

## RESEARCH ARTICLE

## The Bioarchaeology of Structural Violence and Dissection in the 19th-Century United States

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**ABSTRACT** Structural violence is harm done to individuals or groups through the normalization of social inequalities in political-economic organization. Researchers working in both modern and prehistoric contexts focus on the lived experiences of individuals and the health disparities that arise from such violence. With this article, I seek to contribute to this literature by considering how skeletal evidence of dissection from the 19th-century United States reflects structural violence. I focus on “death experiences” and suggest that studies of structural violence must consider not only how inequality may be embodied as health disparities in the living but also “disembodiment” and the treatment and fate of the dead body. [*bioarchaeology, dissection, autopsy, structural violence, United States*]

**RESUMEN** Violencia estructural es el daño hecho a individuos o grupos a través de la normalización de desigualdades sociales en una organización político-económica. Investigadores trabajando en contextos tanto modernos como prehistóricos se centran en las experiencias vividas por individuos y las disparidades en salud surgidas de tal violencia. Con este artículo, busco contribuir a ésta literatura a través de considerar cómo evidencia esquelética de disección del siglo XIX en los Estados Unidos refleja violencia estructural. Me enfoco en las “experiencias de muerte” y sugiero que estudios de violencia estructural deben considerar no sólo cómo la desigualdad puede ser corporizada como disparidades en salud en el viviente, sino también en “descorporización” y el tratamiento y destino del cuerpo muerto. [*bioarqueología, disección, violencia estructural, Estados Unidos*]

Structural violence is harm done to individuals or groups through the normalization of inequalities that are intimately, and invisibly, embedded in political-economic organization (Farmer et al. 2006). Research on modern groups (Farmer 2004; Farmer et al. 2006; Holmes 2013) and bioarchaeological skeletal collections (Harrod et al. 2012; Klaus 2012) that employ the concept of structural violence have focused on the lived experiences of individuals and the resulting health disparities. The former have considered the relationship between embedded social inequalities and chronic infectious diseases such as HIV/AIDS and tuberculosis, while the latter have examined skeletal markers of systemic physiological stress (e.g., linear enamel hypoplasias, porotic hyperostosis) and traumatic injury. Here I focus on skeletal evidence of postmortem examination (i.e., dissection and

autopsy) from the 19th-century United States relative to the concept of structural violence. While the use of socially marginalized groups for dissection is well documented in the historical literature (Humphrey 1973; Richardson 1987), I will here demonstrate how the reformation of poor relief and the adoption of anatomy laws in the United States became intertwined and how they reflect the embedding of structural vulnerability for poor and socially marginalized groups. Almshouse inmates were vulnerable to this form of violence as they did not have the political or economic means to effectively resist or stop the illegal, and eventually legal, acquisition of the unclaimed dead for anatomical study. Conceptualizing dissection as a manifestation of structural violence extends the concept to encapsulate postmortem manifestations of social inequality.

## STRUCTURAL VIOLENCE

Johan Galtung (1969:168) describes violence as present “when human beings are being influenced so that their actual somatic and mental realizations are below their potential realizations.” This broadens the concept of violence such that it can be the result of direct action taken by an individual or group or indirect or structural violence that “is built into the structure and shows up as unequal power and consequently as unequal life chances” (Galtung 1969:171). Structural violence manifests in disparate distribution of resources, wealth, and access to medical services—and above all when the “power to decide over the distribution of resources is unevenly distributed” (Galtung 1969:171). Researchers such as Didier Fassin (2003), Paul Farmer (2003), and Seth Holmes (2013) consider the health consequences of structural inequalities in the modern world. Fassin (2003) focuses on three interrelated structural features of the AIDS epidemic in South Africa: socioeconomic disparities that increase risk of infection, rampant institutionalized sexual violence, and migration. Farmer and colleagues (Farmer 2004; Farmer et al. 2006) discuss AIDS/HIV and tuberculosis epidemics in Haiti and how they are “rooted in the enduring effects of European expansion in the New World and in the slavery and racism with which it was associated” (Farmer 2004:305). Holmes (2013) describes the experiences of migrant workers in the United States and details inequalities that are deeply embedded in the labor organization of the farms, as well as the more distal geopolitical forces that affect workers (e.g., NAFTA). All are united in their focus on articulating the disparities in material resources, education, and job opportunities as they are structured by temporally and geographically distal, macroscale political-economic forces.

The extension of structural violence into archaeological contexts is predicated on a relatively simple premise: socially derived disparities in access to and control over resources can have physiological consequences that can result in skeletal manifestations (Klaus 2012). While the connection between skeletal trauma and structural violence may seem more straightforward (e.g., an embedded political-economic organization that normalizes racially motivated interpersonal violence), institutionalized social inequalities can have a myriad of other physiological consequences observable in skeletal and dental remains (Crandall 2014; Schug et al. 2013).

Ryan Harrod and colleagues (2012) examined the skeletal remains of 13 individuals of Chinese descent from Carlin, Nevada, that date to between 1885 and 1923 in an effort to understand the structural violence experienced by Chinese immigrants during this period in U.S. history. The researchers observed high rates of trauma, activity-related changes, and pathologies such as bone infections. Grounding their interpretations in both regional and local history, and in comparison with skeletal material from contemporaneous groups, the authors concluded that these Chinese immigrants experienced hard labor, racially motivated violence, and poor living conditions.

