (2002, November 21). *Birmingham Post*, p. 9. London, UK.
- Barilan, Y. M. (2005). The story of the body and the story of the person: Towards an ethics of representing human bodies and body-parts. *Medicine, Health Care and Philosophy*, 8(2), 193–205. <https://doi.org/10.1007/s11019-004-6492-2>
- Barilan, Y. M. (2006). Bodyworlds and the Ethics of Using Human Remains: A Preliminary Discussion. *Bioethics*, 20(5), 233–247. <https://doi.org/10.1111/j.1467-8519.2006.00500.x>
- Barilan, Y. M. (2007). Contemporary Art and the Ethics of Anatomy. *Perspectives in Biology and Medicine*, 50(1), 104–123. <https://doi.org/10.1353/pbm.2007.0000>
- Batur, E. (2007). Anatomy, Aesthetics, Ethics: a bird's-eye reading attempt. *P: Art & Culture*, (14), 36–43.
- Beauchamp, T. L., & Childress, J. F. (2009). *Principles of Biomedical Ethics* (6th ed). New York: Oxford University Press.
- Boccioni, U. (1913). *Unique Forms of Continuity in Space* [Bronze].
- Bohannon, J. (2003). Anatomy's Full Monty. *Science*, 301(5637), 1172–1175. <https://doi.org/10.1126/science.301.5637.1172>
- Brenner, E. (2014). Human body preservation – old and new techniques. *Journal of Anatomy*, 224(3), 316–344. <https://doi.org/10.1111/joa.12160>
- Buchanan, A. E., & Brock, D. W. (1989). *Deciding for others: the ethics of surrogate decision making*. Cambridge [England] ; New York: Cambridge University Press.
- Burns, L. (2007). Gunther von Hagens' BODY WORLDS: Selling Beautiful Education. *The American Journal of Bioethics*, 7(4), 12–23. <https://doi.org/10.1080/15265160701220659>

- Cavendish, L. (2002, November 18). I will cut up my father, but even I couldn't do it to my own wife. *The Evening Standard*, pp. 25–26. London, UK.
- D'Agoty, J. F. G. (1752). *Anatomie generale des viscères en situation, de grandeur et couleur naturelle, avec l'angeologie, et la nevrologie de chaque partie du corps humain*. Paris.
- Daniel Schvarcz. (2014). *Moulages demonstrating lupus and leprosy* [Photograph]. Retrieved from [http://morbidanatomymuseum.org/mword/wp-content/uploads/2015/09/%C2%A9DanielSchvarcz\\_20140928\\_205.jpg](http://morbidanatomymuseum.org/mword/wp-content/uploads/2015/09/%C2%A9DanielSchvarcz_20140928_205.jpg)
- Deaths by place of death, age, race, and sex: United States, 2005. (2008). Retrieved October 30, 2016, from [http://www.cdc.gov/nchs/data/dvs/Mortfinal2005\\_worktable\\_309.pdf](http://www.cdc.gov/nchs/data/dvs/Mortfinal2005_worktable_309.pdf)
- De Herder, W. W. (2012). Acromegalic gigantism, physicians and body snatching. Past or present? *Pituitary*, 15(3), 312–318. <https://doi.org/10.1007/s11102-012-0389-5>
- Descartes, R. (1911). *The Philosophical Works of Descartes*. (E. S. Haldane, Trans.) (1st ed., Vol. 1). Cambridge University Press. Retrieved from <http://selfpace.uconn.edu/class/percep/DescartesMeditations.pdf>
- Feinberg, J. (1984). *Harm to Others: The moral limits of criminal law* (Vol. 1). New York: Oxford University Press.
- Fras, B. (2006). Body Worlds 2: The Anatomical Exhibition of Real Human Bodies. *Exhibit*, 49(4), 477–482.
- Garment, A., Lederer, S., Rogers, N., & Boulton, L. (2007). Let the Dead Teach the Living: The Rise of Body Bequeathal in 20th-Century America. *Academic Medicine*, 82(10), 1000–1005. <https://doi.org/10.1097/ACM.0b013e318149e986>
- Georgina Gomez. (2016, April 14). RE: Body Donation Specifics.
