

This article has been accepted for publication in MH following peer review.  
The definitive copyedited, typeset version is available online at [10.1136/medhum-2019-011708](https://doi.org/10.1136/medhum-2019-011708)

**“Knowing everything and yet nothing about her”. Medical students’ reflections on their experience of the dissection room.**

Christopher Kassam\*

Foundation House Officer

Addenbrooke’s Hospital

Cambridge

UK

Email: [christopher.kassam@nhs.net](mailto:christopher.kassam@nhs.net)

Telephone: (+44) 7795 843366

Postal address: 32 Leopold Walk, Cottenham, Cambridge, CB24 8XS, UK

Robbie Duschinsky

University Senior Lecturer in Social Sciences

Primary Care Unit

Department of Public Health and Primary Care

University of Cambridge

UK

Cecilia Brassett

University Clinical Anatomist

Department of Physiology, Development and Neuroscience

University of Cambridge

UK

Stephen Barclay

University Senior Lecturer in Palliative Care and General Practice

Primary Care Unit

Department of Public Health and Primary Care

University of Cambridge

UK

\* Corresponding author

Keywords: anatomy; dissection; education, medical; knowledge; professionalism

Word count: 7288

## **ACKNOWLEDGEMENTS**

The authors wish to thank the medical students at the University of Cambridge who gave permission for their tributes to be used for this study. We also thank Dr Michelle Spear, formerly Deputy Clinical Anatomist and currently Director of Teaching and Deputy Director of the Centre for Applied Anatomy, University of Bristol, for her contribution to the student tributes during the periods studied, and Dr Helen Taylor, Ms Lynn Haythorpe and Dr Isla Fay, staff of the Human Anatomy Teaching Group, Department of Physiology, Development and Neuroscience, University of Cambridge, for their support of this project. Most importantly, we thank the donors and their families who make cadaveric dissection possible at Cambridge. Finally, we thank the anonymous peer reviewers for their insightful comments.

## **FUNDING, COMPETING INTERESTS & ETHICS APPROVAL**

CK is a former medical student at Cambridge and RD, CB and SB teach Cambridge medical students. They undertook the study without external funding. The authors declare they have no conflict of interest.

The study was approved by the University of Cambridge Human Biology Research Ethics Committee, ref. HBREC.2015.19.



## **ABSTRACT**

Anatomy education by cadaveric dissection teaches medical students not only the formal curriculum in human anatomy, but also a 'hidden curriculum' whereby they learn the attitudes, identities and behaviours expected of doctors. While dissection has been investigated as a challenge to and training in emotional regulation, little attention has been paid hitherto to the forms of medical knowledge and identity which students encounter and develop in the dissection room. This study analyses a corpus of 119 tributes written by three consecutive cohorts of first-year medical students at the University of [deleted] to their cadaveric donors. We employ a Foucauldian discourse analysis methodology, seeking to elucidate the features of the subject position, the narrative 'I' or 'we' of the tributes, and the modes of knowledge which operate between that subject position and its object, the donor. We observe that students find themselves in a transitional state between personal and scientific modes of knowledge of the human, which correspond to different models of the subject position occupied by the student. While in many tributes these modes exist in an uneasy disjunction, others employ creative reflection to suggest new modes of knowledge and identity which may inform ethical practice.

## INTRODUCTION

The practice of human cadaveric dissection as a means of teaching anatomy to medical students has a long history.<sup>1</sup> While newer pedagogical methods have recently been adopted by many medical schools and time dedicated to anatomy teaching has been progressively reduced as more recent biomedical disciplines have become increasingly central to clinical practice, traditional dissection remains widespread globally, and there is vigorous debate over its merits.<sup>2</sup> Among the arguments proposed by its defenders is the claim that dissection teaches much more than anatomical science: it also acts as a crucial formative experience for professional identity.<sup>3, 4, 5</sup> Dissection is thus a significant mediator of the so-called 'hidden curriculum', which operates alongside the formal curriculum to shape the attitudes, identities and behaviours of future doctors.<sup>6, 7, 8</sup>

While there has been considerable interest in hidden or paracurricular dimensions of dissection, previous studies have focused on the emotional impact on students of encountering and cutting into a dead body for the first time, and the strategies adopted to regulate these emotions. Two broad approaches may be discerned in the literature. First, many studies adopt a psychological approach which explores students' anxieties and delineates 'coping strategies' developed in response.<sup>9, 10, 11</sup> Such studies commonly point to an attitude of scientific detachment or depersonalisation adopted as a means of emotional regulation, and suggest that this may be a precursor to the 'detached concern' of the medical professional.<sup>3, 12, 13, 14, 15,</sup>

The second approach adopted in the literature situates the individual within the social context of dissection as practice and institution.<sup>17, 18, 19</sup> These studies suggest that mechanisms of emotional regulation are not elaborated by the individual in isolation, but rather transmitted through discourses which surround the practice of dissection. For instance, Daniel A. Segal suggests that dissection represents one of a series of 'trials' in which medical students encounter and subdue their emotions about the human body.<sup>18</sup> The 'cadaver story' observed by Frederic W. Hafferty in 1988 (a genre of practical joke utilising cadaveric body parts) explicitly dramatised the distressing transgression of taboos which occurs in the dissection room, as well as the overcoming of such emotional responses via detachment and humour.<sup>19</sup> Such transgressive practices are less prevalent in modern educational dissection, which tends to posit the relation to the cadaver as the student's introduction to 'professionalism', a network of institutions and relations designed to regulate individual behaviour and response.<sup>20, 21, 22, 23</sup> Dissection emerges as a pedagogy of 'feeling rules' for the emotional labour of a medical career.<sup>24</sup>

The literature to date suggests, then, that one paracurricular effect of dissection is the production of doctors skilled in managing as professionals their emotional responses to nudity, death and cutting into the human body. However, far less attention has been paid to a second important potential effect: the introduction of students into regimes of medical knowledge. Michel Foucault argued that modern medicine represents not only a set of institutions, practices and technologies, but also a 'discourse' - a distinctive body of statements governed by a coherent set of rules.<sup>25</sup> These rules are organised around a characteristically medical construct of truth, understood as "a system of ordered procedures for the production, regulation,

distribution, circulation, and operation of statements.”<sup>26</sup> Thus statements can be recognised to belong to the discourse of medicine, to constitute true medical knowledge, insofar as they are organised by a medical truth-construct, whereas (say) historical knowledge is organised by a distinct historical truth-construct. The criteria that a medical statement must meet to be recognised as ‘true’ (for example, citing quantitative evidence produced in accord with recognised experimental and statistical protocols) are quite different from those a historical statement must meet (which may entail reference to documentary evidence, theoretical models of causality and so forth).