Haagen Klaus (2012) presents a case study of the bioarchaeology of structural violence from the Lambayeque Valley of Colonial Peru. He reports on the analysis of 870 skeletal remains recovered from the site of the Chapel of San Pedro de Mórrope that date to between 1536 and 1750. Klaus and colleagues (Klaus et al. 2009) collected data on a wide range of skeletal indicators of health including evidence of systemic physiological stress, diet and dental health, activity patterns, and traumatic injury. The results indicate statistically significant increases in many of these indicators (e.g., porotic hypersostosis, femoral growth velocity, degenerative joint disease), which were then discussed within a framework of the structural inequalities and political-economic changes wrought by Spanish Colonial rule.

The physiological consequences of institutionalization and poverty have been reconstructed from skeletal material from almshouses, including the Oneida Insane Asylum (Phillips 1997, 2001), Monroe County Almshouse (Higgins et al. 2002; Higgins and Sirianni 1995; Sirianni and Higgins 1995; Sutter 1995), Albany County Almshouse (Solano 2006), Dunning Cemetery (Grauer et al. 1998), Blockley Almshouse (Crist and Crist 2011), and the Erie County Poorhouse (Sirianni et al. 2014). While not explicitly articulated, the results of these studies most certainly reflect the structural violence of “social arrangements that put individuals and populations in harm’s way” (Farmer et al. 2006:1686). Although my focus here is also on skeletal samples derived from almshouse or poorhouse collections, I am not reconstructing the health consequences of lived experiences but, rather, the “death experiences” of social inequalities.

While I would characterize the development and passing of anatomy laws that made it legal to dissect unclaimed bodies from almshouses and the resulting psychological stress associated with the fear of dissection as manifestations of structural violence, I would also extend the concept of violence to include “harm” done to the deceased.<sup>1</sup> While a dead body is no longer an experiencing body, an intact living body is not necessary for a social identity, as the dead may still exist in a relational social network (Hallam et al. 1999; Tarlow 2008). Indeed, in her discussion of what she terms *body love*, Nancy Scheper-Hughes (2011:173) prefers to use the term *person* rather than *body*, “to emphasize that death does not destroy personhood but often intensifies it.” Scheper-Hughes (2011) provides powerful examples drawn from modern contexts of the continued significance of the dead and in particular the manner in which the fragmentation of the body is equated with the fragmentation of the person. Archaeological (e.g., Chapman 2000; Jones 2005) and bioarchaeological (e.g., Duncan and Schwarz 2014; Geller 2012) research also emphasizes the fragmentary, relational, individual body and the idea that continued social existence or significance is not predicated upon an intact body.

A methodological and theoretical focus on the reconstruction of lived social experiences to the exclusion of “death experiences” establishes a dichotomy between life and death that may not be appropriate (Hallam et al. 1999).

Therefore, a bioarchaeology of structural violence must consider not only how inequality may be embodied as health disparities in the living but also “disembodiment” and the treatment and fate of the dead body.

The intent to cause harm to deceased remains is well established (e.g., see Tarlow’s [2008] discussion of the post-mortem history of Oliver Cromwell’s body). Dissection has been used as both a form of postmortem punishment and as a deterrent against crime (Hildebrandt 2008; Richardson 1987; Sappol 2002). In the early 16th and 17th centuries in both Britain and its North American colonies, dissection was meted out as postmortem punishment for executed criminals. This was first codified in 1789 by the New York legislature, which granted judges the power to add dissection to the sentence for particular crimes (Sappol 2002). Not only would this result in bodies being made available to medical schools, but it would establish dissection as a deterrent to crime. Beginning in the 1820s, anatomy laws extended this punitive association as a means of deterring indigence (Sappol 2002). For these laws to effectively employ dissection as a deterrent, they had to rest on a shared cultural understanding that there was a continued social significance attributed to the dead body and that the post-mortem treatment of a corpse informs on the living identity. Considering these laws from this perspective destabilizes the life–death dichotomy and facilitates the reconceptualization of dissection as a form of violence. Further, there was a complex intertwining of contrasting themes (masculinity–femininity; dominance–submission, knowledge–ignorance, spirit–body) that grounded the cultural perception of dissection.

Anatomists and medical doctors very much expressed their engagement with anatomy and the dead body in heroic, masculine terms: “They will hazard their own lives to detect the cause of death in others. Nor can infection nor contagion deter them from living examination or post mortem investigation” (Sappol 2002:80, citing an 1830 article in the *New York Medical Inquirer*). The dissecting room was portrayed as a dangerous, even liminal, space wherein the anatomist conquered the dead body. The act of dissection served as a rite of passage through which medical students had to traverse, emerging as members of the social and intellectual elite: it was the triumph of the spirit, of the mind, over the material, and inferior, body (Sappol 2002).

Sappol (2002:85) notes that the “anatomical body had an erotic valence, whether positive or negative, and usually gendered as female.” Thus, while the corpse was potentially dangerous, powerful, and something to be conquered, it was simultaneously feminine, erotic, and in need of protection. Critics of the anatomy laws that were passed beginning in the 1830s articulated grave robbing and the dissection as a violation of the integrity of the private interior of the body and linked it with rape, sodomy, necrophilia, and satanism (Sappol 2002). Again, the articulation of these negative associations suggests that the body was not just a container for the spirit and that after death it could still “experience”

such violent violations, and this reflects “a submerged and unacknowledged recognition of the continuing presence of the deceased” (Crossland 2009:110).

It was in this context that a “politics of class was conducted in the idiom of anatomy” (Sappol 2002:100). Beginning in the early 19th century, poverty was an increasingly significant and visible problem, prompting attempts to reform the system of social relief that focused principally on the actions of the individual as the cause of poverty rather than on the macroscale political economy that fostered structural inequalities. This ultimately set the stage for the passage of anatomy laws that identified the poor and the indigent as legitimate sources of cadavers for anatomical education.