- Goold, I. (2014). Why does it matter how we regulate the use of human body parts? *Journal of Medical Ethics*, 40(1), 3–9. <https://doi.org/10.1136/medethics-2012-100941>
- Grinberg, E. (2008, June 30). Donors sign up to have bodies dissected, displayed. *CNN*. Retrieved from <http://www.cnn.com/2008/TECH/science/06/30/body.worlds/>
- Gubener Plastinate GmbH. (2006). von Hagens Plastination | REAL ANATOMY FOR TEACHING. Retrieved October 12, 2015, from <http://www.vonhagens-plastination.com/>
- Harrington, D. E., & Sayre, E. A. (2006). Paying for Bodies, But Not for Organs. *Regulation*, 29(4), 14–19.

- Herring, J., & Chau, P.-L. (2014). Interconnected, inhabited and insecure: why bodies should not be property. *Journal of Medical Ethics*, 40(1), 39–43. <https://doi.org/10.1136/medethics-2012-100904>
- Hibbs, T. (2007). Dead Body Porn. *The New Atlantis*, (Winter), 128–131.
- House of Wax: Anatomical, Pathological, and Ethnographic Waxworks from Castan's Panopticum, Berlin, 1869-1922. (2014). Retrieved October 30, 2016, from <http://morbidanatomymuseum.org/exhibitions/house-of-wax/>
- Hunter, W. (1774). *Anatomia Uteri Humani Gravidi* (1st ed.). Birmingham. Retrieved from <http://resource.nlm.nih.gov/2491060R>
- Institute for Plastination. (2006). The Biography of the Scientist. Retrieved from [http://www.bodyworlds.com/en/gunther\\_von\\_hagens/biography\\_scientist.html](http://www.bodyworlds.com/en/gunther_von_hagens/biography_scientist.html)
- Institute for Plastination. (2016). Bodymobil :: Körperspende zur Plastination. Retrieved May 17, 2016, from [http://www.koerperspende.de/en/body\\_donation.html](http://www.koerperspende.de/en/body_donation.html)
- International Council of Museums. (2013). *ICOM Code of Ethics for Museums*. ICOM. Retrieved from [http://icom.museum/fileadmin/user\\_upload/pdf/Codes/code\\_ethics2013\\_eng.pdf](http://icom.museum/fileadmin/user_upload/pdf/Codes/code_ethics2013_eng.pdf)
- Jones, D. G., & Whitaker, M. I. (2012). Anatomy's use of unclaimed bodies. *Clinical Anatomy*, 25(2), 246–254. <https://doi.org/10.1002/ca.21223>
- Jones, R. (2012). Leonardo da Vinci: anatomist. *The British Journal of General Practice*, 62(599), 319. <https://doi.org/10.3399/bjgp12X649241>
- Kahane, G., Everett, J. A. C., Earp, B. D., Farias, M., & Savulescu, J. (2015). “Utilitarian” judgments in sacrificial moral dilemmas do not reflect impartial concern for the greater good. *Cognition*, 134, 193–209. <https://doi.org/10.1016/j.cognition.2014.10.005>
- Kemp, M., & Wallace, M. (2000). *Spectacular Bodies: The Art and Science of the Human Body from Leonardo to Now*. University of California Press.
- Lantos, J. D. (2011). *Controversial Bodies: Thoughts on the Public Display of Plastinated Corpses*. Johns Hopkins University Press. Retrieved from <http://site.ebrary.com.ezproxy.baylor.edu/lib/baylor/reader.action?ppg=15&docID=10790465&tm=1441771175407>
- Lawrence, J. (2015, July 2). The dying dream of Doctor Death. *The Independent*, p. 35. London, UK.
- Leahy, H. R. (2012). *Museum Bodies: The Politics and Practices of Visiting and Viewing* (New edition edition). Farnham, Surrey, England ; Burlington, VT: Routledge.
