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Disabled Sensory Explorations of Roman Material Culture: An Osteoarchaeology Approach

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This paper introduces a disability perspective to sensory explorations of Roman material culture. Exploration of the senses often assume a non-disabled, adult perspective; however, a person's experience is greatly impacted by their body and whether an environment is designed to include different bodies. The paper presents an interdisciplinary, osteoarchaeological approach to exploring sensory experiences had by people with impairments, illustrated by two case studies taken from the human skeletal population from the Alington Avenue cemetery, Dorset, UK. Their sensory experiences were explored within the local landscape and using epigraphic artefacts found in the Dorset region. Whilst there are limitations to a person's ability to understand what it is like to stand in another's shoes, even small insights can prove enlightening to both our understanding of the past and how we think about our disabling world today. This paper is a call for further research in this field.

Introduction

The emergence of the philosophical movement of phenomenology is credited to have inspired the reengagement of the academic arena with sensorial experience (Hamilakis 2013). Phenomenology is the study of structures of consciousness as experiences from the first-person point of view. Christopher Tilley (1994; 2004) was one of the first to adopt this perspective for use in the exploration of archaeological sites, claiming, in essence, that by placing yourself within a landscape you can know what it was like to experience that place in the past. Phenomenological studies, however, overlook the diversity of human experience, tending to reconstruct the sensory perspective of a person who is adult, male, white, and non-disabled (Brück 2005; Scully 2012). The concept of embodiment, as developed by Maurice Merleau-Ponty (2012), challenges the dichotomy between the mind and body, as a person's body is the sensory interface through which the world is experienced and interacted with. As a result, the experience of an environment is changed significantly if, for example, it is looked at from the perspective of someone with mobility or sensorial impairments. Aspects of a person's identity, like gender, age, and disability, all have the potential to influence an individual's sensory experience (van Dyke 2013). The focus of this paper is disability.

This paper is a call to action for scholars of the senses in classical studies to remember and incorporate the variation of the bodies present within the sensorial interactions under study. The investigation of the sensory experiences of disabled people in the Roman past may seem a niche topic. The ancient Roman world is often perceived as inhospitable to people with different bodies. The theme of infanticide dominates academic discussion of ancient Roman disability (Laes 2008), which perpetuates the notion that disabled experience was rare and so offers little potential for study. This perception is being challenged, however, by a growing corpus of studies exploring Roman osteoarchaeological evidence of the lives of people who lived with a range of impairments beyond any selection processes or immediate acquisition (for examples see Graham 2013; Southwell-Wright 2013; Powell et al. 2016; Navarro et al. 2017; Evelyn-Wright 2019; 2022; Laes 2021)

This paper provides an example of how disabled sensory experience in the Roman past can be explored. Two skeletons excavated from the third to fourth-century AD cemetery site of Alington Avenue, Dorset, UK, are used as case studies throughout this paper to demonstrate an osteoarchaeological approach to reconstructing the sensory experience of people who lived with impairments. Osteoarchaeology is the study of the physical remains of past people from archaeological contexts (Sofaer 2006: 55). The approach combines osteological and archaeological analyses of the skeletons and their context to investigate the ramifications of the Dorset environment on the lived experience of

the individual. This approach has several challenges, two of which are explored in more detail below, however, its greatest limitation is that not all impairments are evident within human skeletal material. Impairments which only affect soft tissues tend to be invisible within the osteoarchaeological record, this includes most sensory, cognitive, and learning impairments (Roberts 2000). There are notable exceptions, such as a case of Down's Syndrome identified in the skeleton of a child from the fifth to sixth century AD in North-East France (Rivollat et al. 2014) and an instance of deafness having been diagnosed in the skeleton of a young child from the Romano-British site of Poundbury Camp, through the evidence of bone growth covering the auditory canal (Farwell and Molleson 1993: 187; Molleson 1999: 72; Redfern et al. 2002: 192; Lewis 2016: 27). It is crucial to remember, however, that the impairments recognised in the skeletal record represent the bare minimum of those that actually existed. Nevertheless, it is hoped that the following will encourage future research, thus contributing to the improved inclusivity promised in the paradigmatic shift in the study of the senses in the classical world described by Heather Hunter-Crawley (2019).

Defining Disability

The terms 'disability' and 'impairment' are often used interchangeably, however, their definitions are distinct and require clarification as they heavily feature throughout the paper. An 'impairment' refers to the biomedical condition, which can be physical, cognitive, mental, sensory, emotional, developmental, or a combination of these. Impairments can be described as 'congenital' (a condition present from birth) or 'acquired' (a condition that develops later in life, for example as the result of injury). 'Disability' describes the social phenomenon, illustrating the relationship between society and individuals with impairments (Shakespeare 1999).

