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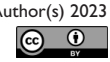
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# The Social Production of the Dead Human Body in the Practice of Teaching Anatomy Through Cadaveric Dissection

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## Abstract

The aim of this study is to explore how the dead human body is socially produced through the practices of those involved in teaching anatomy through cadaveric dissection. The perspectives of anatomists learning to teach offer a novel perspective on the existing literature. The study draws on data from interviews with students and teaching staff involved in practical cadaveric dissection during a UK postgraduate anatomy education programme. Interviews addressed participants' experiences, reflections, and emotional responses during practical dissection of donor bodies. Findings address five areas: anticipation and the 'imagined body', ontology and the latent human, detachment, dissociation, and reconciliation, preparation and intentionality, and gratitude and immortalisation. The findings suggest that during the course of practical dissection sessions, anatomists learn to normalise the transgressive activity of human dissection via processes of reconciliation. The transgressive elements are resolved through the agency of the person once living and through a configuration of the anatomist and the donor body in a network of scientific knowledge, pedagogic practice and personal influence.

## Keywords

cadaveric dissection, detached concern, donor body, pedagogy, qualitative interviews, reconciliation

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## Introduction

Anatomy dissection rooms are back spaces (Goffman, 1967: 59), within which transgressive and otherwise illegal activities are undertaken by those licenced by their credentials as students, teachers, or researchers. They are spaces for investigation and science, 'enhanced environments' (Prentice, 2013) in which objects are detached from their natural order. Anatomy rooms are often located in less-frequented regions of a university, protected from unentitled visitors by added layers of security.

As one pushes through the heavy wooden doors into the dissection room at the institution where this research was conducted, this sense of an 'enhanced' backspace is exacerbated by its low ambient temperature, the stench of embalming fluids, a main room with vaulted glass-tiled ceiling flanked by bays housing special anatomical collections. Notices requiring respect for human remains alternate with dark humour referencing 'skeletons in the cupboard'. Always there is the presence of the dead – covered over when not being dissected or demonstrated, but retaining an unmistakable and disconcerting shape beneath their plastic sheeting. When the covers are removed, the donor cadavers – now hairless, greyed, and plumped by the embalming process – at first glance look disturbingly similar. They are indeed anonymous: labelled only by age and certified cause of death.

The aim of this study is to explore how the dead human body is socially produced through the practices of those involved in teaching anatomy through cadaveric dissection. The perspectives of anatomists who are directly involved in teaching is an important contribution to the existing literature. The structure of the article is straightforward. The next section reviews the social science literature addressing anatomical dissection, then outlines the methods and describes the respondents and the physical setting; this is followed by analysis of the interviews. The article concludes with comments on the significance of the findings.

## The sociology of dissection

The practice of cadaveric dissection in the teaching of anatomy does not exist in a vacuum, and the starting point for our exploration is the social and historical background of anatomical dissection. The literature illustrates how anatomical dissection is produced and reproduced through scientific knowledge, law, politics, ethics, and the personal experience of death and of our own bodies.

Anatomical dissection has a long and chequered history as a tool for medical professionals to gain understanding of the human body. In the post-Enlightenment era, dissection provided the impetus for modern evidence-based medicine (Parker, 2002: 910), and practical dissection has been a part of medical training for both undergraduates and for those preparing for surgical professional examinations. More recently however, practical dissection has become less prominent within the undergraduate medical curriculum.

The procurement and handling of bodies for anatomical dissection has been surrounded by controversy, and the practice of anatomy is neither politically nor socially neutral (Hildebrandt, 2009a, 2009b, 2009c; Richardson, 2000; Sappol, 2002) In the UK, professional anatomists performed public dissection on the corpses of vagrants and

criminals well into the early 19th century. Burke and Hare in Edinburgh committed 16 murders to sell cadavers to anatomists and medical students (McLeod, 2015). The Anatomy Act, designed to prohibit the sale of dead bodies, was signed in 1831, but did little at the time to appease the sense of fear and revulsion around anatomical dissection, effectively rendering it a punishment for poverty (Richardson, 2000).