### THE STRUCTURAL INEQUALITY OF THE POOR

In the United States, while territorial expansion and technological advances opened land and created jobs, there was a shift from an agrarian, credit-based economy to one dependent on wage earning from industrial production (Prude 1999). As articulated by Michael Katz (1986:9–10), the “transformation of social and economic structure disrupted social relations and created a class of highly mobile wage laborers subject to irregular, seasonal, dangerous, unhealthy, often badly paid work.” This transformation was predicated on fundamental changes to the organization of labor. The industrialization of manufacturing and agriculture altered how people worked and earned their living. Contrary to home manufacturing by independent skilled artisans, people now worked for someone else for most of their lives as wage laborers. Gone were apprenticeships and journeymen artisans—skilled labor became less prominent as “the logic of production subdivided work into smaller components that required less skill and less time to learn” (Katz 1986:5). As the skills required for most jobs declined, the pool of laborers increased, which in turn led to a decrease in wages. Thus, it was difficult for most to save enough money to survive through episodic unemployment. As there were fewer jobs available, and as most could not afford public transportation at the time, people were forced to move around the country to find work. There was a nearly 1,000 percent increase in the size of urban populations in the United States between 1800 and 1850 (Curry 1981) with rates of mobility within the city as well (Herndon and Challú 2013). The work that was available was low paying, dangerous, and tended to be seasonal (Katz 1986), which created cycles of poverty that would have had negative health consequences and increased the likelihood that individuals would have to seek relief at almshouses.

In the face of the escalating number of poor in the first decades of the 19th century, several states, including Massachusetts, New York, Pennsylvania, and New Hampshire, began investigating poverty as a “social problem, a potential source of unrest and the proper object of a reform movement” (Rothman 1971:156). In 1821, the Massachusetts state legislature created a committee (henceforth called the Quincy Report after the committee chair Josiah

Quincy) to investigate and document the methods of public relief in the state. Another influential report was the Yates Report of 1824, commissioned by the New York legislature. These committees found that the current state of poor relief, predominantly through “outdoor” relief (i.e., occurred outside the doors of an institution), was expensive and, even more troubling, was likely contributing to the problem of poverty (Rothman 1971). Ultimately, two classes of poor were identified: the able-bodied poor (i.e., those capable of working) and the impotent poor (i.e., those unable to work due to age, sickness, or disability). The latter were considered “worthy” and were seen as suffering poverty through no fault of their own. The able-bodied poor, however, were considered “unworthy,” and their condition was considered to be due to their own character and lack of agency.<sup>2</sup> Outdoor relief was believed to only encourage the inherently lazy and indolent nature of the unworthy poor and to lead to the erosion of the incentive to work and creation of a sense of entitlement (Rothman 1971).

While society should want to support the worthy poor, the problem was how to accomplish this without simultaneously supporting and encouraging pauperism. The almshouse was perceived to be the answer: by transferring social relief into the controlled environment of the alms or poorhouse, the worthy poor could obtain the assistance they deserved while also providing the opportunity to reform the character flaws of the pauper through labor. In the almshouse, when forced to work, “a degree of pride begins to operate in their bosom; this proves an incentive to exertion; they quit their station and shift for themselves” (Katz 1986:23, citing the Quincy Report). Labor and industry was the pathway out of poverty and toward upright citizenry.

The almshouse failed soon after its implementation, however, and ultimately only exacerbated the structural vulnerability of the poor. Katz (1986:25) notes that while early-19th-century institutions appear to have been succeeding in their mission, by the mid- 1800s nearly every one “had lost its original promise” and thus exposed the poor to conditions that directly, and negatively, affected health. By this time, reports indicate that living conditions were deplorable and that institutional management was inept. In 1857, a New York Select Committee visited every city and county almshouse in the state and reported that the poorhouses were “badly constructed, ill-arranged, ill-warmed, and ill-ventilated” (Rothman 1971:198, citing a 1857 New York Select Committee Report). The committee concludes that the majority of the almshouses are “disgraceful memorials of the public charity. Common domestic animals are usually more humanely provided for than the paupers in some of these institutions” (Rothman 1971:198).

While proximally the living conditions experienced by almshouse inmates represent violence, macroscale political-economic forces were operating that also contributed to their vulnerability and the violence they could experience. The changing societal perception of poverty, coupled with the demand for cadavers generated by the emergence and

expansion of the medical profession in the United States, created a context in which the poor became vulnerable to the postmortem violence of dissection.

### **ANATOMY LAWS**

The following discussion focuses on the events surrounding the passing of anatomy laws during the mid- to late 1800s in the United States, though the overall scope, focus, and influences on the development of anatomy laws parallel what is observed in Britain (Richardson 1987). Both countries experienced a rapid growth in the number of medical schools and a concomitant increase in the demand for anatomical specimens. Simultaneously, both countries were experiencing the political-economic effects of industrialization and the resulting inequities that fostered widespread poverty. Both countries ultimately came to much the same solution to both problems: reformation of the social-relief system and the passage of legislation that legalized the acquisition of the unclaimed dead of the poor. While the process was more sporadic and occurred on a state-by-state basis in the United States, ultimately the result was the same: the codification of inequality that put particular groups in harm’s way.

While dissection and autopsies were fundamental to the advancement of medical science, dissection as a form of postmortem punishment, however, first appeared in Britain in 1540. A royal decree of Henry VIII granted the newly chartered company of Barbers and Surgeons the bodies of four (later increased to six) executed criminals per year. This law, in addition to a 1752 act that added dissection as an alternative to gibbeting (postmortem hanging) in chains, remained the law in Britain until 1832 (Richardson 1987). In the North American colonies, the first statutes that explicitly allowed the dissection of executed criminals were passed in 1641 and 1647 in Massachusetts (Sappol 2002).