The Foucauldian model further suggests that the rules of discourse produce not only statements, but also their speakers, understood structurally as the linguistic and institutional subject-functions of statements. “I” am not independent of what I say, but produce myself through my statements, for example as a “doctor” or a “historian”. We become who we are not prior to language, but precisely through the ways we learn to speak and to know, the discourses into which we are inserted as subjects. The medical subject thus emerges and recognises itself in the relations of medical knowledge which it is uniquely licensed to occupy.

Applying a Foucauldian model of subjectivity to the analysis of contemporary medical education, we may therefore suggest that to become a doctor is (at least in part) to be inserted into the subject-position of medical discourse. One element of the ‘hidden curriculum’ relates to learning the rules of this discourse and thereby becoming recognisable as a medical subject, capable of making true statements about (say) diagnosis or prognosis. This study undertakes a Foucauldian discourse analysis of tributes to cadaveric donors written by first-year medical students at the



University of [deleted], with the aim of investigating the hidden or paracurricular activity taking place in the dissection room. The [deleted] tributes offer an opportunity to investigate this process at an early stage, to analyse the strategies deployed by first-year students as they attempt to negotiate this transition. This study therefore attempts to address the research question: what modes of knowledge operate between student and donor in these texts, and what models of medical subjectivity do they imply?

The elaboration of medical knowledge in the dissection room has been tangentially addressed by a few previous studies. Segal argues that dissection is structured by a movement from initial intimidation to eventual congratulation, in which the turning point is the reframing of the challenge as a matter of technical competence rather than emotion or uncertainty: “The facts and algorithm provided by the instructors redefine the problem in technical terms, that is, as a question of ‘*how to do something*’ rather than a question of ‘*what should be done?*’”<sup>27</sup> This process entails a double redefinition: the patient becomes “an object that can be known and handled through technical routines”, while the doctor becomes “the agent who performs these routines impersonally and unemotionally – that is, ‘professionally.’”<sup>28</sup> If dissection inculcates ‘feeling rules’ for emotional regulation, it does so partly through the construction of the doctor as the subject of a pure, scientific knowledge which guarantees a competence equal to the challenges posed by clinical practice as an essentially technical discipline. As Smith and Kleinman have argued with reference to medical training in general, “science itself is an emotion management strategy”.<sup>29</sup> The question of how knowledge is structured in our dataset thus has significance not only for the institution of regimes of medical knowledge of which

patients are the object, but also for the development of the strategies by which doctors construct themselves as 'professionals'. The dissection room is perhaps the first place where a medical student is required to put their emotions aside and regard a human body as the object of technical rationality.

## **METHODS**

### **Dataset**

Our dataset consists of tributes written by first-year undergraduate medical students at the University of [deleted] in three consecutive academic years (2013/14, 2014/15 and 2015/16). At [deleted], students are taught anatomy principally through cadaveric dissection. Students undertake two sessions of dissection each week for most of their first academic year in groups of six to eight. Each group works primarily on one donor throughout the year, guided by a purpose-written Dissection Manual. Students are initially given minimal anonymised information about their donor: age, occupation and a brief medical history.

Towards the end of the academic year, each group is asked to compose a short tribute which may be sent to the donor's relatives. The email which students receive with this request gives no formal parameters other than length; however, it does include the following sentence: "Your tributes are important, as they mean a great deal to the next of kin, therefore this is your opportunity to convey to the donor's family, your appreciation and understanding of the sacrifice made by both the donor and their family members." It also includes four example tributes written by

students in previous cohorts. Students are told that their tribute will also be displayed at a Committal Ceremony held in the dissection room at the end of the academic year, at which students and departmental staff are present, and at which students learn their donor's name and (at the family's discretion) further biographical information. Family members are subsequently invited to a separate Memorial Service in the following October.

For students who had undertaken dissection in 2013/14 and 2014/15, all members of each group were contacted by e-mail to ask for consent to use their tribute retrospectively. For those undertaking dissection in 2015/16, consent was sought prospectively at the beginning of the academic year. This difference in the procedure for seeking consent introduces a slight heterogeneity into the dataset, since tributes written in 2015/16 were composed in the knowledge that they would be read by researchers. In total, consent was given by 120 of 128 groups of students. One tribute was excluded as it had been co-authored by one of the authors [deleted], leaving a dataset of 119 tributes.

The study was approved by the University of [deleted] Human Biology Research Ethics Committee. As the study makes use of an existing dataset and consent was obtained from all participants, the only ethical issue that arises in the maintenance of confidentiality; this was accomplished by anonymisation.

### **Analytic Method**

On the basis of the Foucauldian model of the relationship between subjectivity and knowledge which undergirds our research question, it was decided to carry out a discourse analysis of the tributes.<sup>30</sup> As Foucault emphasises, the aim of discourse

analysis is to “grasp the statement in the exact specificity of its occurrence; determine its conditions of existence...establish its correlations with other statements that may be connected with it, and show what other forms of statement it excludes.”<sup>31</sup> A discourse analysis thus begins from close reading and attempts to delineate structures immanent in the text, rather than reducing the text to a product of authorial intention or a mirror of extradiscursive social structures. Thus a tribute might be read not as a reflection of its authors’ position between lay and medical worlds, nor as an attempt to produce certain impressions in its primary recipients (the donor’s relatives or friends), but rather in terms of the structures of knowledge which organise it. The subject and object of knowledge are analysed as functions of such structures.

Our analysis therefore began from a close reading of the 119 tributes, with a focus on the epistemic relation between the subject (the student) and object (the donor) of knowledge. The aim of the close reading was to specify the sense of terms such as ‘know’ based on their usage in the tributes, and thereby to delineate the structure of knowledge in each tribute, along with its correlative subject-position. Particular attention was paid to two topics: first, the imagined dynamics of the flow of knowledge between student and donor; second, the level at which the object was interrogated – that is, the relation between the *object* and the *content* of knowledge, the donor and the true statement about them.

