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BODIES R US: Ethical Views on the Commercialization of the Dead in Medical Education and Research

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With the ongoing and expanding use of willed bodies in medical education and research, there has been a concomitant rise in the need for willed bodies and an increase in the means of supplying these bodies. A relatively recent development to enlarge this supply has been the growth of for-profit willed body companies ("body brokers") in the United States. These companies advertise for donors, cover all cremation and other fees for the donor, distribute the bodies or body parts nationally and internationally, and charge their users for access to the body or body parts. In doing so, they generate substantial profits. This review examines the historical development of willed body programs, the legal and economic aspects of willed body programs, and then provides an ethical framework for the use of willed bodies. The ethical principles described include detailed informed consent from the donors, comprehensive and transparent information about the process from the body donation organizations, and societal input on the proper and legal handling of willed bodies. Based on the ethical principles outlined, it is recommended that there be no commercialization or commodification of willed bodies, and that programs that use willed bodies should not generate profit. Anat Sci Educ 12: 317–325. © 2018 American Association of Anatomists.

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"There is no guilt in reverence for the dead."
Antigone by Sophocles

INTRODUCTION

While there is a long and convoluted history to the commercialization of the dead human body, the events in this development have not been fully characterized. The same is true for ethical considerations of this phenomenon, which have not been examined in any detail (a rare exception: Herrmann, 2011). The following essay will briefly outline the historical background of anatomical body procurement and its commercialization, and then review the current practices of willed body donation, including the legal and economic framework. While focusing on the situation in the United States, legislation in the United Kingdom (UK), Germany and other countries will be referred to as examples of alternative models of body donation. Based on this information, ethical aspects of body donation and commercialization will be discussed, and a set of *guiding principles for the proper treatment of willed body donors for medical education and research* will be formulated.

Historical Background

With the growth in medical education during the 18th and 19th centuries, the use of dead humans to teach physicians anatomy

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and pathology rose markedly. This greater need for bodies lead to a dearth in bodies for study, and, in certain parts of the world, an increase in grave robbing to supply these bodies (Ball, 1928; Roach, 2003; MacDonald, 2005; Garment et al., 2007; Ghosh, 2015). Starting in the early 19th century, many grave robbers were paid by anatomists for fresh bodies, presenting the first well-documented commercialization of the dead for medical education. One of the most notorious examples of the grave robbing trade occurred in Scotland, when William Burke and William Hare murdered individuals and then sold their bodies to anatomist Robert Knox. This episode of abusive practices in anatomy lent support to the passage of the Anatomy Act of 1832 in Great Britain, which resulted in a reduction in grave robbing for money. While the Act included provisions for willed bequests by body donors, it primarily led to an increased use of unclaimed bodies (from prisoners, psychiatric hospital patients, the poor and destitute) (Ball, 1928; Richardson, 2001). Similar developments of legislation and use of unclaimed bodies occurred in the United States (US; Sappol, 2002). Another example of commerce in human body parts at that time was the trade in human bones in the 19th and 20th centuries (Calcutta bone trade; Stephan et al., 2017). This venture also exploited the poor and disenfranchised, mainly in India, whose bodies were used for the production of human skeletal materials. Unclaimed bodies, regarded as a poor ethical choice today (Kahn et al., 2017), remained the main and often only source of body procurement until functional bequest programs appeared in the mid- to late 20th century. These programs allowed individuals to donate their bodies to medical schools for use in medical education (willed body programs; Richardson, 2001; Garment et al., 2007).

During the 19th and 20th centuries, two technological advances led to a greater use of dead bodies in medical education and research. The first advance was the ability to preserve human remains for longer periods. This was due to the use of formaldehyde, other preservatives, and refrigeration, which reduced or eliminated decomposition (Brenner, 2014). This made bodies available for months or years instead of days, which allowed for multiple uses of the body and its parts, and which also facilitated commercialization. An additional preservation technique was developed in the late 20th century that involved impregnation of dead tissue with resins to produce plastinated specimens (von Hagens, 1979; von Hagens et al., 1987). These tissues last indefinitely, can be used repeatedly, and thus lend themselves more easily to commodification. The plastination technique also expanded the market for commercial anatomy exhibits.

