

Conflict: Conceptions of the Body

The controversy surrounding Body Worlds is due in part to the conflict of two belief systems differing in regard to the relation between "body" and "person". To define the contexts in which these belief systems arise, three classes of source will be examined: the first class will discuss the history behind the treatment of the human body in science and art; the second, the side of the controversy which takes issue with Body Worlds; the third, the side of the controversy which supports Body Worlds. By comparing these three stances, we can understand the roots of the controversy and explain how, and perhaps why, these views have changed over time.

The study of the human body has been manifested in both science and art, and sometimes in both simultaneously. Historically, the changes in the way the body has been studied have led to changes in the way the relationship between the body and mind (or soul) has been perceived. Sometimes these ideological changes are caused by the outcome of anatomical experiments which raise new questions or debunk the current model; however, sometimes the changes in the way to study the body are caused by changes in the prevailing ideas of other fields of science/natural philosophy, as new discoveries in other fields cause the lenses through which the body is viewed to change. Von Hagen's Body Worlds is an example of a case in which anatomy takes on scientific and artistic roles. Because the role of science and the role of art are decidedly different, subject to different constraints, in modern society, the exhibit has been met with controversy. Some spectators are unsure of its purpose, of how to categorize it, and therefore under what societal rules they should judge it, to what societal norms they should expect it to conform. In many cases, the function or purpose of art or science is the particular aspect which allows some practice or custom which otherwise would be considered unacceptable. An example of this method of regulation is found in the famous case *Jacobellis v. Ohio*, involving the depiction of graphic, often sexual, nudity, which is allowed in art but not otherwise, wherein Justice Stewart proclaimed of

hard-core pornography, “I know it when I see it.” Those works which reside on the boundary of intuitively delineated categories (in this case, pornography and, metaphorically, art as protected by free speech – the freedom of expression) are especially subject to controversy as the appropriate rules we use as tools to regulate, comprehend, and justify them, are unclear.

The subject matter of Body Worlds is particularly controversial, then, because it involves both the above confusion between its place in either art or science, and because it deals with the intimate and long-debated human body, receptacle of emotions, thought, soul, and sensation, subject of philosophy, science, art, and theology. The human body, obviously the focus of intense interest and strongly-held beliefs stemming from a variety of sources, takes center stage in the Body Worlds exhibit, intensifying the controversy by centering the aforementioned confusion around a polarizing topic.

The human body has always been a source of fascination, and has always played an important role in human beliefs (both scientific and otherwise). This seems only natural, as it is the vehicle in which we make life's journey, and through which we encounter all of our sensations. Because the body is so integrally a part of everything we do, we see its influence on our thinking everywhere: in many of the world's religions, certain parts of the body must be covered to show respect to and humility before God; fashions constantly push the accepted amount of displayed flesh and the accepted representation of the human form (with patterns and shapes, etc); artists reveal their views of beauty and their feelings (shame, honesty) in their depictions of nudes. No less apparent is the role of the body in the sciences, and in some ways all of these fields reflect the desire to understand our bodies – to understand who we are. Of course, in the sciences this can be a somewhat more tangible notion – to understand disease, to understand movement. But in many cases there are underlying connexions to more philosophical questions. Therefore anatomy, as a science precariously perched on a tower of complex and personal mysteries having to do with the philosophical, speculative, and materially practical, has enjoyed an influential and broad role in the evolution of the cumulative body of human knowledge.