The medical and social models of disability represent two key and contrasting theories relating to disability. The medical model views disability as an individual's medical tragedy. Under this model, the aim is to change and fix the disabled person. Conversely, the social model shifts the emphasis towards the disabling society, aiming to adapt the social environment to be more inclusive of disabled people (Cross 2007). The social model highlights the role of the social context in the creation and maintenance of disabled identity. To illustrate, dyslexia is a common learning difficulty estimated to affect one in every 10 people in the UK today (NHS UK 2022). The condition was not identified until relatively recently, however, due to changes in the developed world's requirement that a population is literate, which consequently has disabled people with dyslexia (Cross 2007). In other words, it is not the impairment that has changed, but rather society's requirement of an individual with dyslexia.

The social model of disability has been widely accepted in academia (Shakespeare and Watson 1997), but it does have its limitations. The medical and social models of disability tend to designate the disabled as an opposite to non-disabled. This binary categorisation can be unhelpful, leading to the illusion that the disabled identity trait is unchanging. In actuality, an impairment can be acquired later in life or adaptations can be made to reduce the impact of an impairment. The social model also renders the impaired individual very passive throughout the discourse of their disability, as it does not take into account that to be disabled is a highly personal, lived experience, which can be altered by numerous factors (Battles 2011; Roberts 2011). The impaired body and the social/physical environment have a role to play in the process of disability (WHO 2011). Disability is best understood, therefore, as a process of interactions between an impaired body and its lived context.

The Case Studies

To illustrate the approach demonstrated throughout this discourse, two adult skeletons from the cemetery site of Alington Avenue will be used as case studies. Between 1984–1987, Alington Avenue, Dorset, in the South of England, was excavated and 91 Roman period inhumation burials were found (Davies et al. 2002). The site was situated less than a kilometre away from the town walls of Durnovaria, now known as Dorchester, on an approach road to the town. Amongst the skeletal assemblage recovered from Alington Avenue were the skeletons AA766 and AA210. Both individuals were not differentiated at time of burial; both were interred in a primary, singular internment and furnished with a wooden coffin and hobnailed shoes worn at the time of burial (Davies et al. 2002; Evelyn-Wright 2022). The skeletons were recorded as part of a larger assemblage, according to standards set by Brickley and McKinley (2004), which were adapted to include transition ageing methods developed by Boldsen et al. (2002) that enables for older age categories to be identified. For full details on recording methodologies used, please see Evelyn-Wright (2022).

AA766 (**Figure 1**) refers to the well-preserved skeletal remains of a young adult biological female, aged 18–20 years at time of death. According to Trotter and Gleser's (1952; 1958) stature estimation equation, AA766 is estimated to have been 1.23 m tall (c. 4 ft). Unfortunately a specific stature estimation technique for skeletons with dwarfism has yet to be developed (Traversari 2020: 111). All the epiphyses (end part of a long bone, which ossifies and develops separately from the bone shaft) were fused to the bone shaft, indicating that the individual was fully grown at time of death. At this height, AA766 is estimated to have been 36 cm shorter than the female average from Roman Britain of 1.59 m (Roberts and Cox 2003: 396). All AA766's limbs were reduced in size,

however, the bones of the forearms (radii and ulnae), shin (tibiae and fibulae), and lower jaw (mandible) were most affected. Differential diagnosis has identified Langer type mesomelic dwarfism as the best-fit diagnosis in the case of AA766 (for full details of this differential diagnosis see Rogers 2002; Redfern 2006; Evelyn-Wright 2022). This is a very rare form of dwarfism, with only one other case reported from a Romano-British context (Waldron 2000). The skeleton also exhibited several other palaeopathologies, see Evelyn-Wright (2022) for full details, which include bilateral Madelung's deformity (a wrist malformation in both arms) and lumbar lordosis (curvature in the lower spine), which clinical literature suggests is associated to the dwarfism (Langer 1967; Waldron 2021: 276). The lumbar lordosis is also linked to the incidences of Schmorl's nodes and spondylolysis exhibited in AA766 (Been and Kalichman 2014: 93). A Schmorl's node is the name given to the osteological lesion caused by a herniated vertebral disc leaving an imprint in the adjacent vertebral body (Waldron 2021: 128), which in case of AA766 were found throughout the entire lower spine (lumbar (L) vertebrae L1–5 and thoracic (T) vertebra T12). Spondylolysis refers to a spinal pathology, where the neural arch of a vertebra has detached from the vertebral body, which was evident in L5 (Waldron 2021: 140). AA766's skeleton alludes to periods of health stress throughout their lifetime. Enamel hypoplasia in the maxillary incisors (grooves of thinner tooth enamel in the upper front teeth) implies health stress whilst those teeth were developing, between ages 1.5–4.5 years (AlQahtani et al. 2010: 485; Waldron 2021: 319). Porotic lesions in the cranial vault (porotic hyperostosis) and upper eye orbits (*cribra orbitalia*) have also been identified in AA766, both of which are associated with health stress (Redfern 2006; Waldron 2021: 351; Evelyn-Wright 2022*). Cribra orbitalia* is often described as an indicator of anaemia, however, this assertion has been challenged (Brickley 2018; Waldron 2021: 307). Despite the debate concerning aetiology, it is clear, that such lesions occur in individuals with compromised health (Godde and Hens 2021). The enamel hypoplasia and active *cribra orbitalia* indicate that health stress was present in early childhood and at the time of death respectively. This could represent two separate health stress events or continuous stress spanning years. Finally, AA766 had lost four mandibular teeth antemortem (the bilateral