The second technological advance in the 20th century was the development of new surgical techniques. This included minimally invasive and endoscopic surgery, which made it more difficult to train surgical trainees "on the job" compared to open surgical approaches. These advanced techniques are, therefore, often taught first on fresh (not embalmed) dead bodies before being applied to living patients. With the widespread use of these techniques, there was an increased need to train physicians in these specialized procedures (Supe et al., 2003; Sharma et al., 2012; Lim et al., 2018). The use of these and other procedures brought with them financial considerations on the part of the surgical product companies selling, for example, hip replacement devices. This led to an increased demand for body donors to act as surrogates during surgical training courses. Established body donor programs could not meet this demand for fresh tissue (or felt it was unethical to supply tissues to for-profit surgical training companies), and this opened a new market for body donor companies.

FORMS OF WILLED BODY DONATION PROGRAMS IN THE 21ST CENTURY

Willed Body Donation at Universities or State Anatomical Boards

Starting in the middle of the 20th century, willed body anatomical donation programs were established at university anatomical departments in many countries (Richardson, 2001; Stukenbrock, 2001, 2003). In the United States, state-run anatomical boards were also established in some locales, based on the legal regulations of specific Anatomical Gift Acts (Sappol, 2002; Champney, 2016). These university-associated or state-run donation programs are based on the idea of the altruistic intent of the donor and the not-for-profit status of the education program using these bodies. Another aspect of these programs is that they are overseen and run by anatomists. These educators are associated with all aspects of the program and understand the value and the importance of the donors. For example, the Anatomical Board of the State of Florida is composed of anatomists from medical schools and osteopathic schools from around the state (ABSF, 2018). This academic oversight by qualified anatomists from teaching institutions is an important distinguishing feature when compared with other body donation programs (Schmitt et al., 2014; Champney, 2017).

Other countries around the world also have well-established body donation programs with the majority of programs having an academic affiliation and a non-profit status. For example, Japan has had a fully functioning body donation program with increasing donor numbers over the last 50 years and has strict ethical policies for the use of donors in medical education (Sato, 2007; Sakai, 2008). Likewise, New Zealand has a well-organized, nationally administered willed body program (Cornwall and Stringer, 2009). Most European countries also have non-profit body donation programs that are governed by strict ethical policies (Riederer and Bueno-López, 2014; Riederer, 2016).

The definition of "willed body donation" varies between programs in the US and Europe. In Germany, Austria and Switzerland, for example, only prospective donors themselves can "will" their bodies to a program (Riederer and Bueno-López, 2014; Riederer, 2016). In the US, on the other hand, certain programs also allow the family of a donor to make a donation.

In some parts of the world, the willed body programs at universities became fully functional, i.e., supplied sufficient bodies for medical education, by the late 20th century (Garment et al., 2007; Sakai, 2008; Habicht et al., 2018). The driving forces behind this increase in body donation remain unclear. Some evidence suggests that the refusal of government agencies to deliver unclaimed bodies without voluntary consent by the deceased as well as successful appeals by anatomists to the general public have been effective (Bolt et al., 2011; Hildebrandt, 2013, 2016; Claes, 2017). Other influences may have been a change in public opinion due to better education, and the increasing success of modern medicine, especially transplantation medicine (Bolt et al., 2010; Wijbenga et al., 2010; Saha et al., 2015). In 1963, Jessica Mitford published the first list of US medical schools that accepted body donations, thus helping

to popularize body donation as an alternative to often costly traditional funerals (Mitford, 1963). Mitford also pointed out the rampant commercialization of the funeral industry, which may have lead individuals to consider more altruistic alternatives with body donation programs. Again, anecdotal evidence shows that, once a university-based willed body donation program is well established, it attracts further donors from the local community through legacy families and word of mouth publicity (Mitford, 1963; Mitford, 2000; Wijbenga et al., 2010).

In the United States, the Uniform Anatomical Gift Act (UAGA) was passed in 1968 and was subsequently revised in 1987 and 2006 (AGA, 2006; Martinez, 2013). It sets a regulatory framework for the donation of organs, tissues and other human body parts. By February 1972, 48 US states had accepted the act and today all US states have adopted it (Garment et al., 2007). Currently, the majority of US medical schools accept body donations, but some still supplement their anatomical supply with unclaimed bodies (Jones, 2012, 2014; Wilkinson, 2014), even though this practice is questioned by the public (Kahn et al., 2017).