Modern anatomy in the West has been transformed from this dubious legacy, though in the contemporary period, it has not been without controversy. When large-scale organ retention following children's post-mortems at Alder Hey hospital in Liverpool and other hospitals was uncovered during a General Medical Council enquiry, misplaced medical paternalism and clinical detachment bordering on arrogance was portrayed in the media as a modern day 'return of the body snatchers' (Hall and Lillyman, 2001). The subsequent 2004 Human Tissue Act strengthened informed consent by donors, and licenced control of the use and disposal of human remains. One outcome of this transformation is a more humane approach to human remains in teaching settings (Štrkalj, 2016). For example, at the institution hosting this research, attendance at a yearly 'service of thanksgiving' is compulsory for anatomy staff and students, as a means to connect with donors' families and the wider community (Jones, 2016; Štrkalj, 2016).

The tensions surrounding the use of human remains for teaching and research have been variously explored by social scientists. Liff and Fox (1963) described the 'detached concern' that enables medical students to dissect the dead human body and later perform as medical practitioners without becoming emotionally involved. For Fox, 'detached concern' operates as a coping mechanism and a process of confronting critical problems of meaning about life and death which are integral to medicine (Fox, 1999: 410).

Building on the work of Fox, Hafferty (1991) refers to the concept of 'detached concern' as one that reflects the tensions and ambiguities around the dead body. More recently, however, there is recognition for a much more nuanced process at play in apparent detachment (Fountain 2014; Hallam, 2017; Olejaz, 2017; Prentice, 2013. Fountain argues that students distance themselves through *process* and not from the object of that process. In what he refers to as 'focused distance' students are absorbed in the process and intricacies of dissection, with the donor body becoming 'all science' (2014: 157).

Hafferty suggests that whether medical students view a donor body as a formerly living human or as an impersonal object is not a simple dichotomy, and that the cadaver is 'an ever-changing collage of attributes and configurations which are often in conflict and mired in ambiguity' (Hafferty, 1991: 97). He argues further that the donor is a human referent: 'something like me' as well as 'an object', something 'alien, strange, not-me' (Hafferty, 1991: 101). It is this ambiguity in conceptualising the donor, as something like an object, as well as like a human, that manifests some of the most challenging ethical and conceptual issues and which are reflected in more contemporary anthropological and sociological work.

The anthropological literature provides compelling insights into the ambiguity of anatomical donor bodies. In her ethnographic exploration of bodies in anatomical labs in Denmark, Olejaz (2017) describes how anatomical donors occupy a liminal space and hover in cultural and social limbo where they are not of the world of the living, but nor

are they subject to the usual rites and social practices associated with the dead. These collapsing distinctions are captured biographically in Montross' (2007) account of her relationship with a donor cadaver named Eve, during her first year of medical training. Montross vividly describes the shifting and evasive humanity of donor bodies and how the body is in some ways identifiable as a 'human being' but in others, this is 'barely perceptible' (Montross, 2007: 24). The donor body therefore is both recognisable as a dead body but is also prepared as a pedagogical resource while simultaneously retaining qualities of personhood. Personhood is, therefore, latent and an indicator of the person's former life and relationships which invoke compassion for and connection with body donors as the people they once were (Olejaz, 2017)

Certain physical parts of a donor body, such as the face, the neck, and perineal area, may be powerful 'human referents' (Hafferty, 1991). There may also be evidence of personal histories inscribed upon bodies such as in scars, tattoos or nail polish (Olejaz, 2017; Prentice, 2013). In her ethnographic study of anatomy practice in the US, Prentice (2013) suggests that students develop the ability to 'objectify the body', on one hand, and 'call forth the person', on the other. This alternation, she argues (Prentice, 2013: 35), is tactical, enabling the relationship between body and person to move in and out of focus. However, she noted (Prentice, 2013: 33) how some humanising detail of a donor's body such as ear-hair or a tattoo can establish what she describes as 'emergence of personhood' (Prentice, 2013: 43), making dissection challenging. Prentice's contention is that through this process medical education strengthens students' abilities to engage in an 'ontological choreography', by teaching a process of objectifying bodies and activating persons, as needed (Prentice, 2013: 38). Constructing the body as an object and objectification does not, therefore, have to be problematic. As Prentice argues, practitioners and patients may regularly separate body parts to make treatment possible (Prentice, 2013: 17–18).