Figure 1: Skeleton AA766 laid out (Author's photo, 2016).

canines and second pre-molars) and four maxillary teeth (on the right side both pre-molars and first molar and on the left the second pre-molar) and left-side first molar in the mandible was affected by carious lesions.

AA210 refers to the well-preserved skeleton of a biological adult male, who was aged over 60 years at time of death. The skeleton presents a complicated palaeopathology record accrued over a lifetime. To start, osteoarthritic lesions were found in both femoral heads (hip joints), T11, T12 and L1 (vertebrae located at the base of the rib cage and top of the lower spine). Schmorl's nodes are also present in T11 and T12. I estimate that at least two traumatic events are evident through the presence of three fractures in the right hand, right arm, and right ankle. A midshaft, oblique fracture is evident in the second metacarpal of the right hand. Whilst the fracture is well healed, the bone is deformed which would have caused a crooked knuckle at the base of the index finger. The right-side ulna (forearm bone) presents a well-healed fracture in the distal third of the bone shaft (wrist end). These two fracture types are often associated with interpersonal violence; the former is a common boxing injury (Lovell 1997: 164) and the latter is often referred to as a Parry fracture (Judd 2008). By contrast, the oblique fracture in the right fibula lateral malleolus, located in the region of the ankle, exhibits active periosteal remodelling on the fibula at time of death. The fracture type is often the result of abduction and/or lateral rotations, such as a twisted ankle (Lovell and Grauer 2019: 364). Periosteal changes refer to thin or thick new bone formation in the outer membrane of the bone and are often triggered by trauma and can indicate an infection associated with an injury (Waldron 2021: 183). Periosteal changes can be worsened in cases where weight-bearing on an injured limb is attempted too early in the recovery process causing an inflammation response in the affected area (Augat et al. 1996). Rebecca Redfern (2010: 459) described AA210's knuckle as poorly set compared to other contemporaries, perhaps as a result of the joint being used within 2–3 weeks recommended healing time for such injuries (Apley and Solomon 1994: 296). The quality of AA210's fracture recovery processes perhaps suggests that AA210 could not afford the medical support and/or was not able to have a sufficient recovery period. AA210 is also observed to have had a depressed fracture to the cranium and fractures in the nasal bones and right mandibular condyle, although there is some interobserver variation in these observations (Redfern 2006: 193; Evelyn-Wright 2022). Estimating when a fracture incurred before death is currently a desideratum for osteoarchaeology, however, fractures can be ranked in the order they were acquired by appearance (Waldron 2021: 217). Rebecca Redfern (2006: 193) described AA210 as an injury recidivist. I argue that there were at least two events in which AA210 incurred injury (Evelyn-Wright 2022). The level of healing evident within the hand and arm

fractures is markedly different to the ankle. Analysis of radiographs of the fractured bones could help further delineate the level of healing evident and further clarify the number of injury events that were experienced (Boer et al. 2015); this has not yet been possible in this case. Finally, AA210 exhibited evidence of poor dental health. Out of the 26 surviving teeth sockets (the front of the maxilla with the incisors and canines were not preserved), ten teeth were lost antemortem—all four 1st molars, three 2nd pre-molars (the exception being the maxillary left), both maxillary 2nd molars, and the right-side 3rd molar. Additionally, the mandibular left second incisor and first right are worn to the root. This means that they lacked the nine to ten pairs of contacting upper and lower teeth required for minimum functional dentition (Gotfredsen and Walls 2007).