During the 17th and 18th centuries, with common law providing “a hazy license to disinter and dissect,” the demand for anatomical specimens was not great (Sappol 2002:102). But as the number of medical schools increased during the 19th century (from four to 160), the legal supply of available cadavers began to fall short of the demand, and a market for illegally acquired, “resurrected” bodies began to emerge (Hildebrandt 2010; Sappol 2002). The public anxiety and fear generated by grave robbing boiled over on a number of occasions, leading to a series of anatomy riots (20 such riots between 1785 and 1855; see Sappol 2002:106) that often targeted medical schools. Of particular note is the 1788 Doctor’s Mob in New York City. In 1787, a group of free blacks petitioned the city’s common council to stop the removal of the dead from the Negro Burying Ground. The petition was ignored, and it was not until a year later when the body of a white woman was reported stolen from Trinity Church that public sentiment resulted in action. The riot that ensued lasted for three days, during which the City Hospital was ransacked, medical students took refuge in the city jail, and six people were killed in confrontations between the mob and a mobilized militia (Sappol 2002).

In the aftermath of that riot, New York passed the 1789 “Act to Prevent the Odious Practice of Digging up and Removing for the Purpose of Dissection, Dead Bodies Interred in Cemeteries or Burial Places” (Sappol 2002). Many states subsequently passed anti-grave robbing legislation (Connecticut in 1810, Massachusetts in 1815, New York in 1819, Maine in 1820, Ohio in 1846), often coupling such efforts with the legal ability to dissect criminals (federal government in 1790, Michigan in 1844, New Hampshire in 1869, Vermont in 1870). In reality, these laws did little to curb grave robbing and were effective only in mollifying white middle- and upper-class fears and had little significance for those groups generally targeted for such activity: African Americans, Native Americans, immigrants, and the poor.

In the quest to distance itself from the taint of associating with grave robbers and resurrectionists, while also providing medical schools with a steady supply of anatomical specimens, the medical profession became enmeshed with the reformation of social relief and the problem of poverty. It was the utilitarian philosopher Jeremy Bentham who explicitly linked poor law reform and anatomical study and whose influence is observed in the development of anatomy laws in both the United States and Britain (Richardson 1987; Sappol 2002). Bentham argued from a position that a person’s value is based on their contribution to society and the public good. Bentham and his followers argued that poorhouses should be punitive in nature, intentionally designed to dissuade people from seeking public assistance (Sappol 2002); those individuals that did not or could not contribute to society should be made to work and, upon their death, should repay their debt to society. This utilitarian ethos infused the Benthamite perception of the corpse as well: any sentiment associated with the corpse was an “obstacle to the rationalization of society and culture” because a dead body should only be valued based on its usefulness to the living (Sappol 2002:118). While these anatomy laws explicitly focused on “unclaimed” bodies, masking an inherent classism, in reality the majority of such bodies came from economically depressed and racialized groups (Halperin 2007).

Beginning in the 1820s, states began to debate, and to sporadically pass, anatomy laws that allowed medical schools to acquire unclaimed bodies from almshouses. In 1831, Massachusetts was the first state to enact an anatomy law, though it was limited to Boston. In New York, attempts were made to pass anatomy laws in 1831, 1832, 1843, and 1844, though it was not until 1854 that the “Act to Promote Medical Science and Protect Burial Grounds” (commonly referred to as the “Bone Bill”) was passed (Sappol 2002). While on the surface these acts had the principal goals of stopping grave robbing and the advancement of medical science, they also reframed dissection as a deterrent against indigence and as a means of social control.

### **DISSECTION AS STRUCTURAL VIOLENCE**

That dissection is a manifestation of structural violence does not require a significant intellectual leap and is reflected,

though perhaps not explicitly, by research in both modern and historical contexts. Gareth Jones and Maja Whitaker (2012:246) criticize the medical profession for the continued use of “unclaimed” bodies as a form of exploitation because such bodies are, both historically (Halperin 2007; Humphrey 1973; Savitt 1982; Schultz 1992) and in modern settings, principally from poor and marginalized groups. Large numbers of unclaimed bodies are used in medical training in several countries in Africa, as well as in India, Brazil, and Bangladesh (Ajita and Singh 2007; Chakraborty et al. 2010; Gangata et al. 2010; see also Jones and Whitaker 2012). While not as prevalent as in these countries, Neela Dasgupta (2004) reports that nearly 20 percent of anatomy laboratories in the United States and Canada use unclaimed bodies for anatomical education.

There are a number of sites in Great Britain (Mitchell 2012) and the United States (see Table 1) in which there is skeletal evidence of postmortem examination. In the latter, such evidence has been observed in a number of different contexts including medical schools, public cemeteries, institutional contexts such as almshouses, and even privies. While I focus in this article on the institutional contexts, we cannot ignore what was occurring in the other sites (e.g., public cemeteries, medical schools) listed in Table 1. The structural inequality experienced by African Americans is well documented (e.g., Smedley and Smedley 2011), and skeletal evidence of postmortem examinations has been recovered from both public cemeteries (e.g., Freedman’s Cemetery) and from medical schools (e.g., Medical College of Georgia). While not interpreted or articulated as a form of violence, this evidence has been used to discuss structural vulnerability based on race and the embodiment of social inequality politics (e.g., Blakely and Harrington 1997; Davidson 2007; Nystrom 2011). However, skeletal evidence of postmortem examination should not be universally interpreted as a manifestation of structural violence; it is very much dependent upon the distinction between dissection and autopsy.