Finally, we collated and compared across the corpus of tributes. It quickly became apparent that many of the tributes echoed each other lexically and semantically when characterising the epistemic relation between student and donor, deploying a number of shared rhetorical resources which we have labelled ‘themes’. Examples of

such themes include: 'not knowing the donor', which was the site for reflections on the experience of intimately dissecting a stranger; 'real anatomy not illustrations', which asserted the superiority of cadaveric dissection over other methods of learning anatomy; 'the donor as teacher', which characterised the relationship between donor and student as a pedagogical one; and 'the donor as first patient', which approached the experience of dissection as the beginning of a clinical career. Such themes acted as hubs for convergence and divergence between tributes, which might deploy the same theme to radically different effect within their respective rhetorical economies. By mapping these strategic convergences and divergences, we identified overarching 'epistemic modes', structures of knowledge shared across multiple texts. However, the construct of an epistemic mode should not be taken to imply homogeneity, and just as several epistemic modes coexist and collide within the overall ecology of knowledge in the tributes, each epistemic mode itself is populated by multiple submodalities.

### **Limitations and Caveats**

Our analysis is based on a sample from one university in the UK. In consequence, caution should be exercised in drawing conclusions about medical identities in general from this sample. It was decided to sample the entirety of three academic years (subject to consent), allowing for extensive exploration of modes of knowledge in a large dataset.

One of the authors [deleted] is himself a former [deleted] medical student, who undertook dissection in the academic year 2014/15. This position inevitably means that he brought to the project certain preexisting interests and reflections, which

may have inflected his interpretation of the tributes. However, it also gives him greater insight into the social context from which the tributes emerge than would be available to an external researcher, and allows him to be confident that the issues we explore are indeed germane to the principal concerns of undergraduate medical students experiencing dissection.

As discussed above, the aims of the study were to analyse the modes of knowledge operative in the tributes, and to investigate the models of medical subjectivity thereby produced. We must emphasise, however, that the findings of this analysis cannot simply be taken as equivalent to claims about the ways in which individual medical students undertaking dissection know their donors, for three reasons. First, each tribute was produced by a group of students; it was not possible to ascertain to what extent each tribute was produced collaboratively or was composed by a single primary author. Second, the tributes were produced in the expectation that they would be read by multiple audiences, principally the donors' relatives or friends: this expectation may have shaped both form and content. Third, we may expect certain phraseologies, themes and even narrative forms to circulate among each cohort and potentially between cohorts of medical students: the tribute is a genre with its own implicit rules and conventions (which may of course be parodied, bent or broken). Taken together, these limitations suggest that insofar as the tributes can offer any evidence at all about the epistemologies of medical practice, they constitute an archive of some of the possible resources which current [deleted] medical students may deploy in constructing and performing themselves as subjects of knowledge, rather than an exhaustive record of the developing medical subject.

## **Patient and Public Involvement**

This research was conducted without direct patient and public involvement. The technical and theoretical nature of discourse analysis precluded direct involvement in study design and interpretation of results. However, the research question was informed by numerous conversations with patients which attested to a sense of reification as the object of medical knowledge, epistemologically distinct from the doctor as the knowing subject. A non-technical summary of our findings will be distributed to attendees at the Memorial Service for donors in future years. We hope this will demonstrate that donors' generosity contributes to medical education beyond the acquisition of strictly anatomical knowledge.

## **Data Availability Statement**

It has not proved feasible to make the dataset available to other researchers due to issues of confidentiality.

## **RESULTS**

### **Knowing a Person and Dissecting an Organism**

We begin with an example of the theme of 'not knowing the donor', which appeared in 66 of 119 tributes:

"It has been an inexplicably surreal experience to spend so many hours in intimate association with a complete stranger, to know everything and yet nothing about her. We do not know what myriad of little traits came

together to form her own individual personality, what made her into the person you love and remember.” (15.25)

The first sentence of this quotation derives its rhetorical force from the pendular rhythm of antitheses, which dramatises the co-existence of two incommensurate potential contents of knowledge. The students know things about the donor that she herself probably never knew – perhaps even her cause of death – but know nothing of her personality, her personhood. This opposition regarding the content of knowledge of the donor (anatomical facts vs personality) points to a tension between two claims about what constitutes a human being as the object of knowledge: the biophysical organism or the biographical person. Importantly, this tribute does not suggest that the anatomical knowledge the students have gained is trivial or merely external; it is the result of an “intimate association”, no less inward than that of her family.

The tension between two versions of the human visible in this quotation corresponds to a structural tension between two epistemic modes which we will label ‘scientific’ and ‘personal’ knowledge. These two modes interrogate the object – the donor – at different levels and produce statements with different formal relations to her. The scientific mode is analytic, attempting to dissect the human as organism into its component parts (“the intricacies and minutiae of the human body”, as tribute 16.2 has it), whereas the personal mode is synthetic, pertaining to the wholeness of a “personality”. This structural divergence animates the second sentence of the quotation above. While admitting that they do not “know” the “myriad of little traits” which characterise the donor as person, the students are not



implying that the family knew the donor in this analytic way either, but rather as "personality" or "person". The sentence dramatises the difference between the students' analytic knowledge, which imagines the human as a collection of atomised facts, and the synthetic, emotional relation to a whole person they ascribe to her family. It is, after all, a person one loves, not a collection of traits.