At first impression, AA210 would seem an unlikely candidate for selection for a study of disability. The palaeopathologies exhibited in skeleton AA210 are not uncommon. Within the Alington Avenue skeletal assemblage AA210 is one of the 49% of skeletons to exhibit spinal pathologies and 14% with a trauma-related lesion (Evelyn-Wright 2022: 133). The commonality of the pathologies, however, does not negate their impact on the sensory experiences of the individual and their disabling impact. To illustrate the point further, consider antemortem tooth loss, which has been estimated to impact 14.1% of tooth sockets observed from Romano-British skeletal assemblages (Roberts and Manchester 2010: 74). AA210 lost a substantial number of teeth by time of death, suggesting that dental pain frequently featured in AA210's life (Evelyn-Wright 2022). The lack of the number of teeth required to meet a minimum functional dentition likely created difficulties with speech and masticatory function. This has profound implications for this individual's experience of the sense of taste, marring the experience of eating.

Two challenges have been identified that make it difficult to explore disabled sensory experience: identifying the environment where disabled people lived and interacted, and reconstructing a disabled experience. The following two sections explore these challenges and detail how they are mitigated in the current study.

Challenge One – Where Were the Disabled People?

This difficulty relates to identifying the context within which disabled people lived and interacted in the Roman world. Robert Garland's (2010: 26) assertion that disability was so prevalent as to nearly affect all adults in the ancient world sooner or later, suggests that one can argue that disabled people were everywhere in the Roman world. This, however, does not help with the selection process for study. On the other hand, Christian Laes (2008) describes several textual sources that indicate disabled children

being confined to, and restrained in, the home. Similarly, at the other end of the age range, Rebecca Gowland (2017b) shows that confinement to the domestic sphere was also frequently experienced by older disabled people. Healing sanctuaries provide a rare incidence where the presence of disabled people can be inferred. Emma-Jayne Graham (2017) explored the physical accessibility of the site of Ponte di Nona, a sanctuary site in Italy with a likely specialism for mobility complaints, as indicated by the high number of foot votives found there. The accessibility ramps identified by Debby Sneed (2020) at earlier Greek healing sanctuary sites, were not observed at Ponte di Nona. Instead, a steep incline hill providing the only entrance to the site, alludes to trial-like labour being part of the religious pilgrimage (Graham 2017). Such studies provide fascinating insights but are difficult to apply to a British context, as votive artefacts are not so common in British contexts (Ferris 1999). Ponte di Nona's specialism is inferred on the strength of a votive assemblage of over 8,000 artefacts, within which approximately one in three represented a foot or part of one (Graham 2017: 255). In comparison, a similar specialism was inferred at Uley on the strength of three lead model legs (Ferris 1999: 2). Nevertheless, there is potential for future study to reconstruct the phenomenological experience of healing sites like Uley from the perspective of a supplicant with impairment. Even in broad terms, the effort involved in accessing these sites in terms of funding and undertaking potentially long-distance journeys, along with the evidence that nevertheless many did do so, indicates the high motivation the supplicants had to make these pilgrimages, tangentially suggesting feelings of anxiety, desperation, and dissatisfaction towards their impairment.

Stable isotopes would be one possible avenue of investigation, as they are used increasingly to investigate diet and mobility in past human populations (Prowse 2016). The skeletal assemblage from Alington Avenue has already been subject to dietary stable isotope analysis (Redfern et al. 2010; Redfern et al. 2019), with AA210 being observed to have elevated nitrogen (δ^{15}) values, usually associated with high marine product intake, but may also be evidence of episodes of health stress and disease (see Redfern et al. 2019). The potential of stable isotopes within the study of disability in the past has yet to be realised, with the notable exception of Miclon et al.'s (2021) paper, which showed that an individual with facial dysmorphia had no discernible differences in diet to their medieval French burial community. Isotopic Strontium ($^{87}Sr/^{86}Sr$) and Oxygen ($\delta^{18}O$) levels within the dental enamel can reflect the local bedrock, water sources, and foods of the location where the individual was when the teeth were forming in childhood (Brown and Brown 2011; Prowse 2016). The stable isotope levels detected are rarely unique to a geographical region, however, comparing these isotopic signatures with those from local locations can indicate a local or migratory status (Brown and Brown

2011). In summary, stable isotopes can indicate an individual's mobility, rather than a precise locale of lived experience. Nevertheless, isotopic analyses can prove insightful, such as in the case of AA766. The free or slave status of AA766 is of particular interest in the context of the popularity of slaves with impairments, such as dwarfism, in the early Roman Empire (Garland 2010; Southwell-Wright 2013). Whether this fashion for slaves with impairments extended temporally and to the Romano-British setting is unknown, which is unsurprising given that the evidence for the Romano-British slave population is generally scant (Redfern 2018). A migrant status could strengthen an inferred slave's identity in a case like AA766, particularly in light of Greg Woolf's (2013) assertion that a key driver of female migration in the Roman world was the slave trade. While exploring the stable isotopes in relation to diet, mobility, and disability in the Roman past would be a fruitful area for future research, it does not help identify locales for potential investigation into the sensory experience of landscapes for people with disabilities.