The UAGA was prompted by the emergence of organ transplants as a clinical reality and was devised as a means of resolving perceived inconsistencies between US states over organ procurement. The scope of the 2006 revision limits donations to deceased donors who made a gift before their death or, after their death, by close relatives. The current process for donation is a 'document of gift' executed by the donor before death. It also enables an individual to prevent others from making a gift of that individual's body after their death (AGA, 2006). Interestingly, the Act strengthens the donor's rights by stating that the family has no legal right to revoke the gift.

The International Federation of Associations of Anatomists (IFAA) states that willed body donation is the "standard of ethical practice" in anatomical education, and has encouraged countries to implement these ethically based programs (McHanwell et al., 2008; Jones and Whitaker, 2009; FICEM, 2012; Habicht et al., 2018). Nevertheless, numerous countries still rely on the use of unclaimed bodies for anatomical education, since there are not sufficient numbers of donors in their donation programs (Stimec et al., 2010; Kramer and Hutchinson, 2015; Riederer, 2016; Habicht et al., 2018).

Body Donation Companies (Body Brokers)

A new phenomenon that has arisen over the last two decades in the US is the emergence of private willed body donation companies (body brokers). With few exceptions, these private companies are based on a for-profit business model and promote their services through advertising in funeral homes, hospices, nursing facilities and newspapers (Champney, 2016). These companies generally offer to cover the entire funeral and/or cremation costs for the family, thus attracting a disproportionate number of indigent donors. Once the body brokers accept the bodies, they are dismembered and shipped to national and international clients for research or education purposes, often in postgraduate surgical training courses (Shiffman and Levinson, 2018).

With the development of alternative means for obtaining, utilizing and selling dead human tissue, there has been little regulatory or ethical guidance on how these companies should operate. This legislative vacuum in the US has fostered not only the questionable commercial exploitation of dead bodies, but also other transgressions. These include the unsafe handling and shipping of human body parts, the mislabeling of these parts, and the undignified disposal of human remains (Grow and Shiffman, 2017). From their very inception, these for-profit body broker companies, also known as non-transplant tissue banks, have come under heavy criticism (Roach, 2003; Cheney, 2006; Goodwin, 2006; Sharp, 2007; Cantor, 2010). This criticism of body brokers is shared not only by individual authors and investigative journalists, but also by the American Association of Anatomists (AAA, 2018) and the American Association of Clinical Anatomists (Cahill and Marks, 1991).

The private body broker company seems to be a rare occurrence outside the US. Recently, however, MoViDo GMBH, a private company for body donations has been founded in Essen, Germany, with the explicit aim to support postgraduate educational courses. The company stresses on its website that it has non-commercial goals, but its legal status is that of a profit-generating "GmbH" (German for limited liability company).

Body Donation for Plastination

Another form of private willed body donation program was established in the 1990s by the anatomist Gunther von Hagens, in connection with his for-profit business of public exhibits of plastinated bodies – the Body Donation for Plastination program (von Hagens, 2018). The von Hagens' enterprises include the Institute for Plastination in Heidelberg and the Gubener Plastinate GmbH (von Hagens and Whalley, 2000). The plastination preservation method involves the replacement of water in tissues with silicone, producing a stable construct that will not decompose. The plastinated specimens are used for public display in travelling exhibits, which, while having a potential educational component, are also part of a commercial enterprise fostering morbid curiosity and sensationalism to attract profitable crowds (Lantos, 2011). In addition, the material stability of plastinated specimens has facilitated a widespread trade with such specimens. Plastination companies sell specimens to users in medical education, and in their catalogues openly charge prices for bodies or body parts as commodities (von Hagens, 2018).

While popular, the plastination exhibits are also at the center of an international multidisciplinary ethical debate (Werner, 2001; Wetz and Tag, 2001; Cohn, 2002; Jones, 2002; Lozanoff, 2002; Walter, 2004; Working, 2005; Barilan, 2006; Jespersen et al., 2009; Lantos, 2011). One of the major concerns has been von Hagens' questionable source of anatomical body procurement (Peuker and Schulz, 2004; Working, 2005). Plastination exhibits have also sparked legal controversy in Germany, and, in one case, the exhibition of a specific plastinated specimen showing two bodies in sexual intercourse was banned by a court decision in Augsburg in 2009 (Anonymous, 2009). More recently, the opening of the "Menschenmuseum" (Museum of Man) by Gunther von Hagens in Berlin has led to legal negotiations about whether or not a plastinated body can be exempt from compulsory burial (Kögel, 2017). Other plastination organizations and their body donation programs, such as US-based Premier Exhibitions and their "Bodies Revealed" exhibit, have also raised ethical concerns.