The first anatomical knowledge was gathered through the routine butchering of animals (for

meat, hide, bone) – in order to preserve the hide of an animal when taking it apart, ancient hunters had to know about joint connections and the underlying musculature (evidence for this knowledge is found in the striation on bone in ancient sites like Cayonu Tepesi, Catal Huyuk, etc.). Anatomical knowledge was an immediate by product of practicality, but quickly gained religious significance, for example in the Egyptian practice of embalming, or the dismemberment and decapitation (sometimes physically enacted, sometimes ritually enacted, often depicted) of Mesoamerica. At least some anatomy was clearly of global, cross-cultural interest (perhaps unavoidably, as the result of human curiosity and our constant interaction with/through the bodies of ourselves and others) and played roles from the practical – butchering meat – to the mystical – ritual dismemberment. In the latter case, the Mayan view of the human body as a representation of the universe as a whole – the Maya divided the body to ensure proper division of the temporal cycles (year, day, season) – is akin to that of the Hippocratic Greeks, who viewed the human body as a microcosm of Nature. However, the Greeks manifested their belief antipathetically; although the Hippocratic Greeks were beginning to explore science and medicine, they anathematized dissection as disrespectful to man and all he represented¹. Already, the influence of cultural beliefs on the practice of anatomy and use of anatomical knowledge was being demonstrated.

Changes in culture change the pursuit of anatomy – meaning that the prevailing beliefs about the body have changed as well. For example, the changing politics in Hellenistic Alexandria (the power of the state increased and physicians, as arms of the state, grew more powerful as well) allowed the first establishment of human dissection (and perhaps the vivisection of slaves), preserved in accounts of Herophilus and Erasistratus. The former learned from his observations that some system (nerves) transmits motor impulses from the soul (located in the brain) to the extremities, and that blood, not air, resides in veins. He also discovered the prostate and duodenum². Anatomy, then, contributes at least

¹Roy Porter, “The body,” in Roy Porter, *Blood and Guts: A Short History* (New York: Norton, 2003), 53-74.

² Porter, *Blood and Guts*.

two types of knowledge: that of how the body works, allowing revisions to current models and the formation of new hypotheses, and previously unknown parts of the body. The two types are different because the latter requires only observation and knowledge of the known parts, whereas the former requires the ability to question, determine, in other words, creativity. The comparative simplicity of the latter made discoveries of new body parts a common pursuit for anatomists for centuries.

However, human dissection was not uncontroversial from that point forth as the result of having occurred in some profusion once; Galen, one of the most influential early anatomists, whose works would shape anatomical knowledge for centuries, dissected and experimented on animals. Islam forbade human dissection, and Catholicism delegated the handling of corpses to the Vatican, regarding the body as the sanctified possession of God and not man. Like the soul, the body was in some sense supernatural, endowed or created for man by God. In 1482, Pope Sixtus allowed the cadavers of executed criminals to be dissected, as long as they were ultimately given Christian burial, but this did not signify a shift to the view of a complete disjunction between body and soul – public dissection was viewed as a final punishment³.

In Italy, Mondino conducted the first public dissection in 1315, and his works increased anatomy's importance in medical education. Soon Italy began to see the establishment of anatomy theatres for public displays by professors, though this practice would not become commonplace in England and Germany until around 1550. In general, dissections were used to demonstrate the current, still Galenesque, views of the human body. Viselius catalyzed a change in this usage with his 1543 publication, *Concerning the Construction of the Human Body*. He challenged the current views through his own observations, recorded in his text, and helped usher in a new climate of enquiry⁴. Because Viselius was to be so influential, his treatment of the material is indicative of the viewpoint that would be held by many future and contemporaneous anatomists and physicians; his treatment is respectful and straightforward; he issues instructions for dissection and comments on the role of the parts one would

³ Porter, *Blood and Guts*.

⁴ Porter, *Blood and Guts*.

observe during the dissection. His treatment also highlights the connection between anatomy and art, for example in his reference to Polycletus, the Greek sculptor who idealized harmony and balance, when he describes how to find good dissection candidates⁵, and in the use of artists from Titian's workshop to create the beautiful illustrations in his book⁶.