Prentice uses the concept of 'ontological choreography' to describe the practices of anatomists and how there is 'mutual articulation' between anatomists and the bodies of the dead (Prentice, 2013: 71). The concept was coined by Thompson (2005) in her study of artificial reproductive technology (ART) clinics. She describes the 'dynamic coordination' of different aspects of ART clinics, for example, legal requirements, gender assumptions, technological innovations, emotional challenges, and so on (Thompson, 2005: 8). Prentice's use of the concept suggests that anatomical dissection is an embodied practice, involving the interplay between the bodies of the living and the dead in the construction of knowledge. Anatomical dissection is not therefore a passive process (Fountain, 2014; Hallam, 2017). Essentially this dynamic relationship between bodies suggests that donor bodies have a materiality that is more than that of occasional flashes of observed personhood. Olejaz (2017: 126) applies the concept of 'postvital life' to refer to instances where human bodily material 'lives on after the person dies' affecting those engaging with it. From this perspective, the donor body has a more agentic quality: increasingly recognised in the sociological literature when exploring the power of non-human objects (Bennett, 2010; Braidotti, 2013; Fox and Powell, 2021). When we apply this framework to the dead body, we are freed from attempting to contextualise it as either subject or object. The dead body is attributed a property that is closer to agency. This is not simply because the dead have biographies as people once living, perhaps inscribed upon their bodies as tattoos or scars, but because of their essential materiality (Stepputat, 2016).

## Methods

This study utilised semi-structured interviews and a critical, interpretive approach in which the aim was to explore how the dead human body is socially produced through the practices of those involved in teaching anatomy through cadaveric dissection.

The study took place at a UK university where anatomy, through cadaveric dissection, is taught across a range of disciplines, including medicine, dentistry, archaeology, and biomedical sciences. Following the UK legal framework, this university accepts donor bodies for the purposes of education. All students are inducted into a code of conduct in the anatomy dissection room and into the principles of respect for the donors and their families. Induction includes how to look after bodies; for example, covering to help preserve them and not mixing human remains. All students and staff attend a yearly thanksgiving service held for the family and loved ones of those who have donated their bodies. Their names are read out as part of the service, but there is nothing that would link a specific body to a particular person.

### *Sampling*

Early-career anatomists and those with several years of experience of dissection, both staff and postgraduate anatomy students were approached to participate. The approach to recruitment was a purposive sample, appropriate to the method where the objective was to explore the perspectives of those with experience of teaching anatomy through cadaveric dissection. Participants were therefore experienced anatomists with a minimum of one year's experience of dissection from their undergraduate studies. Participants came from different institutions and from a range of backgrounds which included biomedical science, archaeology, forensic science, and medicine. Thirteen participants were recruited to the study. Nine were postgraduate students (out of a possible 12) and four were teaching staff. Students were studying anatomy with education, a course which involves teaching practice in anatomy where students are assessed at the level of Fellow of the Higher Education Academy. The sampling does, of course, raise ethical issues discussed below.

Sample size calculations are difficult in qualitative research and the concept of theoretical saturation is often used to justify the number of participants. This is usually defined as the point where no new data are found to develop a new category or theme (Glaser and Strauss, 1967). There are no claims in this article that participants represent the views of all equivalent staff/students, but the sample size has been sufficient to achieve a detailed conceptual analysis.

### *Recruitment*

Institutional ethical approval was obtained in March 2019 and students and staff were contacted by group student and individual email addresses with an attached participant information sheet. Interviews took place in individual offices, or in private teaching space. Participants signed a consent form, and all the interviews were audio-recorded

using an encrypted audio device and then uploaded onto a secure folder on the university server, transcribed then deleted. Interviews were approximately 30 minutes long.

### *Research ethics*

The research raised ethical issues relating particularly to maintaining confidentiality and informed consent. A primary ethical consideration was that because participants knew the lead researcher, they might find it difficult to refuse to take part. In an attempt to mitigate this, approaches to take part were through an email request for those interested in taking part to email the researcher. No direct, personal approach was made and the email approach was only made once.

A second ethical issue is that, while personal details are confidential and the interviews are anonymised, it is possible for participants to identify themselves and others from the data. This was made explicit in the information sheet. In the 'Findings' section, participants are given a pseudonym and are deliberately not identified (as either staff or student or by disciplinary background) because to do so would make some individuals identifiable. While this means that potentially useful contextual information is lacking the privacy of participants outweighs this consideration.