INTERNATIONAL LEGAL REGULATIONS FOR BODY ACQUISITION

While the development of legislation is of historic interest, the social and ethical pressures underlying it are as relevant today as they were in the early 19th century. Rejection of grave robbing in the UK stemmed from disquiet about the moral and social acceptability of both this practice and what was perceived as the subsequent mutilation of the dead (Jones and Whitaker, 2009). The medical establishment at the time defended the legitimacy of dissection on the grounds of its ultimate medical benefits, but failed to address the legitimacy of the means by which the bodies were obtained or how they were treated inside the dissecting rooms (Richardson, 2001; Jones and Whitaker, 2009).

As mentioned above, in the UK by 1829, pressure to put an end to grave robbing led to the first Anatomy Bill and then to the 1832 Anatomy Act, with its legalized use of unclaimed bodies. The unintended consequence was that poverty became the sole criterion for dissection (Richardson, 2001), a situation compounded by the factor of "race" in the 19th century US (Halperin, 2007). The practice of using unclaimed bodies in anatomy has continued in parts of the world to the present day, with reliance placed upon bodies from institutions housing the poor and disenfranchised rather than on willed bequests (Habicht et al., 2018). In contrast, the central ethical thrust of the use of bequeathed bodies is the role of fully informed consent on the part of the individual making the bequest (Campbell, 2009).

Since the Anatomy Act of 1832, British legislation governing the dissection of bodies has continued to emphasize the importance of consent given by the individual prior to death. This is evident in the subsequent Anatomy Act of 1984, and its more recent replacement, the Human Tissue Act of 2004, which requires written and witnessed consent by any donor to be used for anatomical dissection or public display (British Medical Association, 2006). In Scottish legislation of 2006, the term 'authorization' is used in place of consent, in order to strengthen the ethical significance of an individual's wishes for treatment of his or her body after death (Human Tissue Act, 2004; Human Tissue (Scotland) Act, 2006). In both cases, the terms consent/authorization replace the wording 'lack of objection' found in earlier legislation.

The Human Tissue Act of 2004 in the United Kingdom explicitly prohibits commercial dealings in human material for transplantation. For instance, a person commits an offence if they give or receive a reward for the supply of, or for an offer to supply, any controlled material; seek to find a person willing to supply any controlled material for reward; or offer to supply any controlled material for reward (Human Tissue Act, 2004). An offence is also committed if anatomical specimens are removed from licensed premises for purposes other than for education, teaching or research undertaken on premises licensed under the Human Tissue Act.

In the United States, the Uniform Anatomical Gift Act (UAGA) was a mechanism to consolidate and unify the numerous state rules on organ donation and body donation. Of relevance in the present context is the 2006 UAGA stance on reported abuses involving the intentional falsification of a document of gift or refusal, in order to obtain a financial gain by selling a decedent's parts to a research institution (AGA, 2006). These cases are categorized as felonies. The National Organ Transplant Act of 1984 (NOTA, 2003) bans the buying and selling of human organs. The goal of this Act is to control commercialization of human organs, a debate that is becoming ever more intense as new directions in the biotechnology industry make bodily tissues increasingly valuable for use in research, education and commercial ventures (Andrews and Nelkin, 2001). However, it appears that less attention has been given to the commercial uses of whole bodies or body parts for teaching and surgical practice (Grow and Shiffman, 2017; Shiffman and Levinson, 2018).