As the usage of dissections for discovery of new theories for how the body worked became more common, Galen's views were very gradually replaced. William Harvey, for example, built on Servetus' theory of pulmonary circulation in his research – experiments on live bodies, in particular frogs (their slower heartbeat facilitating observation) - culminating with his 1628 publication, *An Anatomical Disquisition Concerning the Motion of the Heart and the Blood*. As was common in the Renaissance, though, Harvey built on the knowledge of antiquity as much as he debunked it, perpetuating Aristotelian ideas about the perfection of circular motion within the system of Nature⁷.

Other branches of the natural philosophy, burgeoning, began to be applied to the study of the human body. An archetype of this interaction is the Royal Society, established in 1660 to enhance the exchange of ideas between natural philosophers and physicians. The invention of the microscope also enhanced anatomical observation. As mechanical physics rose to prominence, the views of DesCartes, Boyle, Hooke, and others, equating the body to a complex machine, governed by mathematical, mechanical rules, became an established model of the human body. The virtues and spirits of earlier physicians were replaced by hydraulic and hydrostatic models using more or less literal concepts of pumps, vessels, levers, pulleys, and tubes to describe the interactions and parts of the body. As in other branches of science, the study of the body placed an increased emphasis on measurement and quantification. For example, Sanctorius Sanctorius, contemporary of Galileo, invented a thermometer and pulsilogium (to measure the pulse), and recommended frequent weighing for the monitoring of

5 A. Vesalius, "Book 5: The Best Method for Conducting the Anatomy" [1543], in Charles D. O'Malley, *Andreas Vesalius of Brussels, 1514-64* (Berkeley: University of California Press, 1964), 342-360. (Page 343)

6 Orla Smith, "Anatomy: The Art of the Oldest Science," *Science* 299 (Feb. 7, 2003): 829.

7 Porter, *Blood and Guts*.

health. The prevalent approach to medicine became that of the iatro-physicists, who saw physics as the key to medicine. As Giorgio Baglivi, professor of anatomy at Rome, summarized it, the view au courant was to see the human body as “truly nothing else but a complex of chymico-mechanical motions, depending upon such principles are are purely mathematical”⁸.

Another notably popular approach was that of iatro-chemistry, embodied by Paracelsus, who replaced the “four humours” with three fundamental chemical elements (salt, sulphur, and mercury) in the early 14th century, and in van Helmont (1579 – 1644), who thought that each organ possessed a regulatory “blas” (spirit) which was more material than mystical. He propounded the radical view that all vital processes were chemical, relating to the transformation of food to living flesh⁹.

Both of these groups, the iatro-chemists and iatro-physicists, reflected a shift in the conception of the body – it was going from being thought of as one whole, regulated by the balance of internal fluids, to a complex system of individual parts, in which a disturbance in one might affect the functioning of the whole. However, this gradual transition was only beginning at this point, and would not be manifested so strongly for some time, in fact, not until the establishment of pathology as the study of lesions in particular tissues. This viewpoint would result from the works of Morgagni (1682 – 1771), who localized disease to organs based on the outcomes of at least 700 autopsies, and Bichat, who, in a 1799 publication, localized disease to lesions in specific tissues. They were at the forefront of the study of pathology based on anomalies observed in the dead, which could be used to understand disease better than the various symptoms of a living patient¹⁰.

Van Helmont's views were, in addition, significant of a shift from the Cartesian concept of “the ghost in the machine” to that of the concept on vitalism – on the nature of life. The gradual transition to this viewpoint, occurring through Boer's (1668 – 1738) criticism of DesCartes' “clockwork” body as too crude, proposing instead a plumbing network with an emphasis on balance akin to that seen in

8 Porter, *Blood and Guts*. (Page 66)

9 Porter, *Blood and Guts*.

10 Porter, *Blood and Guts*.

humoural theory, and leaving the soul beyond the realm of medicine (better left to priests and metaphysicians), and Stahl (1660 – 1734), who proposed not a present but separate (Cartesian) soul, but the soul as a means of physiological regulation, consciousness, and protection from illness, among others, engendered a view of the soul and the life-force as more intimately connected with the body, although it was often believed that science should concern itself only with how the body worked and how to restore proper function (not why it worked or what caused it to work in the first place)¹¹.