A second aspect of the structural divergence between scientific and personal modes of knowledge emerges in another tribute:

“Isn’t it strange that you can know someone so intimately and yet not at all? For months, we have been dissecting and examining, trying our best to learn every aspect of you, but yet, after all this time, we still know nothing about you. All the people you once knew, and who knew you. All the places you had been to, and all the memories you once held. All of the things you achieved, and all the things that you hoped that you would” (16.13)

This quotation, taken from a tribute written in the form of a letter to the donor, displays an evident semantic and lexical homology with the quotation from tribute 15.25 above. This time, however, the epistemological contrast is given rhetorical force not by antithesis but by paradox. The apparent impossibility of “know[ing] someone so intimately and yet not at all” is semantically resolved only by a double sense of the verb “know”. The students, it is implied, have been learning that it is possible to know and yet not know someone, that knowledge comes in two forms which need not coexist. The same technique of paradox is employed in the second

sentence, which relies on a double sense of “you” corresponding to the double sense of “know”: the organism is known scientifically, and the individual is known personally. What constitutes the formal difference between scientific knowledge and personal knowledge? A hint comes in the juxtaposition between the second and third sentences: whereas personal knowledge is exchanged bidirectionally between two epistemological equals (“the people you once knew, and who knew you”), the students’ busy “dissecting and examining” neither seeks nor finds an answering effort of investigation on the part of the donor. In personal knowledge, either party can be subject or object of the verb ‘know’; the dynamic of scientific knowledge is one of strict, irreversible distinction between subject and object of knowledge as such, the knower and the known. When we look at a specimen under a microscope, it does not look back at us. The epistolary form of this tribute takes on particular significance in the light of this juxtaposition: its poignancy stems from the fact that not only will this letter never be answered, it will never be read or understood by its addressee.

### **Responses to the Epistemological Gap**

Many of the tributes, then, bear witness to a disjunction between scientific and personal knowledge. This tension figures in the tributes as a site of unease, as witnessed not only by explicit references to the “strange” or “surreal” nature of the disjunction between ways of knowing, but also by the attempt in some of the tributes to elide this disjunction by simulating a personal relationship with the donor:

“Your loved one meant a lot to us; they were an integral part of the team. Obviously this is not the conventional way of getting to know someone, and it took some getting used to, but we worked through it together.” (14.4)

It is left unstated here who is included in “we”; but it is implied that the donor too felt uncomfortable getting to know the students, and had to work through this discomfort with them. The rhetoric of this tribute thus queasily elides the donor’s absence *qua* person in order to simulate a bidirectional personal relationship.

“[W]e have strangely built a rapport with [him]...Throughout the year, we felt we were getting to know him better and better, and that perhaps we were getting closer to understanding what his life may have been like. The process somehow made us all feel like we were building a relationship with the individual, and that finally saying goodbye was an unexpectedly emotional event.” (16.12, emphasis added).

The underlined phrases here point to the heavy rhetorical lifting required to lay claim to bidirectional personal knowledge (and even understanding) of the donor.

Other tributes respond by attempting to bridge the epistemological gap between personal and scientific knowledge. This is accomplished by the claim that the distinctive value of dissection as a means of anatomical education lies precisely in the way in which it yokes these two dimensions of the human, placing knowledge of the organism in an inescapable relation to the biographical person:

“...your loved one allowed us to always ground our learning in the reason for it – the people it affects. She will always be our first connection to this whenever we treat patients.” (14.20)

“He taught us that anatomy is not about pictures in books, but about people and their lives.” (16.21)

Yet other tributes do not seek to bridge the gap between scientific and personal knowledge, but instead construct a third epistemic mode which we will label ‘ethical’ knowledge:

“Although we did not know him in life, we came to know him very well during our sessions, learning the idiosyncracies of his body – not an ideal, or an illustration, but a very human body...He was more than an example of anatomy; he was an example of selflessness...He taught us not only anatomy, but truly humbling lessons of generosity, altruism and bravery.” (14.46).

This quotation deploys the theme of ‘real anatomy, not illustrations’, typically used to claim that learning anatomy from dissection imparts superior understanding of the three-dimensional structure of the body. Here, however it is deployed in service of the claim that through dissection ethical (as well as anatomical) knowledge passes from donor to student. The nouns used to refer to the content of this knowledge

("selflessness", "generosity, altruism and bravery") name dimensions of the human invisible to the scientific gaze, yet also entirely abstract and impersonal: the donor as such is literally 'self-less'. All the students know about the donor's life is that he has chosen to give his body to complete strangers, for reasons unknown. Yet the act of donation itself makes the body meaningful: it becomes the bearer of a pure generosity, and thereby acts as a moral exemplar and educator.

### **Characterising Ethical Knowledge**

How is this ethical knowledge structured? An answer to this question begins to emerge in the deployment in tribute 14.46 (quoted above) of another theme, 'the donor as teacher'. When this theme appears in the tributes, it is typically given little more content than the claim that the donor acted as a superlative but ultimately passive learning resource:

"Although we never knew him, in the hours we spent with him, he became our greatest teacher. We have learned the anatomy of the human body in a way that is unparalleled within medicine. Throughout the year, we grew to value the opportunity of learning from a human example." (14.9)

In tribute 14.46, however, it is the donor's *action*, his choice to donate his body, which transmits knowledge. The dynamic of ethical knowledge is thus neither bidirectional exchange nor the observation of a passive object, but rather an active, generous pedagogy, a giving. Furthermore, this generosity breaches the

subject/object division intrinsic to scientific knowledge. The student's relationship to the donor as an "example of selflessness" is quite different from that to the donor as an "example of anatomy": in the latter phrase (as likewise in tribute 14.9 above), the term "example" can only take the sense of 'specimen' as a source of reified facts, whereas in the former it implies an 'exemplar' or 'paragon' for emulation. The same tribute comments elsewhere: "Throughout my medical career, I sincerely hope that I can come close to giving to others that same devotion and selflessness that he so kindly gifted to us" (14.46). In this sentence, the donor has given the students not (just) his body but also "devotion and selflessness". The abstract ethical knowledge transmitted by the donation has a transformative effect on the students, such that they aspire to *become like* the donor. Assertions of such an effect are found in numerous tributes, as the following examples attest: "The experience [of dissection] has given me motivation to succeed as 'one of his students' and emulate his selfless approach to life" (14.35); "...she was our role model of selfless sacrifice" (15.26); "His generosity exemplifies what we should all look up to and be in the future" (16.20).

Some of the tributes, then, make the claim that dissection is the site of active transmission of an ethical knowledge which transforms its recipient, as well as of passive observation of an anatomical knowledge which leaves the observing subject essentially untouched. This new ethical subjectivity is to guide the students' future medical practice:

"Not only will we be taking this anatomical knowledge with us, but also the memory that our very first patient was an extremely courageous and

selfless one. We will strive to achieve these same traits in our future work as medical professionals.” (14.42)

Importantly, this tribute makes a categorical distinction between the ethical abstracts (“courageous and selfless”) which can be read in the act of donation, and the personal traits of the donor, acknowledging elsewhere that “we cannot hope to know what he was like in life” (14.42). Courage and selflessness are imagined not as characteristics of the individual but as universals which transcend the individual as such, passed from donor to students through the act of donation. The deployment at this point of the theme of ‘the donor as first patient’ suggests that the donation is merely one link in a chain of such ethical transmissions, from doctor to patient and patient to doctor.