In Germany, there has never been unifying legislation regarding the acquisition of bodies for anatomical purposes comparable to the Anatomy Act of the United Kingdom or the UAGA of the United States. This is due partly to the fact that there was no unified German nation until 1871, and is perpetuated by the current federative system of states. Moreover, there is only anecdotal evidence of grave robbing in German-speaking countries throughout history (Winkelmann, 2008), and it seems that paid "resurrectionists" did not play the same role as they did in the UK or US, thus the need for appropriate legislation was different. Current laws regarding dissection and burial are part of regional rather than federal legislation. Even today, some of the federal states (*Bundesländer*) have no legislation regarding anatomical dissection. All German anatomy departments work exclusively with body donations, through university-based donation programs. From a legal standpoint, some programs follow federal transplantation laws, while others follow specific regional laws regarding anatomical dissection. Some of these regional laws explicitly exclude financial compensation for body donation, but none explicitly regulates how the body is handled after donation. Federal law in Germany prohibits *selling* bodies, as the body cannot be a commodity (Herrmann, 2011); however, there are nevertheless "gray" legal areas when it comes to isolated specimens, e.g., bones, plastinated specimens (von Hagens and Whalley, 2000) or imported body parts (Shiffman and Levinson, 2018).

ECONOMIC ASPECTS OF HUMAN BODY DONATION

Body donation is never entirely free of economic aspects. In particular, the family of the deceased may not be able to afford a funeral or cremation and may – depending on local regulations – see the donation of their loved one to a willed body program or a body broker as a means to avoid an economic burden as well as an altruistic gesture for medicine. In the United States, however, the recent development of nonprofit and for-profit body donation companies has introduced additional economic issues. This has attracted the interest of business and marketing researchers (Anteby and Hyman, 2008; Anteby, 2010), as well as the public media (Grow and Shiffman, 2017). The economic researchers, Anteby and Hyman (2008), noted that for-profit body donation is like any other business that sells a commodity, in that it has the same tensions between supply and demand. The lay press depictions of these companies point to their ability to generate substantial profits (millions of dollars) from freely donated willed bodies (Grow and Shiffman, 2017).

While there are well-described economic benefits to companies that profit in willed bodies, there are also subtler economic aspects. For example, a surgical training company that pays a body broker for body parts to run their program will pass along these higher business costs to their end users – the surgeons or

the hospitals. If these costs were lower (not generating profit), the savings could also be passed onto the end users - the doctors, the hospitals, the health-care insurers and ultimately the patients. By having for-profit businesses involved in this field, the costs to all involved are higher. This is borne out by comparing the service charges for a full body preparation from the Anatomical Board of the State of Florida (University of Florida, College of Medicine, Gainesville, FL) versus a private body broker (Science Care Inc., Phoenix, AZ). The non-profit anatomical board charges less than one-half the cost of the for-profit body broker (Anatomical Board of the State of Florida, Gainesville, FL compared to Science Care Inc., Phoenix, AZ).

A recent viewpoint article attempted to compare the economic advantages of for-profit body brokers with willed body programs (Wingfield, 2018). The author claimed that for-profit body brokers would prove economically more advantageous by avoiding excess costs and liability issues. However, when comparing actual costs between non-profit programs and for-profit businesses, it is apparent that the non-profit programs are less expensive. Other economic and business issues, such as continued access to quality "product" (the willed bodies), and reduction in prices by larger scale operations, may be factors in determining the economic viability of these organizations, and yet these factors can be applied to both non-profit and for-profit businesses. The main reason that for-profit body brokers are economically viable is that they meet a need that is not fulfilled by the non-profit willed body programs. There may be multiple reasons for this; non-profit programs may not have enough donors, they may not be willing to provide the specific types of tissue preparations (fresh tissue, for example) or, importantly, they may feel it is ethically inappropriate to supply willed body donors for certain uses.

ETHICAL VIEWS OF BODY DONATION AND COMMERCIALIZATION

Basic Ethical Considerations

At the forefront of the issues under discussion, are the following questions: Why is personal value placed on the dead body, and why should an individual consent to how their body is used after death? Does it matter how the dead body is treated? Do dead human bodies have ethical value or are they nothing more than commodities?

One of the earliest features that distinguished human culture from the animal kingdom was the fact that dead bodies are not just discarded, but receive special treatment. Even today, virtually all cultures, including secularized societies, observe post-mortal mourning rituals, in which the body of the deceased usually plays a central role (Laqueur, 2015). Such rituals bridge the gap between what has been termed biological death and social death (Helman, 2007).