However, as this view of the intertwining nature of the soul, the life-force, and the body emerged, the philosophical questions about the nature of life became something subject to experimentation. New discoveries, like Abraham Trembley's experiments in the 1740's in which polyps or hydras were found, when divided, to generate complete new individuals, supported the new view that the body was more than just a simple machine. With these new discoveries, it was becoming impossible to separate the “why” and the “how.” For example, Haller's theories of irritability and sensibility of muscles provided an explanation for the observations of William Harvey – the heart contracted so often because it was the most “irritable” of muscles, and it reacted to the influx of blood, yet Haller (as Newton with gravity and Boerhaave with the soul) insisted in attributing the underlying causes to causes beyond science. Again encroaching upon potentially dangerous territory (philosophically or theologically) were Cullen's (1710 – 1790) discoveries relating the nervous system to disease, especially mental illness. Lavoisier's establishment of the necessity of oxygen to life moved the reigning thought yet farther from the concept of the body-machine, as did the discovery of the role of electricity in muscle contraction (pioneered by Galvani and Volta, around 1792). The effects of these new ideas on the popular conception of the way the body worked, and of its roots in disturbingly scientific – rather than supernatural – methods, can be seen in Mary Shelley's 1818 *Frankenstein*¹². These new ideas made it harder to delineate between the purely spiritual realm, created and controlled by God, and the scientific realm, discovered and alterable by man.

11 Porter, *Blood and Guts*.

12 Porter, *Blood and Guts*.

It is as a result of the dissolution of these boundaries – that is, of the encroachment by science, particularly in the understanding of the mind and body, on the realm previously thought of as that of God and God alone -, which has only increased as knowledge increases (for example, computer learning, artificial intelligence, the diagnosis and treatment of mental disorders, the science of linguistics, among many others), that questions regarding the human mind/body relationship continue to be of great public interest, and to cause controversy, today. Body Worlds follows in the tradition of other exhibits capitalizing on this interest. As far back as the 19th and early 20th centuries, the increasing availability of books, making anatomical, medical, and scientific knowledge more available to the general public, led to public lectures on anatomy (not always taught altruistically; often run with the capitalist intent of utilizing the popularity and controversial nature of the material to make a profit) involving life-sized wax or papier-mache mannequins¹³.

Von Hagens' exhibit inherits both from this tradition and from the far earlier connexion, mentioned earlier, between the body and art. In the Renaissance, artists frequently portrayed anatomical figures in whimsical positions (such as, in Viselius, the corpse who digs his own grave), and it became common not only for medical schools to employ anatomists, but art schools, as well. Post-Renaissance, as medical science evolved, its images lost their fantastic edge – but the body in art has continued to be imaginatively depicted, as it is in Von Hagen's exhibit today¹⁴.

However, Body Worlds involves real human corpses, not just their depictions. In this way, von Hagens has fused anatomical dissection and art – each element, taken separately, is perfectly acceptable under today's societal rules: it is widely acceptable to perform dissections in the name of education or science, though it is viewed as something that ought to be subject to individual religious or moral beliefs, and it is widely acceptable to depict the body in any way one might imagine, although, again, this art would cause controversy if it were to be forced upon people rather than viewed by choice.