A final ethical issue is that the topic is intimately associated with death and this is, even for experienced anatomists, a sensitive subject. Participants were informed about the interview questions, and that the interview could be stopped at any point.

### *Analysis*

The research used a thematic approach to analyse the data. This approach is used to classify and organise data according to emergent themes (Ritchie and Spencer, 1994). While the approach is systematic, it also includes a strong interpretive focus. These processes are inductive and involve identifying commonalities in the interviews, in terms of what people said and how they said it. However, thematic analysis is not simply looking for agreement, and therefore, data where participants appeared to contradict each other are also included in the analysis below. In addition, the interview transcripts have not been viewed as true or false reports or literal accounts of an underlying reality. Rather they are, as Silverman describes, '*displays* of perspectives' [italics in the original] (Silverman, 1993: 107).

## Findings

The findings are presented in five sections: (1) Anticipation and the 'imagined body'; (2) Ontology and the latent human; (3) Detachment, dissociation and reconciliation; (4) Preparation and intentionality; and (5) Gratitude and immortalisation.

### *Anticipation and the 'imagined body'*

Participants recalled their first encounter with a donor body for dissection. It is important to acknowledge that participants are recounting their first encounters from memory and

from their experiences of the anatomy lab at different institutions. Amy recalled her first week of medical school:

> There was a bunch of eighteen-year olds, all very fresh-faced and there was a lot of just kind of, they exposed the body . . . obviously there's a couple of people that fainted, but I personally was ok.

According to staff, fainting is very rare. So Amy's account is of interest because it tells us about the sense of anticipation and drama in exposing the body. Lynn also describes how:

> I just remember the room full of like, just, you know when they are all lined up, lots of bodies lined up and just very aware that there were dead people in the room, and that they were people's relatives, and it was just, I don't know, a bit intimidating. And I think that when you see them, they don't look how you think they're going to look. They don't look very human, so I was a bit shocked by that.

This description captures detail including: the number of bodies; that they are dead; that they have relatives; that the bodies do not look human; and the shock of the first experience of the anatomy lab. This first experience was also mentioned by Sue:

> The weirdest thing for me . . . was more seeing the, seeing like the figures covered . . . and knowing that they were dead bodies . . . I actually much preferred it when I saw it and was able to like touch it because then it became, like, less of this thing in your head. . . . there was definitely a lot of anticipation because you walk in and there's the bodies with the blue sheets and I don't think anybody really knew what to expect

Here, the array of covered bodies added to the sense of anticipation, with what was imagined under those covers somehow being more disturbing. Seeing the body and being able to touch it helped to ameliorate Sue's anticipated dread.

Participants variously described how they felt during these first experiences of dissection; James, recounted that 'it felt like you were weaned into it a bit'. He describes how

> the students came in . . . and maybe had a look at one [a body]. 'We were offered like, do we want to go up and just touch it? or put gloves on and touch it or whatever and have a feel of what it was like? And the next session we would start to dissect.

Tony also remembered a process where they 'sort of acclimatise you to the atmosphere and to the room and things'.

By contrast, Kate commented:

> 'I don't think they really prepare you for it, I think they just kind of throw you in'. She also states that 'I think if you over prepare for it, you're gonna psych yourself up too much, so they kind of throw you in at the deep end and then they are very good at supporting you'.

Above we have an account of being 'acclimatised' to reduce anxiety, but in apparent contradiction, also an account of being 'thrown in' because to be over-prepared can result in anxiety.

The idea that there can be no preparation was also described by Tony: 'you can't actually be prepared for, you know, walk[ing] into a room which is tables of lined up dead bodies for the first time'. And similarly, by Alicia: 'I don't think I was really well prepared at all . . . but on the other hand I don't know what else could have been done to make me more prepared'. Therefore, these accounts reveal, not just differences in recollection of a process of induction, and induction processes may vary across different institutions, but more importantly, different notions of what being prepared means and whether it is possible.

Alicia provides further detail on why it's difficult to prepare for cadaveric dissection: "It's not like you're just seeing a dead body. It's the smell in the [dissecting room] as well, like how they feel . . . until you do it, you don't know and I think as well, you can't really predict your own emotional response".