The vast majority of people have deep moral intuitions that lead them to bestow value on other human beings like themselves. People are closely identified with their bodies, so what is done to a dead body has relevance for the feelings about that person when alive: it is not possible to totally separate the dead body and the once living person (Jones and Whitaker, 2009). Accordingly, the fate of the mortal remains of an individual person is usually perceived as an integral part of their biography (Winkelmann, 2016); most people would, for example, know where their deceased grandparents are buried. Likewise, not knowing the fate of and resting place of the remains of one's ancestors can lead to great suffering (Seidelman et al., 2017). For a comprehensive review of the cultural history of human remains see Laqueur (2015).

Closely related to this is the recognition that those who knew the person when alive have memories of that person; in other words, a dead human being represents an array of embodied memories. These in turn point to the deceased person's relationships – relative or friend, who are now grieving the death. Hence, respect for the dead body is respect for other people's grief. No matter the level of these moral intuitions, they emphasize that there are certain ways in which dead bodies are not to be treated, even if there are limits to the value bestowed upon them.

Driving this distinction is the recognition that dead human bodies have both intrinsic and instrumental value; they are of value on account of what they are as the remains of once living people, and also because they can be used in ways that assist others as a source of organs and for educational purposes. Both contribute to societies' recognition of the dead body's significance (Jones, 1994, 2016, 2017a). Consequently, the manner in which dead bodies are treated *is* of moral interest. By taking account of a person's wishes when alive, a continuum is recognized between the two - the living human being and the dead body. Disrespect is shown to a person-now-dead when that person's body is used in the absence of any consent on the person's part, and/or in the absence of any close friends or relatives to argue the case for the deceased (Jones and Whitaker, 2009).

This link between the living individual and what is done with their bequeathed body gains its ethical legitimacy from the fact that the donation is for a purpose approved of, and understood by, the one making the bequest. They likely wanted to assist in some recognizable way to medical education or research. Not only this, but those using the bodies or body parts are well aware that these are the remains of those in their communities who wanted them, or people like them, to make the best use possible of their bodies. If this link between the living and the dead is to be retained, two facets are essential - recognition and understanding. While both notions require further analysis, they set useful boundaries for this discussion. They suggest that donated bodies have been donated for a specified purpose in a specified place, both of which were disclosed to the individual making the donation. Of course, the definitions of 'purpose' and 'place' are flexible, although they would probably not allow bodies to be moved from one country to another, nor passed from one cultural group to another, in a manner totally unknown to the one making the bequest. It should also be considered that body donations may be made with an expectation of benefit for a local community rather than an abstract contribution to medical progress for mankind as a whole (Winkelmann, 2016). There are cases where the willingness of local communities to donate is damaged, if benefit of the donation is perceived to be going to "others". This may be one of the reasons for the reluctance of African Americans to donate in a society still carrying the historic burden of racism and socioeconomic inequality (Davidson, 2007; Halperin, 2007; Collins et al., 2018).

Closely allied with these considerations is the holding of commemorations, that are becoming increasingly common in medical schools and undergraduate anatomy programs (Jones, 2017b; Štrkalj and Pather, 2017), while they seem to be rare in other contexts like postgraduate training or for-profit body broker companies (Champney, 2017). They represent an act of gratitude and thanksgiving for those who have given something closer to them than anything else, namely, their body. From

these considerations, it emerges that the mere act of donating one's body in the absence of any expressions of gratitude demeans the donated gift of the body. To recommend "simplifying or eliminating memorial services" (Wingfield, 2018) as a cost-saving measure in for-profit body donation flies in the face of the meaning of these commemorations, as representations of the link between donor and dissector.

Ethical Perspectives on Commercialization of the Dead

In view of these points, it is timely now to turn to the commercialization of bodies. Roman law saw the dead body as a "res extra commercium", i.e., literally a "thing", that, however, could not be the property of someone and could not be marketed (Thomas, 1976). Modern uses of the dead body have complicated this legal status, particularly when it comes to bodies preserved for longer times, and to body parts and tissues, whose "detached state" makes them often far removed from reminding the observer of a deceased individual. While the legal status of the dead body will remain controversial, an ethical perspective clearly suggests that the body or its parts should not become a commodity. The bioethics convention of the Council of Europe, for example, states: "The human body and its parts shall not, as such, give rise to financial gain." (Council of Europe, 1997; Art. 21). This general rejection of a commercialization of the body is based on the belief, shared by most cultures, in the dignity of the human body after death (Hassaballah, 1996; Herrmann, 2011). In the European philosophical tradition, this can be traced back to Kant's concept of dignity, which posits that having dignity and having a price are mutually exclusive qualities (Kant, 1785). Trading in bodies or body parts jeopardizes the dignity of the human body and thus the dignity of the individual.