When these two elements combine in one body of work, though, it is unclear whether the result is art or

13 Smith, *Anatomy*.

14 Smith, *Anatomy*.

science, and whether it is still acceptable. That the answer to whether or not it is acceptable depends in part on whether it is art or science is still more confusing – many find it offensive to display corpses intended for education in irrelevant positions¹⁵, while others see it as art which also manages to educate. On the latter side, the exhibit can be viewed – and apparently this is the stance of von Hagens¹⁶ – as the extension of great anatomical artists such as Vesalius* and da Vinci, and it can inspire awe and even, according to Herscovitch, ease the fear of mortality¹⁷. The secularization of the West has caused a relaxation and a freedom of expression unbridling the arts, which is what allows such exhibits as Body Worlds, part art and part education, as shown by contemporaneous exhibits such as those of Damien Hirst and Marc Quinn (displaying, respectively, sliced farm animals in formaldehyde-filled cases and portraits made from congealed blood and placenta)¹⁸, which might offend certain religious beliefs. This, in conjunction with the clash of the rules governing science and art, and the timeless fascination with the human body, are what make Body Worlds so popular and so controversial. Von Hagens acknowledges this, saying, “Hollywood has earned a fortune by blending anatomy... and playing with ambivalent, gruesome feeling (sic). What can be better than to... put me (sic) into this tradition?”¹⁹ Von Hagens sees himself as the offshoot of multiple well-established traditions, and sees controversiality as not undesirable (in fact, he says “controversy is democracy”)²⁰. He defends all of his actions as perfectly legal²¹; however, the legality is not really the controversial issue – within the letter of the law, the corpse can be understood as a possession to be willed however the previous possessor wants, or it can be understood as something more than that, a special remnant of a person which requires taking

15 Anita L. Allan, “No dignity in Body Worlds: A silent minority speaks” *The American Journal of Bioethics* 7:4 (2007): 24-25.

16 Penny Herscovitch, “Rest in plastic: Review of ‘Body Worlds, The Anatomical Exhibition of Real Human Bodies’ by Gunther von Hagens,” *Science* 299 (Feb. 7, 2003): 828-829.

17 Herscovitch, *RIP*.

18 Herscovitch, *RIP*.

19 Debashis Singh, “Scientist or Showman?,” *British Medical Journal* 326 (2003): 468.

20 Singh, *Scientist or Showman*.

21 G. von Hagens, “No Skeletons in the Closet – Facts, Background and Conclusions: A response to the alleged corpse scandals in Novosibirsk, Russia, and Bishkek, Kyrgyzstan, associated with the *Body Worlds* exhibition.” Public statement, distributed online 17 November 2003, [<http://www.bodyworlds.com>].

into consideration the family, loved ones, and religion related to the possessor²². The least ambiguous aspects of body-related law seems to concern the transportation and selling of body parts²³, perhaps because the underlying religious and moral beliefs leave politicians loathe to approach.

The controversy around Body Worlds, then, comes from several aspects. First, from the confusion as to whether it ought to be judged as art or as science, as this determines which societal rules apply and therefore whether or not it is acceptable. Second, from the innate interest anything involving the body inspires in most people. Thirdly, from the differing ways to interpret the relation between the soul and the body, which was shown to be a question of historical interest and which has undergone great change, leading to the present, in which the soul and the body are seen to be interconnected – and, for many religious people, uncomfortably intertwined, as it is harder to have a realm of God and a realm of man, a realm of the spiritual and a realm of the corporeal, when the two are coming to be seen as demonstrably inseparable.

22 G.V. Hamburg, “Institute for Plastination responds to National Catholic Bioethics Center article by Jody Silliker, Feb 2010.” Public statement, accessed on November 10, 2010, [<http://www.bodyworlds.com>].

23 G. von Hagens, *No Skeletons*.

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** This is what von Hagens said according to Herscovitch, though it seems to contradict Smith, who says that Vesalius' illustrations were the work of artists from Titian's studio. I do not know which statement is correct, though, a mon avis, von Hagens seems to issue somewhat contradictory statements with some frequency, and Smith was published in the reputable Science, so, my guess is, Smith is correct. For example, in No Skeletons in the Closet, Hamburg includes a logically ludicrous table of the differences between a corpse and a plastinate, and says something about volunteers he had for plastination before the time he says he invented the plastination process, which really doesn't make any sense.*

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