There are a number of additional issues raised here; the environment is multi-sensory involving tactile and olfactory senses, as well as one's own emotional reaction. As Ruth stated:

> You can be as prepared as you like to look at a whole body and you might be fine for six weeks of dissection and then suddenly you come to something that freaks you out, like feet, and you can't cope with it and you have to step away. Well, us doing something in advance with you on the whole body is not gonna stop you being freaked out when you hear the bone saw, or when, you know, you open up a knee, you know the fluid comes out or when you have to do, you know, genitalia is often quite a complex one to deal with.

The unpredictability caused by social and personal issues may be an issue throughout dissection. This was mentioned by other participants, some of whom revealed the impact personal bereavement had had on them and the prospect of dissection even as experienced anatomists. Lynn described how: 'it's a massive thing if someone's lost somebody like a relative recently, or a friend'. Therefore, there are different facets of dissection: noise, smell, and the impact of life events. However, participants all detailed that there are certain body parts which are more evocative of personhood and are, therefore, more troubling than others and these are described in the next section.

## *Ontology and the latent human*

All participants identified certain aspects of the body as particularly human and aspects of the process that are more troubling during dissection. James described how the first thing he thought when he saw a donor body was: 'it doesn't look human'. This, he said, was seen to be the result of the embalming process: 'shaving all of the hair off and things like that'. He described how it is: 'like the life is gone from them' and that 'it's easier to dehumanise them in that form'. Eileen also describes how: 'the bodies are processed and because they shave their hair and stuff like that you do that step into dehumanising them to a certain extent'.

While the bodies are described as 'dehumanised' there were aspects that participants found to be 'human' during dissection. Commonly this was the face; the eyes; the brain

because, as Sue explained: 'that's like them in there .., all their memories, their emotions'. Genitalia was also mentioned because, as Sue stated: 'it's such an intimate thing'. Similarly, for Alicia, seeing the bodies naked made 'them a human, but in some ways it kind of dehumanises, the fact that there's no modesty'. It seems here that the brain and the genitalia are more human because of what they signify and not what they look like.

Tattoos were mentioned because 'that personalises them' (Sue). Sue also described how '[a] tattoo kind of convinced me to get a tattoo because I thought, it's really quite beautiful how you have this identity even after your death'. One of the donors for this cohort of students had an unfinished tattoo. Tony mentioned this and referred to it as 'one of those little moments'. Hands because, as James described, "the body changes with embalming, but the hands stay the same". In addition: 'a hand is a very personal thing, it's what you do everything with'. Eileen also felt that: 'the last thing you ever do, when somebody's leaving this world, if you're lucky and they're lucky, is sit and hold their hand'.

These signals of personhood, a life lived, intimacy, as in genitalia and holding hands, are deeply personal and evoke compassion and resonate deeply with participants. Kevin, however, adds a different perspective. He disliked eyes because: "the idea of anything going near my eyes makes me kind of wince . . . Erm, doing that with a cadaver it's not necessarily reminds me that it's human, it reminds me of that eye operation that I don't want to have".

This particularly embodied encounter with the dead body appears unlike other descriptions of aspects of the personal life intruding into dissection; this is a projection of Kevin's discomfort onto the donor.

## *Detachment, dissociation, and reconciliation*

To ask participants if they felt 'detachment' would assume that detachment existed as a phenomenon. Therefore, participants were asked whether and how their approach to donor bodies had changed over time. Kevin describes how, when he first started anatomy: 'everyone's kind of doesn't really know if they're allowed to make jokes or whatever'. He goes on: 'It's amazing how quickly you kind of forget that and everybody starts, not making jokes . . ., but the mood is a lot lighter after eight weeks'.

This does not have to be viewed necessarily as an example of 'detachment' but rather as a description of a process of 'normalising'. However, having deliberately avoided the term detachment, participants did use it unprompted. Amy described how: 'you just have to always detach yourself a little'. Other associated terms were also used. Sue described how: 'I was actually surprised at how easy it was; kind of creeped me out a bit that I was capable of, of you know, dissociating myself so much'.

Sue uses the term 'dissociating' to describe how she 'normalised' the process of dissection. She states not only how easy it was but also how this raised moral ambiguity. Tony similarly describes how "it sounds quite bad really but, I don't, in a way, you do stop looking at it as a cadaver, . . . so yeah that's just the learning resource that's there for me, I might as well make the most out of it".