Dissection and autopsy can be differentiated based on intent and focus. The former is a procedure in which the primary focus is anatomical study, while the latter specifically refers to determination of cause of death. While this distinction may be quite fine, this masks a much deeper cultural significance and, as discussed above, is based on the perception of the body. During the 18th and 19th centuries, dissection was widely regarded as a violation of the body and was generally punitive in nature. While it stripped the individual of their social identity and transformed the body into an object, it simultaneously reinforced a living social identity (Crossland 2009). In contrast, the same stigma was not associated with autopsies. Rather than signifying an estranged, marginalized identity, autopsies marked an individual as important enough as to warrant an investigation of their death (Crossland 2009; Martensen 1992; Sappol 2002). Thus, as argued here, dissection would reflect structural violence whereas autopsy would not carry the same connotations. As

**TABLE 1.** *Samples with Known Skeletal Evidence of Dissection or Autopsy from the United States*

Sample	Reference
Champlain's Cemetery, ME	Crist et al. (2004)
Charlton's Coffeeshouse, VA	Dept. Architectural and Archaeological Research (2008)
James Fort, VA	Bruwelheide (communication with author, July 22, 2014)
Holden Chapel, MA	Hodge (2013)
Medical College of Virginia, VA	Owsley (communication with author, July 22, 2014)
Medical College of Georgia, GA	Blakely and Harrington (1997)
University of Michigan, MI	Blakely (1997) <sup>a</sup>
Charity Hospital Cemetery, LA	Owsley (1995)
Albany County Almshouse, NY	Lusignan (2004)
Blockley Almshouse, PA	Crist and Crist (2011)
Erie County Poorhouse, NY	Nystrom and Mackey (2014)
Dunning Poorhouse, IL	Grauer (communication with author, January 29, 2014)
Valley Medical Center, CA	DiGiuseppe and Grant (communication with author, May 13, 2014)
Eastern State Hospital, PA	Killoran and Pollack (communication with author, May 19, 2014)
Richmond Penitentiary, VA	Blakely (1997) <sup>a</sup>
New York African Burial Ground, NY	Blakey (2004)
Spring Street Presbyterian Church, NY	Novak and Willoughby (2010)
Newburgh Colored Burial Ground, NY	Nystrom (2011)
8th St. First African Baptist Church, NY	Angel et al. (1987)
Freedman's Cemetery, TX	Davidson (2007)
Old Frankfort Cemetery, PA	Pollack et al. (2009)
Alameda-Stone Cemetery, AZ	Heilen et al. (2012)
Annapolis, MD	Mann et al. (1991)
Milwaukee County Poorhouse, WI	Doughtery and Sullivan (2008); Richards (communication with author, July 22, 2014)

<sup>a</sup>These data are unpublished and are referred to by Blakely (1997).

there are disparate social meanings associated with dissection and autopsy, it is important to avoid glossing all evidence of postmortem examination as manifestations of structural violence. Therefore, the context in which the remains are found and the type and extent of skeletal involvement must be carefully considered.

Skeletal evidence of dissection versus autopsy rests on differentiating the degree to which the body has been fragmented and altered (Cherryson 2010; Crossland 2009:110). Evidence of dissection could include the multiplication of skeletal elements in a grave, artifacts associated with the postmortem retention of body parts for education or display (e.g., pins or hinges), replacement of part or all of the body, and the presence of cut marks not normally associated with autopsy, which may be indicative of surgical experimentation (e.g., transection of long bones or trepanation of the mandible). Conversely, autopsies are more limited in scope and would not result in the same degree of fragmentation or presence of cut marks.

There are two levels of contextual information that should be considered when distinguishing between dissection and autopsy. At the level of the individual feature, the main contextual evidence of dissection would be that the bones were recovered from nonmortuary contexts (e.g., wells, basements, privies) in what could be considered deviations from "normal" mortuary behavior. Medical waste pits that may contain amputated skeletal elements associated with hospitals or medical schools should be able to be differentiated from dissection in that they would only contain isolated skeletal elements and not full (or nearly full) skeletons. Here again, contextual evidence of autopsy would be identified based on the degree of care taken to intern the body in a "normal" manner (e.g., orientation of body, presence of a coffin). While we also need to consider the cemetery or site-level context as well (e.g., almshouse vs. public cemetery), as I will discuss further below, we need to be cautious that this evidence does not blind us to other possibilities.

**TABLE 2.** *Almshouses and Poorhouse Skeletal Samples from the United States*

Sample	Reference
<i>Samples with evidence of postmortem examination</i>	
Blockley Almshouse	Crist and Crist (2011)
Dunning Poorhouse	Grauer (communication with author, January 29, 2014)
Albany County Almshouse	Lusignan (2004)
Erie County Poorhouse	Nystrom and Mackey (2014)
Milwaukee County Poorhouse	Doughtery and Sullivan (2008); Richards (communication with author, July 22, 2014)
<i>No evidence of postmortem examination</i>	
Onondaga Poorhouse	Seib (2012)
Monroe County Poorhouse	Sirianni and Higgins (1995)
Oneida County Almshouse and Asylum	Phillips (2001)