This figure of ongoing transmission in tribute 14.42 acts as an implicit answer to a question which troubles many of the tributes: how to repay the gift of a person’s body? An actual transactional exchange appears impossible, not only in the unavailability of any commensurate act or object but also in the absence of any recipient. Many tributes respond to this impasse by expressing a sense of inadequacy: “We can only offer you our thanks, which seem insufficient in light of your generosity” (15.4). Some, however, suggest instead that the appropriate response to such a gift is not to pay it back but to pay it forward, passing on its benefit to future patients: “Though we will never be able to thank him personally, we hope that we shall be able to carry on his legacy and pay forward his sacrifice, as we strive to become better doctors” (15.18). In some cases, this repayment is envisaged as an equivalence of one kind deed for another, a transmission of *actions*:

“Like he gave to us, we aspire to give back to the ones we treat” (16.20). In other cases, though, the repayment consists in the attempt to transmit the ethical *qualities* modelled by the donor:

“[W]e...have gained a profound appreciation for the importance of generosity and courage. We cannot thank you and him enough but will honour him in extending his demonstration of this to our future patients.” (14.27)

Here, as in tributes 14.42 and 14.46, the experience of dissection is described as one of ethical transformation which finds its appropriate correlate in the attempt to instantiate universal qualities of “generosity and courage” in future medical practice. To pay the donation forward is to honour its transformative force – to become more like the donor, envisaged as the pedagogue of an abstract generosity.

Tribute 14.27 also suggests that the ethical mode of knowledge is neither synthetic nor analytic, but rather symbolic. The donor is interrogated neither for who he is globally, nor for the minutiae into which the scientific gaze can reduce him, but for what he represents: he provides a “demonstration” of ethical universals visible in but not circumscribed by the conduct of any individual. Another tribute comments: “[T]his remarkable donation helped us to see the extraordinary generosity of people” (16.27). The act of donation is here read not for what it can tell us about the donor’s personality, the generosity of *this* person, but for the abstract, universal “generosity of people”. A similar structure organises the epistemology of the following quotation:



“Her gift revealed to us not only the anatomical complexities of the human body, but the genius of life and what it is to be living...The wisdom she has bestowed will resonate through us to the many thousands of patients we will encounter, who will thus also be indebted to her.” (16.19)

The somewhat overheated rhetoric of this tribute implies that the act of donation has “revealed” a transcendent dimension of knowledge, a “wisdom...resonat[ing] through” the students and forging trans-individual networks of debt and gratitude between donor, doctor and future patients. In a similar vein, another tribute proposes that donation may create a profound yet impersonal relationship between the students and the donor’s family: “Whilst we too will never know each other, perhaps this single act of utmost generosity will connect us in some way” (14.2).

For some students, then, dissection transmits not just scientific but also ethical knowledge. The ethical epistemic mode is structured as an active pedagogy which moulds students to become more like the donor, viewed as the symbolic bearer of ethical universals which transcend any one individual, and impels them to demonstrate the same qualities in their future professional practice. Typically the structure of this epistemic mode is implicit, embedded in statements which attempt to convey to the donor’s family the value of the gift the students have received. Occasionally, however, a tribute steps back to engage in explicit reflection on the epistemological transformation wrought by the experience of dissection. The

following quotation represents perhaps the closest the tributes come to abstract epistemology:

“You gave us an appreciation of the humanity of medicine, how thought can and should be given at every stage in life and how understanding can transcend the constraints of biology. You gave us an appreciation of the lengths some will go for perfect strangers beyond that of simple circumstance. As such, you have made us realise something that should be inherent to man: the gift of giving.” (16.34)

## **DISCUSSION**

### **Constructing Medical Knowledge, Constituting Medical Subjects**

The theme of ‘not knowing the donor’ in the tributes is the occasion for reflections with complex epistemological implications. Many of the tributes bear witness to the unease occasioned by the disjunction between two modes of knowledge which we have labelled ‘personal’ and ‘scientific’. The former operates as a bidirectional exchange between epistemological equals, and synthetically approaches the person at the level of its indivisible wholeness. The latter, which we might approximately identify with the ‘medical gaze’ analysed by Foucault,<sup>25</sup> relies on an irreversible distinction between knowing subject and known object, and analytically interrogates the organism at the level of its organs, tissues and cells. Some tributes attempt to avoid such unease by eliding this disjunction; others suggest that dissection is

pedagogically valuable precisely because it makes the student intensely aware of the coexistence of these two domains within the human, in a way that no textbook could replicate, and thereby gives scientific knowledge meaning and direction. Yet others reflect on the significance of donation as such to elaborate a third, ethical mode of knowledge. Such knowledge is structured as an active, transformative pedagogy, breaching the subject/object boundary to mould the student in the donor's image, and attempts to convey abstract universals of which the individual can merely be the symbolic representation. If successful, this transformation will create trans-individual networks under the sign of an impersonal generosity, the lodestar of the students' future medical practice.

The tension between personal and scientific epistemic modes in the tributes seems likely to reflect the transitional position of medical students as they are interpellated into a new subjectivity and inserted into a new regime of knowledge.<sup>32</sup> Dissection acts as a training in epistemology, the constitution of a new epistemic subject. In the dissection room, the student is not only learning the attachments of *biceps brachii*, nor even how to control their emotions, but also how to regard human beings with the analytic gaze of science.

Though scientific and personal modes of knowledge rub shoulders in some tributes, the centrality of the theme of 'not knowing the donor' to these reflections bears witness to the sharp distinction between them. The rhetorical figures of antithesis and paradox which organise the appearances of this theme, the assertions of knowing "nothing" about the donor, the very awkwardness of the attempts to elide the gulf between the way the students and the families know them: all this suggests that these epistemic modes confront each other as radical opposites within

the overall ecology of knowledge in the tributes. Even if the two modes can be secondarily yoked together, such that scientific knowledge is placed in the service of care of the person, they remain fundamentally distinct at the structural level; nothing in the tributes suggests that they might be related to each other as poles of a continuum rather than discontinuous categories.