- Les ecorches de Fragonard. (n.d.). Retrieved from <http://musee.vet-alfort.fr/>

- Lin, R.-G. (2008, June 8). Exhibit inspires many to donate bodies. *Los Angeles Times*. Retrieved from <http://articles.latimes.com/2008/jun/08/local/me-plastinate8/2>
- Maj, M. (2012). Bereavement-related depression in the DSM-5 and ICD-11. *World Psychiatry, 11*(1), 1–2.
- Marstine, J., Bauer, A. A., & Haines, C. (2011). New directions in museum ethics. *Museum Management and Curatorship, 26*(2), 91–95. <https://doi.org/10.1080/09647775.2011.566709>
- Mehta, N. (2011). Mind-body Dualism: A critique from a Health Perspective. *Mens Sana Monographs, 9*(1), 202–209. <https://doi.org/10.4103/0973-1229.77436>
- Molina, M. (2002). More Notes on the Verreaux Brothers. *Pula: Botswana Journal of African Studies, 16*(1).
- O’Rourke, I. (2001, May 20). Review: Arts: Skinless wonders: Art or anatomy? *The Observer*. Retrieved from <http://www.lexisnexis.com.ezproxy.baylor.edu/lnacui2api/api/version1/getDocCu i?lni=433F-WBX0-007C-23Y5&csi=270944,270077,11059,8411&hl=t&hv=t&hnsd=f&hns=t&hgn=t&oc=00240&perma=true>
- Pashaei, S. (2010). A Brief Review on the History, Methods and Applications of Plastination. *International Journal of Morphology, 28*(4), 1075–1079.
- Raphael. (1507). *St. Catherine of Alexandria* [Oil on wood].
- Riederer, B. M. (2014). Plastination and its importance in teaching anatomy. Critical points for long-term preservation of human tissue. *Journal of Anatomy, 224*(3), 309–315. <https://doi.org/10.1111/joa.12056>
- Rizzolo, L. J. (2002). Human dissection: An approach to interweaving the traditional and humanistic goals of medical education. *The Anatomical Record, 269*(6), 242–248. <https://doi.org/10.1002/ar.10188>
- Roach, M. (2003). *Stiff: the curious lives of human cadavers*. London: Viking.
- Schuessler, J. (2014, June 26). The Morbid Anatomy Museum Opens in Brooklyn. *The New York Times*. Retrieved from <http://www.nytimes.com/2014/06/27/nyregion/the-morbid-anatomy-museum-opens-in-brooklyn.html#>
- Schwartz, R. (2010, December 8). The “Body Show” Battles: Rival Exhibitors Square Off. Retrieved November 28, 2015, from <http://abcnews.go.com/Blotter/body-show-battles-rival-exhibitors-square-off-court/story?id=12348566>
- Sharp, L. A. (2000). The Commodification of the Body and its Parts. *Annual Review of Anthropology, 29*(1), 287–328. <https://doi.org/10.1146/annurev.anthro.29.1.287>

- Sharp, L. A. (2001). Commodified Kin: Death, Mourning, and Competing Claims on the Bodies of Organ Donors in the United States. *American Anthropologist*, 103(1), 112–133. <https://doi.org/10.1525/aa.2001.103.1.112>
- Shuman, J. J., & Volck, B. (2006). *Reclaiming the body: Christians and the faithful use of modern medicine*. Grand Rapids, Mich: Brazos Press.
- Uniform Anatomical Gift Act. (2009, August 26). Retrieved from <http://www.uniformlaws.org/Act.aspx?title=Anatomical%20Gift%20Act%20%282006%29>
- Vesalius, A. (1543). *De humani corporis fabrica* (1st ed.). Basel. Retrieved from <https://ceb.nlm.nih.gov/proj/tp/flash/vesalius/vesalius.html>
- Wall, J. (2011). The Legal Status of Body Parts: A Framework. *Oxford Journal of Legal Studies*, 31(4), 783–804. <https://doi.org/10.1093/ojls/gqr023>
- Warner, J. H., & Rizzolo, L. J. (2006). Anatomical instruction and training for professionalism from the 19th to the 21st centuries. *Clinical Anatomy*, 19(5), 403–414. <https://doi.org/10.1002/ca.20290>