### ALMSHOUSE BIOARCHAEOLOGY

There is a growing set of archaeological (Baugher 2001; Baugher and Lenik 1997; Bell 1990; Herdon and Challú 2013; Huey 2001; Spencer-Wood 2001; Spencer-Wood and Baugher 2001) and bioarchaeological (Grauer et al. 1998; Higgins et al. 2002; Higgins and Sirianni 1995; Sirianni and Higgins 1995; Sutter 1995) literature on almshouses in the United States. Several skeletal collections deriving from such contexts, many of which have evidence of postmortem examination, have been recovered and analyzed (Table 2). Despite this frequency, the discussion of evidence for dissection and autopsy has only a limited distribution, with several of the collections reported in theses (e.g., Albany County Almshouse, Milwaukee County Poorhouse) and the gray literature or conference abstracts (e.g., Blockley Almshouse). In this section, I focus on the evidence from two almshouses cemeteries from New York State: the Albany County Almshouse and the Erie County Poorhouse. The material from the former site formed the basis for the theses of Martin Solano (2006) and Kimberly Lusignan (2004), while the analysis and interpretation of the Erie County Poorhouse cemetery is ongoing. Both almshouses were associated with medical schools, and the archaeological and osteological evidence suggests that individuals were dissected—although, as I will discuss, interpretation is not necessarily straightforward.

The Albany County Almshouse cemetery served as the burial site for almshouse inmates, individuals from local hospitals and penitentiaries, and unclaimed bodies from the City of Albany between 1826 and 1926 (Solano 2006). The Albany Medical Center, established in 1839, had a close relationship with the almshouse, and historical records indicate that some bodies were claimed by the school for dissection. As I will discuss shortly, however, while individuals exhibiting evidence of postmortem dissection were recovered during excavation of the almshouse cemetery and appear to

have been given “normal” burials, these likely only represent a small fraction of the total number of individuals dissected at the school.

Death records indicate that the Albany Medical Center collected 312 bodies from the almshouse beginning in 1894, while almshouse burial records indicate that six bodies were received from the medical center between 1890 and 1892 (Solano 2006). Clearly there is a discrepancy in the dates in which bodies were obtained by the medical center and when they were buried at the almshouse. This may suggest that the medical center was obtaining bodies from the almshouse before 1894 (Lusignan 2004; Solano 2006) and thus may represent an attempt to hide this activity. But, given that it was legal to use the unclaimed bodies of the poor for dissection in New York since 1854, this discrepancy is hard to reconcile. Last, to compound the issue, excavations at the almshouse only recovered 51 (5.65% of the 903 individuals recovered during excavation) individuals that exhibited evidence of postmortem examination (Table 3). Out of these 51 individuals, 68.75 percent were male, 31.25 percent were female. These skeletons, whether representing pre- or post-1894 acquisitions, represent only a very small proportion of the potential number of individuals utilized by the medical center; the final disposition of the other remains is unknown, though most likely they were disposed of in nonmortuary contexts.

The nature and distribution of the observed cut marks suggest that the individuals were dissected and used for surgical practice or experimentation. Lusignan (2004) notes that there was quite a bit of variability in the form, location, and quality of the craniotomies, likely reflective of the fact that these individuals were specimens in gross anatomy courses where students were learning dissection techniques. Four crania have small holes drilled into either the temporal, frontal, or occipital bones, which suggests they may have been used as rearticulated teaching specimens. One

**TABLE 3.** *Age and Sex Distribution of Individuals with Evidence of Postmortem Cut Marks from the Albany County Almshouse<sup>a</sup>*

	Subadult (0–19 years)	Young adult (20–35 years)	Middle adult (35–50 years)	Old adult (50+)	Total
Male	3	15	10	5	33
Female	0	2	8	5	15
Unknown	0	0	0	3	3
Total	3	17	18	13	51

<sup>a</sup>Lusignan (2004) originally reported demographic data based on age ranges (0–4 years, 5–9 years, etc.), but these were entered into the above categories (i.e., Subadult, Young adult, etc.) to facilitate comparison with the data reported for Erie County Poorhouse.

individual also exhibits two trepanation cuts (Lusignan 2004). The majority of evidence from the postcranial skeleton consists of transversely sectioned long bones. Other examples of postcranial examination include two vertebrae (one thoracic and one lumbar) with cuts on the lamina, a diagonally cut clavicle, and an ischium.

The Erie County Poorhouse was established in Buffalo, New York, in 1851, and from its inception it was associated with the Buffalo Medical Center. Excavations in advance of 2012 identified 480 burial features. Historical, bioarchaeological, and archaeological analysis of the recovered skeletal material is ongoing but has important implications for the reconstruction of structural violence (Byrnes 2014; Higgins et al. 2014; Muller 2014; Perrelli and Hartner 2014; Raines 2014; Sirianni et al. 2014). Archaeological evidence indicates that 87 of the burial features contained empty coffins, while an additional six contained wood logs. The reasons that these coffins were empty could be legitimate (e.g., reclamation of body by family, transfer to other cemeteries), though it is also possible that these bodies were disinterred for dissection.

Out of a minimum number of individuals of 376, 20 individuals (5.3%) exhibit evidence of postmortem examination (Table 4). This is very close to the percentage reported by Lusignan (2004) for the Albany County Almshouse. Additionally, much as observed at the Albany County Almshouse, males are more commonly affected (9 of 20, 45%) than females (3 of 20, 15%), while age is skewed toward middle and old adults. One subadult displays evidence of dissection.