It is not surprising then, that the IFAA approved ethical guidelines that strongly support detailed informed consent for all willed body donations, and that advise against any generation of profit in the willed body donation process (FICEM, 2012). The AACA and the AAA have also established like-minded guidelines for body donation programs (AACA, 2017; AAA, 2018). While these guidelines have no legal or regulatory nature, they do set the ethical standard for the correct and appropriate use of willed body donors.

One unique ethical issue that is raised by the activities of for-profit companies (Champney, 2016) is the use of bodies and body parts in locations removed from the originating location, that is, where the donation took place (Shiffman and Levinson, 2018), particularly when the donor is used in countries and cultures alien to those of the donor. Regardless of any financial transactions, this distancing breaks the network of relationships between the donor, their family and the community. Under these circumstances, it appears impossible to maintain a recognition of the humanity of the donor, since the donor and the family of the donor are far removed and outside the social context of the users of the body or body parts. The donors have, thus, been reduced to nothing more than a commodity to be acquired and sold.

A possible way around this impasse would be if, during the donation process, considerable efforts are made to outline how the body and/or its parts are to be used, where the body is to be used, by whom it is to be used, and whether there are any financial ramifications. This is to protect the central ethical tenet of informed consent. Therefore, transparent informed consent, including the issues of geographical use and potential financial profit for the donation organization, should be required.

The increased relevance of these considerations emerges with the rise of body brokers. It is important to note that the brokers advertise their services by appealing to the altruism of the potential donors, letting them infer that this is also the broker organization's main motive for action, while, in reality, the brokers are trying to maximize profit (Grow and Shiffman, 2017). Thus, the interactions between the body donors and the for-profit broker organization present an imbalance of power that may be built on deception by the broker organization. The body brokers cover cremation costs and other services that could be considered an economic benefit to the donor and the family. Unfortunately, this "benefit" may have an ethically troubling consequence, by impelling an indigent and disenfranchised population to donate.

On the other end of this transaction are the users of the willed human bodies. They too should consider the ethical and commercial nature of their programs. They should treat all of the tissues they receive with respect and dignity. They should not generate profit from any of the courses or programs they run. They should honor the altruism of the donors by removing all financial considerations from their programs and by emphasizing the medical and educational contributions that can be obtained from the donors.

RECOMMENDATIONS

The relatively recent spate of organ retention scandals in the UK (Bristol Royal Infirmary Inquiry, 2001; Redfern et al., 2001) has led to the development of extremely useful ethical principles to guide the retention of human tissue (Department of Health, 2001; Retained Organs Commission, 2002). These principles could also be applied to the ethical treatment of willed body donors and include: (1) respect – treating the person who has died and their families with dignity and respect; (2) understanding – realizing that relatives may have very strong feelings of responsibility for the deceased; (3) informed consent – enabling fully informed consent by the donor and the family; (4) information – making comprehensive information available about the uses of the donated material; (5) cultural competence – being aware of the different religious and cultural perspectives of the donors; and (6) gift relationship – realizing that donation is preferable to 'taking' of bodies and body parts.

These principles are disregarded to the detriment of the humanistic side of willed body donation (Champney, 2011; Štrkalj, 2016). Against this background, the following recommendations have been formulated to help guide those in the field of anatomy when considering the ethical aspects of commercialization of the dead. These revolve around **three themes** (Figure 1): (1), the consent, understanding and information for the donor and the family; (2), the proper treatment of the deceased by the donation organization; and (3), the safety, ethical and legal aspects of the proper treatment of the dead by the society.