Dissection thus not only defines a scientific mode of knowledge, but works to foreclose any possibility of overlap between scientific and personal modes. The students learn that knowing someone as an organism is structurally quite different from knowing them as a person, that the forms of statement available to a doctor are radically distinct from those available to a layperson. This message is powerfully conveyed by the withholding of all biographical information about the donor save what is potentially relevant to anatomical investigation. In this regard, dissection constitutes the medical professional as a subject who *cannot* relate personally to the objects of her knowledge, by the very epistemic structure which defines her as a medical subject. The encounter with the donor does not simply act as an emotionally challenging experience through which students learn to regulate and suppress their feelings: it constructs a relation in which emotion is foreclosed. A personal relation entails bidirectional exchange of knowledge and affect between (potential) epistemic equals; the scientific relation elaborated in the dissection room is one of epistemological mastery, in which the subject of the medical gaze analytically disassembles its object into component parts but is not itself subject to affect.

While the irreversibility of subject and object of scientific knowledge leaves the subject essentially unchanged by its investigation, the ethical subject visible in some tributes explicitly narrates itself as transformed or even constituted by the

experience of dissection. Rather than a relation of mastery, the ethical subject is imagined as the donor's student; but beyond this relation of seniority, the more fundamental relationship is one of equality on the basis of shared abstract qualities held to pertain to the human as such. It is these shared qualities which underwrite the reciprocal exchanges imagined between donor, doctor and patients: the donor may be the teacher, but if the lesson succeeds, the student will herself become like the donor (and perhaps one day pass the lesson on to others). Scientific knowledge as it appears in the tributes is a relation of mastery subtended by essential, irreversible difference between subject and object; ethical knowledge is a relation of transformation subtended by essential similarity.

### **Pedagogy and Practice**

What is the significance of these findings for the future professional practice of medical students who learn anatomy by dissection? Insofar as social practice emerges from and is structured by discourse, it seems plausible that the regime of pure scientific knowledge may reproduce itself in clinical practice, resulting in a relationship between doctor and patient of impersonal technical rationality. Those patients who accept this status may be considered 'good patients', whereas those who resist it by insisting on their irreducibility to an organism or presenting with 'social' problems may be labelled 'bad patients', with evident implications for delivery of care.<sup>33</sup> At its most extreme, this epistemic relation might contribute to the experiences of dehumanisation and reification to which patients are sometimes subjected.<sup>12</sup> Conversely, we might expect that those tributes embodying a relation between student and donor which is structured as a profound exchange between

two human beings may correspond to more humane clinical practice, with the doctor-patient relationship structured as an interaction of equals on the basis of shared humanity.<sup>34</sup>

If the strategic divergence between scientific and ethical epistemic modes in the tributes may perhaps represent one root of the divergence between technical and humanistic models of medical professionalism, the epistemological work which takes place in the dissection room emerges as a profoundly important – if hitherto somewhat neglected – terrain for investigation and pedagogical regulation. Medical schools have long engaged in the explicit teaching of ‘professionalism’, encompassing behaviours, identities and attitudes; but in [deleted] at least, such teaching is delivered only in the clinical part of the course. Our analysis of the tributes suggests that in fact such professional education is already taking place from the very beginning of a medical degree, in an implicit and subconscious fashion as part of the ‘hidden curriculum’. We might even question whether teaching of professionalism and communication skills during the clinical part of a medical degree is in effect attempting to unpick epistemological structures and identities learnt in the earlier, preclinical part of the course. Conversely, medical students at universities which have moved away from traditional dissection as a method of teaching anatomy may construct substantively different medical subjectivities in response to their different experiences. Our dataset does not permit us to determine to what extent the epistemic modes visible in the tributes are elaborated by students individually in response to their experiences in the dissection room, and to what extent they are transmitted by the circulation of formal or informal social discourses. However, we would suggest that more attention to the epistemology of

dissection is warranted, both in the academic literature and in pedagogical practice. If a doctor is (at least in part) a subject of medical knowledge, we must ask what kinds of knowing are desirable, and to what ends.

The implications of our analysis for anatomical education are broad. While previous studies highlighting the use of problematic emotional regulation strategies such as the 'cadaver story' have been addressed by modern constructs of 'professionalism', there has been little formal attempt to regulate the modes of knowledge developed in the dissection room.<sup>19, 21</sup> The tributes bear witness to the power of cadaveric dissection to institute profoundly reflective and ethical ways of relating to donors, but also to the risk that more distancing and ultimately dehumanising forms of relation may emerge. Although our pre-clinical dataset does not allow us to trace how the modes of knowledge established in the dissection room impact on later clinical practice, we may speculate that the relation to the 'first patient' is likely to be a formative one, and hence of critical importance for exploration and regulation. Encouraging students to interrogate the new forms of knowledge and relation they are developing, the lenses they deploy to examine their donors, may eventually promote reflective practice and a clinical ethics which goes beyond simple 'professionalism'.

Ultimately, we would recommend that both scientific and ethical modes of knowledge are of value in clinical practice, and that the doctor must be able to adopt both technical and humanistic stances depending on the requirements of the moment. There will be times when doctors will need to view patients primarily as bodies with problems which require solutions, and other times when they are to be respected profoundly yet impersonally as the bearers of an abstract humanity.

Modern medicine requires of course that all doctors be able to regard their patients with the analytic eye of science; but if this is the only lens available, the clinical encounter will be impoverished indeed. Perhaps, then, medical education should incorporate explicit epistemological reflection on each component of the curriculum, with the aim of producing doctors capable of knowing their patients diversely and generously.