The majority of evidence for postmortem examination were craniotomies (60%; see Figure 1), two of which also exhibited evidence of postcranial involvement. The rest of the evidence is from postcranial elements and includes the transection of long bones, thoracotomies, and laminectomies (Figure 2). The left elbow of one individual was removed and possibly kept as a teaching specimen (Figure 3).<sup>3</sup>

It is possible that the transection of long bones represents failed amputations and thus is not dissection at all. In the material from the Erie County Poorhouse, however, the transected long bones have additional cut marks that suggest activity beyond amputation. For instance, there is



**FIGURE 1.** *Example of a craniotomy from the Erie County Poorhouse (Loc #246). (Photo by author)*



**FIGURE 2.** *Example of long bone transection from the Erie County Poorhouse (Loc #222). The right tibia of an approximately seven- to ten-year-old juvenile was transected through the proximal epiphysis and approximately four centimeters from the distal epiphysis. (Photo by author)*

**TABLE 4.** *Age and Sex Distribution of Individuals with Evidence of Postmortem Cut Marks from the Erie County Poorhouse<sup>a</sup>*

	Subadult (0–19 years)	Young adult (20–35 years)	Middle adult (35–50 years)	Old adult (50+)	Middle–Old adult	Total
Male	0	1	6	0	2	9
Female	0	2	0	0	1	3
Indeter.	0	1	0	0	4	5
Unknown	1	0	0	0	2	3
Total	1	4	6	0	9	20

<sup>a</sup>Age ranges are based on Buikstra and Ubelaker (1994). The Middle–Old adult category represents instances in which an individual could not be unequivocally classified into either category. Probable Males and Probable Females were collapsed into their Male and Female categories respectively.



**FIGURE 3.** *Anterior view of right and left humeri, radii, and ulnae of an adult individual from Erie County Poorhouse (Loc #220). The distal portion of the right humerus and the proximal portions of the right ulna and radius are missing and possibly represents the retention of these elements. (Photo by author)*

one example in which there is evidence for a perimortem fracture of the left femur, which may have precipitated an attempt at surgical amputation (Figure 4). However, there are additional cut marks on the distal portion of the femur, adjacent to the perimortem fracture. There are at least two plausible scenarios that could explain these additional cut marks. First, they are ante- or perimortem and reflect an attempt to remove bone fragments from the fracture site. Or, second, these additional cut marks are postmortem and reflect an opportunistic examination of the fractured bone.

At this point, there are two important caveats that need to be addressed. First, we need to avoid creating essentialist and isomorphic categories out of “the poor” or institutionalized contexts. The political economy of the 19th century meant that the potential for catastrophic destitution would have crosscut socioeconomic class. Almshouse inmates would, therefore, have been constituted by individuals from diverse ethnic, racial, and economic backgrounds. Furthermore, not all institutions would have operated in the same manner nor exposed inmates to the same stressors. For example, the Oneida County Asylum in Rome, New York, specialized in the care of the chronically insane (Phillips 2001:26). Contrary to the predominantly short-term, seasonal residency that characterized some almshouses, inmates at the Oneida asylum generally entered as young adults and remained for the rest of their lives (Phillips 2001:11). Shawn



**FIGURE 4.** *Posterior view of left femur from Loc#79. The white arrows points to the possible perimortem fracture while the black arrow to the presumed amputation site. The gray arrow indicates the location of additional cut marks that transected what would have been bone fragments resulting from the initial fracturing. (Photo by author)*

Phillips (2001) suggests that this long-term institutionalization may have buffered inmates from some of the consequences of industrialization while simultaneously exposing them to a unique set of stressors.

Second, we cannot—and should not—gloss all evidence of postmortem examination observed in skeletons from institutional contexts, or from the cemeteries of socially marginalized groups, as evidence of dissection and therefore of structural violence. It is possible that in those instances in which an individual exhibits only limited skeletal evidence for postmortem examination, the intent of the examination was to determine the cause of death. Both the Erie County Poorhouse and the Albany County Almshouse were associated with hospitals, and while minimal, medical care was provided to inmates in both institutions (Solano 2006). Thus, it is possible that the death of an inmate, or that of an unclaimed body from the city, resulted in an autopsy and that the cadaver did not become an anatomical specimen. While the context from which such remains come is suggestive of dissection, in such instances it is not possible to unequivocally differentiate between the two procedures. From this perspective, the ten individuals from the Erie County Poorhouse that only had craniotomies could have been autopsied and thus would not reflect a manifestation of structural violence. This is not to say that these individuals did not suffer from structural violence in life, just that in these particular instances we cannot unequivocally extend this violence into death.

Similarly, it is illustrative to examine the distinctions between the evidence of postmortem examination from two African American cemeteries: the Freedman's Cemetery in Dallas, Texas, and the Newburgh Colored Burial Ground in Newburgh, New York. James Davidson (2007) reports on two individuals that exhibited skeletal evidence of postmortem examination, recovered from the Late Period of the Freedman's cemetery (1900–1907). Burial 558 contained the remains of two middle adult males. The first individual was in an extended supine position, which Davidson (2007) characterizes as normative mortuary treatment. Evidence of postmortem examination includes a craniotomy, bisection of the femora at midshaft, and missing lower legs and feet elements. The second individual was in a prone position in the foot of the coffin, with his lower legs tightly flexed over the back of the thighs. This individual was missing the skull, the superior six cervical vertebrae, and the forearm bones and hands. The archaeological and osteological evidence suggests that these individuals were dissected for anatomical study (Davidson 2007).

In contrast, the nature of the evidence observed at the Newburgh Colored Burial Ground (1830–1870) is distinct (Nystrom 2011). Evidence of a postmortem examination was observed in one young adult female. The remains were found in correct anatomical position, and there appears to be no deviation from expected mortuary behavior (e.g., orientation of the grave, position in the coffin, etc.) relative

to the other interments. The postmortem examination appears to have been limited to the removal of the calotte, and there were no indications of any postcranial cut marks nor are any of the major long bones missing. There is no archaeological evidence of broken coffins or disinterment. The most conservative conclusion based on this evidence is that the postmortem examination was an autopsy and was not explicitly for anatomical study.