For the **first theme**, the donor and the family should be provided with information about the process in a fully transparent and comprehensive manner. This information should include a description of the range of teaching and/or research projects for which bodies and body parts are currently being used. In addition, it should be specified where the bodies will be used, by which types of students, clinicians, or researchers, whether the bodies will be anonymized and how they will be disposed of following use. The donor and the family should also be

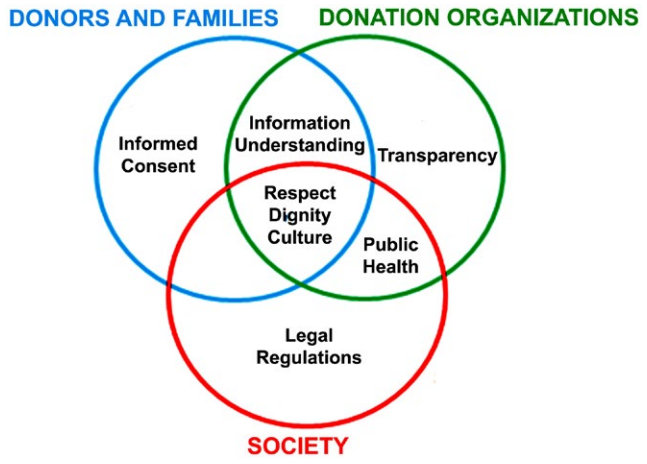

Figure 1.

Principles for proper treatment of willed body donors. The guiding principles that should be followed by those utilizing willed body donors for medical education and research. The blue circle represents the principles that revolve around the donor and the family: detailed informed consent, complete and transparent information and an understanding for the donor's and family's feelings. The green circle represents the principles that revolve around the donation organizations: utmost respect and dignity for the donor, an understanding for the donor's and the family's feelings, an awareness of the cultural and religious background of the society and a complete transparency of the program with the donors and with society. The red circle represents the principles that revolve around the society and the country: the public health concerns of dealing with human tissue, an awareness of the cultural and religious background of the society and the regulations associated with these practices.

informed whether there will be any financial gain on the part of the organization and whether the public will have access to the bodies or images (photos or videos) of the bodies. With this information, the donor and the family can then provide fully informed consent about what can and cannot be done to the donor's remains. This process should be guided by an understanding that this is an emotional decision for all involved that requires the maintenance of respect and dignity for the body donor throughout the process.

This respect for the donors and their families is again at the center of the **second theme**, the duties of the donation programs. Primarily, the program should treat all donors' remains with the same high level of respect and dignity. They should follow all applicable rules and regulations including public health and safety laws. They should be aware and respond appropriately to the different cultural and religious perspectives that may be harbored by each donor and family. The organizations should continuously strive to keep respect for the donor and the altruistic mission of their program at the forefront of all their activities. Each donation program should regularly provide public expressions of gratitude towards the donors and a method for honoring the donor's legacy. Advertising the donation programs' services in places of patient care, such as hospices and retirement homes, targets individuals when they are most vulnerable and can give the impression of hoping for someone's death. It therefore is incompatible with the concept of respect for donors and their families.

For the **third theme**, the society in which the donation program operates is also relevant to the proper conduct that occurs. All body donation programs should follow the societal norms as well as the local rules and regulations. These include public health and safety laws. The society has input to the proper treatment of willed bodies by the enactment of laws and regulations. A society should enact laws that reflect the ethical values of that society and, in the specific case of willed body donation programs, these laws should set limits on what can be done to willed bodies, and whether financial gain would be allowed. In the United States, this has not occurred and there appears to be a disconnect between the societal values and the laws that represent these values. Therefore, it is recommended that legislators in all countries enact laws that are congruent with their societal values and that provide oversight on how willed body programs operate.

It is true that the term "commercialization" covers a broad range of practices open to a variety of interpretations. *The driving principle of these recommendations is that any income generated by using donated bodies is to be used to further medical education and research and not to generate excess funds for individuals, corporations or stockholders*. Acceptance of, and adherence to, this principle is not compatible with organizations deriving financial profit from the brokering of donated bodies.

CONCLUSIONS

In brief, the principles described above should be followed by all organizations dealing with willed bodies in order to ensure the proper and respectful treatment of the donors. The foundation for these principles is that the utmost respect and dignity should be provided to those who altruistically donate their body to medicine.

The major conclusion from this ethical consideration of the commercialization of bodies for use in medical education is that no profit or financial gain should be generated throughout the entire willed body donation process. The organ donation programs within the US could be used as a model for the ethical use of willed bodies. This system recognizes the unique and valuable nature of the organs donated and attempts to remove financial considerations from this process. *With these principles in mind, commercialization, commodification and profit generation are not compatible with the highest ethical standards of care for those who contribute their most precious gift for the advancement of medical education and research*.

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