## BIBLIOGRAPHY

- Arráez-Aybar, Luis-Alfonso, Gloria Castaño-Collado, and Maria-Isabel Casado-Morales. "Dissection as a modulator of emotional attitudes and reactions of future health professionals." *Medical Education* 42, no. 6 (2008), 563-71.
- Bertman, Sandra L., and S.C. Marks. "Humanities in medical education: rationale and resources for the dissection laboratory." *Medical Education* 19, no. 5 (1985), 374-81.
- Coulehan, John L., Peter C. Williams, David Landis, and Curtis Naser. "The first patient: reflections and stories about the anatomy cadaver." *Teaching and Learning in Medicine* 7, no. 1 (1995), 61-66.
- Dickinson, George E., Carol J. Lancaster, Idee C. Winfield, Eleanor F. Reece, and Christopher A. Colthorpe. "Detached concern and death anxiety of first-year medical students: before and after the gross anatomy course." *Clinical Anatomy* 10, no. 3 (1997), 201-07.
- Dinsmore, Charles E., Steven Daugherty, and Howard J. Zeitz. "Student responses to the gross anatomy laboratory in a medical curriculum." *Clinical Anatomy* 14, no. 3 (2001), 231-36.
- Druce, Maralyn, and Martin H. Johnson. "Human dissection and attitudes of preclinical students to death and bereavement." *Clinical Anatomy* 7, no. 1 (1994), 42-49.
- Dyer, George S.M., and Mary E.L. Thorndike. "*Quidne mortui vivos docent?* The evolving purpose of human dissection in medical education." *Academic Medicine* 75, no. 10 (2000), 969-79.

- Estai, Mohamed, and Stuart Bunt. "Best teaching practices in anatomy education: a critical review." *Annals of Anatomy* 208 (2016), 151-57.
- Evans, Darrell J.R., Wojciech Pawlina and Nirusha Lachman. "Human skills for human[istic] anatomy: An emphasis on nontraditional discipline-independent skills." *Anatomical Sciences Education* 11, no. 3 (2018), 221-24.
- Foucault, Michel. *The Archaeology of Knowledge*. Translated by A.M. Sheridan Smith. London: Tavistock, 1972.
- Foucault, Michel. *The Birth of the Clinic: An Archaeology of Medical Perception*. Translated by A.M. Sheridan Smith. London: Tavistock, 1976.
- Foucault, Michel. "Truth and power." In *Power: Essential Works of Foucault 1954-1983, Volume 3*, edited by James D. Faubion, 111-33. London: Penguin, 2001.
- Gunderman, Richard, and Philip Wilson. "Exploring the human interior: the roles of cadaver dissection and radiologic imaging in teaching anatomy." *Academic Medicine* 80, no. 8 (2005), 745-49.
- Gustavson, Norman. "The effect of human dissection on first-year students and implications for the doctor-patient relationship." *Journal of Medical Education* 63, no. 1 (1988), 62-64.
- Hafferty, Frederic W. "Cadaver stories and the emotional socialization of medical students." *Journal of Health and Social Behavior* 29, no. 4 (1988), 344-56.
- Hafferty, Frederic W., and Gabrielle Finn. "The hidden curriculum and anatomy education." In *Teaching Anatomy: A Practical Guide*, edited by Lap Ki Chan and Wojciech Pawlina, 339-49. Cham: Springer, 2015.

- Hafferty, Frederic W., and Ronald Franks. "The hidden curriculum, ethics teaching, and the structure of medical education." *Academic Medicine* 69, no. 11 (1994), 861-71.
- Hochschild, Arlie Russell. *The Managed Heart: Commercialization of Human Feeling*. Berkeley: University of California Press, 1983.
- Jaye, Chrystal, Tony Egan, and Sarah Parker. "'Do as I say, not as I do': medical education and Foucault's normalizing technologies of the self." *Anthropology and Medicine* 13, no. 2 (2006), 141-55.
- Jørgensen, Marianne, and Louise J. Phillips. *Discourse Analysis as Theory and Method*. London: SAGE Publications, 2002.
- Lempp, Heidi K. "Perceptions of dissection by students in one medical school: beyond learning about anatomy. A qualitative study." *Medical Education* 39, no. 3 (2005), 318-25.
- Lief, Harold I., and Renée C Fox. "Training for 'detached concern' in medical students." In *The Psychological Basis of Medical Practice*, edited by Harold I. Lief, Victor F. Lief, and Nina R. Lief, 12-35. London: Harper & Row, 1963.
- Madill, Anna, and Gary Latchford. "Identity change and the human dissection experience over the first year of medical training." *Social Science and Medicine* 60, no. 7 (2005), 1637-47.
- Nnodim, J.O. "Preclinical student reactions to dissection, death and dying." *Clinical Anatomy* 9, no. 3 (1996), 175-82.
- Pearson, William G., and Todd M. Hoagland. "Measuring change in professionalism attitudes during the gross anatomy course." *Anatomical Sciences Education* 3, no. 1 (2009), 12-16.

- Quince, Thelma A., Stephen I.G. Barclay, Michelle Spear, Richard A. Parker, and Diana F. Wood. "Student attitudes toward cadaveric dissection at a UK medical school." *Anatomical Sciences Education* 4, no. 4 (2011), 200-07.
- Rizzolo, Lawrence J. "Human dissection: an approach to interweaving the traditional and humanistic goals of medical education." *Anatomical Record* 269, no. 6 (2002), 242-48.
- Segal, Daniel A. "A patient so dead: American medical students and their cadavers." *Anthropological Quarterly* 61, no. 1 (1988), 17-25.
- Smith, Allen C., and Sherryl Kleinman. "Managing emotions in medical school: students' contacts with the living and the dead." *Social Psychology Quarterly* 52, no. 1 (1989), 56-69.
- Sointu, Eeva. "'Good' patient/'bad' patient: clinical learning and the entrenching of inequality." *Sociology of Health and Illness* 39, no. 1 (2017), 63-77.
- Warner, John Harley, and Lawrence J. Rizzolo. "Anatomical instruction and training for professionalism from the 19<sup>th</sup> to the 21<sup>st</sup> centuries." *Clinical Anatomy* 19, no. 5 (2006), 403-14.
- Wong, Anne, and Karen Trollope-Kumar. "Reflections: an inquiry into medical students' professional identity formation." *Medical Education* 48, no. 5 (2014), 489-501.

---

## REFERENCES

<sup>1</sup> George S.M. Dyer and Mary E.L. Thorndike, "Quidne mortui vivos docent? The evolving purpose of human dissection in medical education," *Academic Medicine* 75, no. 10 (2000): 969-79.

<sup>2</sup> Mohamed Estai and Stuart Bunt, "Best teaching practices in anatomy education: a critical review," *Annals of Anatomy* 208 (2016): 151-57.

<sup>3</sup> John L. Coulehan *et al.*, "The first patient: reflections and stories about the anatomy cadaver," *Teaching and Learning in Medicine* 7, no. 1 (1995): 61-66.