Here the body becomes a machine, with pieces that fit together and the concept of a 'learning resource' is significant. However, again, this normalising process is morally ambiguous for our participants and this was explored further with Alicia when she explained how:

> That kind of shocked me, was how quickly it just became quite normal, just like any other lab, each week. And they told us that at the start, they said it will become normal quite quickly and we're like surely not! This is insane. Like, it's never gonna get normal. And then it did, which I think, is more shocking than anything else really.
>
> Q Why do you think it's shocking?
>
> Because I don't want it to be normal . . . I don't think you should feel like oh it's just another lab, when you're getting this, been able to do this amazing thing . . . I do have to sometimes just take a moment and think you need to really appreciate what you're doing here, because it is amazing.

Sue used the term dissociation. She described how, as she dissected, the body became 'less [pause] human as you're, like, cutting them up because you're taking bits away and when we do the brain it's literally a brain, . . . it's normal now, . . . I don't know if that's a good thing'. What's apparent from these descriptions is an ambiguity about how dissection becomes more normalised and how these participants are uneasy about this process and what it signifies.

The data presented here discusses the idea of the donor body as a 'machine' or 'learning resource' and suggests that the ambiguities in the status of the cadaver are reconciled somewhat with further dissection experience. There are two aspects to this 'reconciliation'. The first is how skills develop and that dissection becomes much more of an exploration. The second is that participants felt this would maximise how the body was used and that this, ultimately, was what was intended when the person had donated their body. James stated; 'I'm here to learn, erm, and to learn also because this person has donated themselves. If I don't, that's a waste'. Similarly Kate states: "I felt bad that that person had given their body for me to absolutely butcher it, . . . but that's all the process of learning. I think once you understand that, you know that's what the person wanted, they wanted you to learn from that experience, erm then you can kind of, you can really get into it and enjoy it".

Therefore, there does appear to be a discernible process of adjustment over time, where there is reconciliation through honouring those who leave their body, through learning, and not wasting. Tony describes a process where he loses himself in the dissection and it's like: 'going down a rabbit hole' *and* 'getting into all the detail about something . . . dissecting for a long time . . . taking your time . . . When I did that with a brachial plexus, I didn't forget the brachial plexus after that'. He described this as a 'learning focus'. Tony also describes how knowing someone has donated their body means that there is a 'not insignificant sense of duty to actually learn something from it'.

## *Preparation and intentionality*

Given that participants were involved in teaching anatomy, the interviews explored how participants would prepare students for cadaveric dissection. Lynn stated that she would prepare students: "to try not to think about it too much and associate it with people . . . I feel I'm contradicting myself in what I'm saying because one minute I'm saying don't think about it and then I'm saying do think about it". Views about whether to encourage students to remember that the body was once a person varied in the accounts. Sue described how she would encourage students: 'to continue to remind themselves that that is a person'. However, as outlined above, the process of normalisation seems to involve dissociating from this idea. Kate takes a slightly different perspective. Rather than an emphasis on the personhood status of the body she states that students should:

> just remember that this is what these people wanted and they wanted you to learn from their bodies and they wanted you to enjoy it and find it interesting and be passionate and have fun with it. And just go out and do what they wanted you to do, respect their wishes. That's what you're doing aren't you? You're respecting their wishes by learning from their bodies.

Therefore, her emphasis is upon the intentionality and agency of the person rather than negotiating issues of personhood.

Eileen acknowledges the difficulties in negotiating expectations:

> what happens sometimes is a build-up of adrenalin and then anxiety . . . it's that navigating that line between being respectful because this is somebody's relative and this is an amazing gift that somebody's given us, but actually it's a teaching resource . . . so sometimes their [student's] imagination runs away with them.

Similarly, Tim describes the importance of managing high emotions and that: 'It's a whole intact body, erm and there's nothing we can do to get around that'. Tim is also cautious about generating high emotion through expectation. But this takes us back to a point that was made earlier; that it's difficult to prepare for this. As Alicia states she would prepare students by advising that; 'you can't really be prepared for it, so be prepared to not be prepared [laugh]'.

Many of the issues discussed by the participants in recounting their own experiences are around the ambiguities of the status of the donor body and how to reconcile treating the body as an object while also remembering that this was once a person and is still somebody's relative.