The point of these examples is to illustrate that we must be careful not to see structural violence where it may not have existed and to be cognizant of the limitations of the data on which we rely. There is little doubt that during life African Americans and almshouse inmates were constrained within a political-economic structure that exposed them to systemic inequalities that had negative physiological manifestations. It is also clear that in death the potential for the continuation of that inequality existed, but this may have had a variable manifestation.

## CONCLUSIONS

In the mid- to late-19th-century United States, several macroscale political-economic processes created a context in which specific groups within society became more vulnerable to social inequities and, in the process, were more likely to be dissected against their will. Fundamental shifts in the nature of the economy fostered the emergence of a pool of migratory, unskilled, and unemployed workers. In the increasingly industrialized nation that emphasized productivity and labor as fundamental values, a “stridently hostile attitude toward the poor” (Huey 2001:130) emerged as this growing class of people was recognized as a problem because they could not, or did not, produce. The sheer numbers of the unemployed put increasing strain on the social relief system, leading to a reform movement that led to the widespread establishment of almshouses. Changes in the societal perception of the poor, and more precisely the root cause of poverty, created a context in which poor individuals were identified as either “worthy” or “unworthy” and, when combined with legislation that legalized the dissection of “unclaimed” bodies from almshouses, became subject to legalized inequality.

Socially derived disparities in access to and control over resources can have physiological consequences that can result in skeletal manifestations. There is value in reconceptualizing bioarchaeological data in this way as it facilitates communication between sociocultural and biological anthropology while promoting anthropological engagement with structural violence (Farmer 2003:12; Klaus 2012). A key feature of structural violence is that it is so deeply embedded within political and economic organization that it becomes normalized and invisible (Farmer et al. 2006). The formation and justification of the almshouse reflects this invisibility at two levels. At the local level, the almshouse effectively removed the poor from the community, concentrating them into a centralized location where they could be monitored and controlled. At a national scale, the almshouse

reflects structural violence in that the cause of poverty was not to be found in society itself or in the radical change in economic structure accompanying industrialization. Rather, the problem lay within the individual. The “unworthy” poor were poor due to inherent character flaws (e.g., intemperance), and only through the reformation of themselves, through labor, would the problem be fixed. By focusing on these proximal factors that led to poverty, the national-scale, political-economic factors essentially became invisible. The passage of anatomy laws was also articulated as a means of dealing with the problem of the poor. The threat of dissection was a means of social control meant to deter laziness and sloth.

While work with living populations (Farmer 2004; Holmes 2013) and bioarchaeological collections (Crandall 2014; Harrod et al. 2012; Klaus 2012; Schug et al. 2013) focus on the lived experience of structural violence and its health consequences, here I am examining the experiences of the dead body. Clearly the increasingly hostile perception toward the poor, the development of almshouses as a means of character reform, and the implementation of anatomy laws created an environment of institutionalized inequality in which some groups were exposed to harm. If we accept that social identity doesn’t end at death and that, indeed, death may intensify personhood (Scheper-Hughes 2011), then the act of fragmentation itself and the resulting objectification of the body, and not just the political-economic context that legitimated the act, represents structural violence as well. This article represents only an initial foray into the bioarchaeological examination of the history and significance of dissection and autopsy in the United States. The evidence I discuss here covered only 100 years and only from institutional contexts. It also did not directly address the relationship between postmortem examination and structural violence as observed in African American skeletal collections. Given the deep history of direct and indirect violence perpetrated against people of African descent, this would be a useful perspective in which to interpret such evidence.

The use of unclaimed bodies in medical education continued into the 20th century and remains a significant ethical issue to this day (Hildebrandt 2008; Jones and Whitaker 2012). Scheper-Hughes’s (2011) discussion of the way in which the body is fragmented, commodified, and sold also reflects the continuation of the structural inequality that exposes certain groups to harm. Lest we let our critical eye stray too far, biological anthropologists must also acknowledge the source of our data as well (Muller et al. n.d.). The large skeletal collections that are so frequently utilized by biological anthropologists, including the Hammond Todd, Robert J. Terry, Huntington, and William Montague Cobb skeletal collections, are all the result of anatomical dissections at medical schools. As we attempt to reconstruct violence, be it direct or indirect, from skeletal material, we must remain cognizant, as good anthropologists, of our position within the very structure that we are trying to examine

and acknowledge our potential contribution to the violence (Scarre 2006).

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## NOTES

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1. There was very real fear generated by the activities that surrounded the acquisition of cadavers for medical training. Sappol (2002) recounts a tale of young woman that died with a rare disease and her family that took pains to bury her body close to the house so that they could ensure that it would remain undisturbed. Davidson (2007) and Halperin (2007) both provide historical references and folktales regarding how African Americans viewed medical schools, anatomy, and their association with grave robbing.
2. Some, however, recognized the structural inequality that caused poverty. In an 1843 speech delivered to the Boston Society for the Prevention of Pauperism, Walter Channing, a professor of Obstetrics and Medical Jurisprudence at Massachusetts General Hospital, argued that poverty was not the fault of the individual: “What, then, are the causes of that condition which you have associated to prevent? The popular view looks for and finds these causes in the condition itself. The pauper is forever looked to as the active, the sole agent in the production of his own misery” (2010:18). Channing considered poverty as a social condition and believed that society itself was the “great and whole source of the whole misery of the social state” (Channing 2010:21).
3. This is suggested because the distal humerus and proximal ulna and radius were the only elements not recovered during excavation of this individual.

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