<sup>4</sup> Heidi K. Lempp, "Perceptions of dissection by students in one medical school: beyond learning about anatomy. A qualitative study," *Medical Education* 39, no. 3 (2005): 318-25.

<sup>5</sup> Anna Madill and Gary Latchford, "Identity change and the human dissection experience over the first year of medical training," *Social Science and Medicine* 60, no. 7 (2005): 1637-47.

<sup>6</sup> Frederic W. Hafferty and Ronald Franks, "The hidden curriculum, ethics teaching, and the structure of medical education," *Academic Medicine* 69, no. 11 (1994): 861-71.

<sup>7</sup> Chrystal Jaye, Tony Egan, and Sarah Parker, "'Do as I say, not as I do': medical education and Foucault's normalizing technologies of the self," *Anthropology and Medicine* 13, no. 2 (2006): 141-55.

<sup>8</sup> Richard Gunderman and Philip Wilson, "Exploring the human interior: the roles of cadaver dissection and radiologic imaging in teaching anatomy," *Academic Medicine* 80, no. 8 (2005): 745-49.

- 
- <sup>9</sup> Luis-Alfonso Arráez-Aybar *et al.*, "Dissection as a modulator of emotional attitudes and reactions of future health professionals," *Medical Education* 42, no. 6 (2008): 563-71.
- <sup>10</sup> Charles E. Dinsmore, Steven Daugherty, and Howard J. Zeitz, "Student responses to the gross anatomy laboratory in a medical curriculum," *Clinical Anatomy* 14, no. 3 (2001): 231-36.
- <sup>11</sup> J.O. Nnodim, "Preclinical student reactions to dissection, death and dying," *Clinical Anatomy* 9, no. 3 (1996): 175-82.
- <sup>12</sup> Sandra L. Bertman and S.C. Marks, "Humanities in medical education: rationale and resources for the dissection laboratory," *Medical Education* 19, no. 5 (1985): 374-81.
- <sup>13</sup> George E. Dickinson *et al.*, "Detached concern and death anxiety of first-year medical students: before and after the gross anatomy course," *Clinical Anatomy* 10, no. 3 (1997): 201-07.
- <sup>14</sup> Maralyn Druce and Martin H. Johnson, "Human dissection and attitudes of preclinical students to death and bereavement," *Clinical Anatomy* 7, no. 1 (1994): 42-49.
- <sup>15</sup> Harold I. Lief and Renée C. Fox, "Training for 'detached concern' in medical students," in *The Psychological Basis of Medical Practice*, ed. Harold I. Lief, Victor F. Lief, and Nina R. Lief (London: Harper & Row, 1963), 12-35.
- <sup>16</sup> Thelma A. Quince *et al.*, "Student attitudes toward cadaveric dissection at a UK medical school," *Anatomical Sciences Education* 4, no. 4 (2011): 200-07.
- <sup>17</sup> Norman Gustavson, "The effect of human dissection on first-year students and implications for the doctor-patient relationship," *Journal of Medical Education* 63, no. 1 (1988): 62-64.

---

<sup>18</sup> Daniel A. Segal, "A patient so dead: American medical students and their cadavers," *Anthropological Quarterly* 61, no. 1 (1988): 17-25.

<sup>19</sup> Frederic W. Hafferty, "Cadaver stories and the emotional socialization of medical students," *Journal of Health and Social Behavior* 29, no. 4 (1988): 344-56.

<sup>20</sup> Frederic W. Hafferty and Gabrielle M. Finn, "The Hidden Curriculum and Anatomy Education," in *Teaching Anatomy: A Practical Guide*, ed. Lap Ki Chan and Wojciech Pawlina (Cham: Springer, 2015), 339-49.

<sup>21</sup> John Harley Warner and Lawrence J. Rizzolo, "Anatomical instruction and training for professionalism from the 19<sup>th</sup> to the 21<sup>st</sup> centuries," *Clinical Anatomy* 19, no. 5 (2006): 403-14.

<sup>22</sup> William G. Pearson and Todd M. Hoagland, "Measuring change in professionalism attitudes during the gross anatomy course," *Anatomical Sciences Education* 3, no. 1 (2009): 12-16.

<sup>23</sup> Darrell J.R. Evans, Wojciech Pawlina and Nirusha Lachman, "Human skills for human[istic] anatomy: An emphasis on nontraditional discipline-independent skills," *Anatomical Sciences Education* 11, no. 3 (2018): 221-24.

<sup>24</sup> Arlie Russell Hochschild, *The Managed Heart: Commercialization of Human Feeling* (Berkeley: University of California Press, 1983).

<sup>25</sup> Michel Foucault, *The Birth of the Clinic: An Archaeology of Medical Perception*, trans. A.M. Sheridan Smith (London: Tavistock, 1976).

<sup>26</sup> Michel Foucault, "Truth and power," in *Power: Essential Works of Foucault 1954-1983, Volume 3*, ed. James D. Faubion (London: Penguin, 2001), 132.

---

<sup>27</sup> Segal, "A patient so dead", 18.

<sup>28</sup> Segal, "A patient so dead", 17.

<sup>29</sup> Allen C. Smith and Sherryl Kleinman, "Managing emotions in medical school: students' contacts with the living and the dead," *Social Psychology Quarterly* 52, no. 1 (1989): 61.

<sup>30</sup> Marianne Jørgensen and Louise J. Phillips, *Discourse Analysis as Theory and Method* (London: SAGE Publications, 2002).

<sup>31</sup> Michel Foucault, *The Archaeology of Knowledge*, trans. A.M. Sheridan Smith (London: Tavistock, 1972), 30-31.

<sup>32</sup> Anne Wong and Karen Trollope-Kumar, "Reflections: an inquiry into medical students' professional identity formation," *Medical Education* 48, no. 5 (2014): 489-501.

<sup>33</sup> Eeva Sointu, "'Good' patient/'bad' patient: clinical learning and the entrenching of inequality," *Sociology of Health and Illness* 39, no. 1 (2017): 63-77.

<sup>34</sup> Lawrence J. Rizzolo, "Human dissection: an approach to interweaving the traditional and humanistic goals of medical education," *Anatomical Record* 269, no. 6 (2002): 242-48.