## *Gratitude and immortalisation*

Issues about the service of thanksgiving and expressing gratitude were explored in the interview and most participants struggled to express the strength of their gratitude.

> It's sort of quite hard to put into words just how erm, sort of honoured and grateful I feel to the people who leave their bodies here . . . it has formed a massive part of my life. Without people

> like them [body donors] and their generosity I literally wouldn't have the knowledge that I have today (Lynn).

So, in addition to ideas of gratitude and honour is the idea of the immortalisation and networks of knowledge that stem from the body of one person. Kevin expresses the extent of influence in the recognition of how many disciplines are taught anatomy through cadaveric dissection: "it's not just medical students, there's biomedical science, there's engineering, there's archaeology, there's dentistry, there's speech and orthoptics, there's nursing, you know its huge. So your one 'donation of your body may be used in multiple different ways to teach multiple different disciplines'". Martha also describes how the network of influence from one donor body extends beyond one body in terms of her teaching:

> I'm gonna go on to teach other people and spread what I've learnt from your body onto other people so, your body has been immortalised in my teaching and you know some of the people that I teach they might become a teacher and they'll spread that information that I gave to them (Martha).

In contrast, Kate describes a very personal influence of the bodies she has dissected. She describes how:

> one day I'm gonna donate my body and that'll be me and someone will be doing the same thing to me. I won't mind cos I want them to do that . . . I use it as a motivation as well to kind of stay fit and healthy, because I want people to dissect my body and get the best use out of it.

James explains how

> the skills and the knowledge that you're allowed to build from that person [body donor] erm, I hope would have been of benefit to me for the rest of my career and will erm consistently feature in it. And for me, if I was that person who had donated I'd be happy with that. So if I use any of the knowledge that I've got from them, erm, to influence anyone else's life then they've already been part of that. Now that they've passed away they still have an influence on people which there's not many ways you can do that really.

This rich image of networks of influence across personal influence, teaching practice and disciplines is underdeveloped elsewhere and in the next section these findings are discussed within the context of the literature presented earlier.

## Discussion and conclusions

The aim of this study is to explore how the dead human body is socially produced through the practices of those involved in teaching anatomy through cadaveric dissection. The findings are presented in five sections which are summarised as follows: (1) Anticipation and the 'imagined body' describes recollections of the challenges of the setting including the proximity of dead human bodies, the multi-sensory environment and the unpredictability of personal and emotional responses. (2) Ontology and the latent human provides

examples of the facets and body parts which were identified as being particularly personal, troubling, or evocative of personhood. (3) Detachment, dissociation and reconciliation suggests a process in which anatomists accept the transgressive nature of their work and 'reconcile' the moral ambiguities involved. This also relates to the last two themes; (4) preparation and intentionality which documents how participants would attempt to prepare students for the challenges of dissection and, finally, (5) gratitude and immortalisation suggests how the process of reconciliation is resolved through the agency of the person once living and through a configuration of the donor body in a network of scientific knowledge, pedagogic practice and personal influence.

The challenges in conceptualising the anatomical donor body are well rehearsed in the literature and in many respects this study validates the findings from previous ethnographic and qualitative studies of the anatomy lab. The donor body is described in the literature, and in this study, as collapsing boundaries; neither object nor subject; human but not human, between the living and dead but not of either world (Hafferty, 1991; Hallam, 2017; Olejaz, 2017; Prentice, 2013). Tattoos and other marks on the body surface also inscribe personhood on to the donor body; one of our participants actually considered getting a tattoo to establish an identity that would last after death. The face, the eyes, genitalia, hands, and the brain can all imply some personal significance and in what they symbolise (intimacy or memories for example). They provide, as Tony described in this study: 'one of those little moments'. These moments connect body parts to human lives and, to use Prentice's term 'activate the person' and suggest the latent humanness of the donor that breaks through at different points during the dissection process (Hallam, 2017).

The concept of 'detached concern' appears in the literature as a description of the response to the ontological tensions and ambiguities in the dead body (Hafferty, 1991; Lief and Fox, 1963). And while the participants in the study reported here referred to what could be interpreted as a process of detachment, they also used other associated terms. For example, how it's 'really easy to dissociate yourself' and also how 'you have to desensitise yourself'. So, participants used the terms 'desensitise' and 'dissociate' as well as 'detach'. Sue described how, as 'you're taking bits away and when we do the brain it's literally a brain, . . . it's normal now'. It is worth noting that much of the empirical data contributing to this discussion arises from research involving medical trainees. The implications were seen in terms of the impact upon professional practice, compassion, and empathy. The participants in this study are training as anatomy teachers however, and the disciplinary distinction is an important contribution to the literature.

Detachment, as described in these interviews, is perhaps also more aligned with that identified by Fountain (2014), who argues there is a much more nuanced process at play. In what Fountain refers to as 'focused distance' (p. 157), anatomists' are focussed on the processes of dissection and distance themselves from human aspects of the donor body; the anatomist is, in other words, concentrating on the job in hand. There is a good example in Tony's quote when he refers to a 'learning focus' which involves: 'getting into all the detail about something . . . dissecting for a long time . . . taking your time . . . When I did that with a brachial plexus, I didn't forget the brachial plexus'. This process orientation could be described as the emotional barrier otherwise conceptualised as detached

concern. However, the intention is not emotional detachment and anatomists do not want to forget the personhood in their individual donor bodies.

In this sense, detachment is one way of interpreting a complex process of social acceptance and normalisation but it is clearly more complex. It is, as one of the participants in our study suggested: 'navigating that line between being respectful because this is somebody's relative . . . but actually it's a teaching resource'. Also, as another member of staff stated 'on one level you have to desensitise yourself, but on another level you . . . don't want to ever forget that these are people's relatives'. Thompson's (2005) concept of 'ontological choreography', also used by Prentice (2013) to describe the practices of anatomists, is inherently useful here. Prentice describes the dynamic interplay between the bodies of the living and dead in the anatomy lab and she describes how there is 'mutual articulation' between anatomists and the bodies of the dead (Prentice, 2013: 71). This suggests that anatomical dissection is an embodied practice, involving the interplay between the bodies of the living and the dead in the construction of knowledge. Anatomical dissection is not therefore a passive process (Fountain, 2014; Hallam, 2017).

Finally, the idea that an anatomist is in a dynamic conceptual and material relationship with the donor also suggests that the donor body has an agentic quality (Olejaz, 2017; Stepputat, 2016). The materiality of personhood in donor bodies, in faces, hands and other personal and symbolic human referents is one aspect of what Olejaz has called 'postvital life'. The participants in our study also describe the agentic qualities of the donor body in the importance of acting out what 'these people wanted'. What is more, this agency results in a 'duty to actually learn'. Therefore, there is a sense of indebtedness evident in this relationship, identified in other gift relationships such as blood donation (Titmuss, 1970: 309). The ethical framework of donation operates as a social space for the anatomist, which allows them to legitimately dissect and destroy the human body. Ultimately, what is at first contextualised as a transgression in personal morality, to become detached and desensitised, becomes recontextualised as a professional virtue in which the anatomist is honouring the wishes of the person who donated their body.

The donor body, therefore, is reconceptualised as owning a materiality and agentic capacity. However, the network of influence goes further in the extent of influence one donor body has and this has important implications in these data as the participants are teachers (or learning to be teachers). The themes in this study, relating to 'reconciliation' and 'immortalisation' would suggest that there's a different interplay in this 'ontological choreography' and the donor body is articulated within a network of influence. For example, Martha had described how knowledge she has gained through dissection is: 'immortalised in my teaching and you know some of the people that I teach they might become a teacher and they'll spread that information that I gave to them'. The participants in this study reconcile dissection as a process that is inherently transgressive, by reconceptualising their work in terms of the intentionality of the people who leave their bodies for anatomical education and their continued interplay between the body, dissemination of anatomical knowledge, and pedagogic practice.

In conclusion: the findings of this research suggest that the work of the anatomist becomes normalised, but that a donor body is constituted in an intricate and dynamic relationship with an anatomist throughout a network of knowledge extending beyond the immediate practice of dissection. Consequently, the work of the anatomist is a social

practice, comprising not just the practice of dissection, but also the material and embodied practices of learning *and teaching;* the agentic purpose of donation and reciprocal social obligation; and an influence extending across practices and disciplines. This latter is, perhaps, the nearest one gets to immortality.

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