For this osteoarchaeological approach, one is required to assume that most Romans were buried close to their lived environment. It is axiomatic that people are generally buried in a place that they are someway connected to, burial is rarely random. By the third to fourth century AD, inhumation had replaced cremation as the preferred disposal rite (Philpott 1991: 53). For ordinary Romans, it seems likely they were inhumed within the vicinity of the area where they died. As Booth (2017) points out, a corpse is an irksome burden to transport, as they are cumbersome and heavy, especially when housed in a coffin, of roughly 200 kg in weight. Over distances and, therefore, time, there is also the issue of body decomposition. Transportation of a body over a large distance was likely the reserve of the fortunate few with the resources to do so.

Reconstructing the day-to-day occupation and experiences of an individual person from Alington Avenue is not possible, as is true for the majority of osteoarchaeological cases. Unfortunately, there is no evidence at Alington Avenue of any burial occupant's occupations surviving in the form of trade tools (Davies et al. 2002). Additionally, identifying an individual's occupation exclusively from skeletal traces is regarded as a fruitless enterprise by much of the palaeopathology field (Jurmain et al. 2012; Alves Cardoso 2018; Waldron 2021: 289). This difficulty is further compounded as Alington Avenue lies on the boundary between the town of Dorchester and the rural sphere, and so there is confusion as to whether the cemetery served a rural or urban community (Davies et al. 2002; Hamlin 2007). This distinction can have an impact on a population's occupations, experiences, health, demography, and mortality (Mattingly 2007; Redfern et al. 2015). The urban sphere could be the everyday lived environment or somewhere occasionally visited as the centre for commercial and political business. The rural environment has left fewer traces archaeologically, but it was likely the everyday

reality for much of the Romano-British population (Rohnbogner 2018). Dorset was known for its Purbeck marble, Kimmeridge shale, and black-burnished ware industries (Mattingly 2007), so these were likely big employers in the region. Exploring an individual's experience of such an occupation, however, would be speculative at best.

This discussion ultimately concludes that for most ancient skeletons, including AA210 and AA766, there is only one locale to which we know the individual had a connection to, and that is the cemetery site itself. The sensory reconstructions therefore assume that these individual's connection to the cemetery began before death. Although this is limiting, this does provide some scope which will be explored later.

Challenge Two – Reconstructing Disabled Experience

The use of the theory of embodiment to interpret a skeleton's life experiences is a new approach in Romano-British archaeology but it has been successfully applied in other areas (see e.g. van Gelder 2020). There are limitations to our ability to reconstruct another embodied experience. Living in Roman Britain was an embodied experience, the environment and society were sensed and mediated through the physical body (Gowland 2017a). An impairment affects the interface through which the world is interacted with, thus impacting the embodied experience. Our only reference point is our own body; we cannot escape our own embodiment and its history. Thus, I cannot fully comprehend what it is like to be in another person's shoes, past or present, disabled or non-disabled.

Disabled people's descriptions of their experiences can provide useful insights into different embodiments. For example, the Paralympian David Howe (2011) presents an eloquent description of his experience running, detailing his continual awareness of his impairment, body, and the ground surface. I was fortunate enough to be able to interview a family friend, JL, who could offer experiential insight into what it is like to be of similar height to AA766. JL is a woman in her 60s, who has never received a final diagnosis for the cause of her smaller stature and associated hip complaints. JL's valuable testimony offered further insights into, for example, her attitude towards other people's responses to her, but for the purposes of this paper, the focus is placed on the physical (for JL's full interview see Evelyn-Wright 2022). Similar to how Mende Nazar's experience of modern slavery informed scholarship of ancient slavery (Brooten 2015), so too has JL's experience today helped inform my impression of living with short stature in Roman Britain. These insights are invaluable to improving understanding of disabled experience, however, it has to be caveated with the understanding that the body cannot be universalised (Garland-Thomson 1997). How one person experiences the world will be different to another, and the experience of an impairment will differ from person to person. Studies that explore the experiences of multiple participants

help highlight common themes; for example, Erin Pritchard's (2021) study of disabling experiences encountered by people with dwarfism has helped with AA766's case study.

The use of osteoarchaeological remains to explore the sensory experience of disabled people in the past requires the general acceptance of the concept of *permanence biologique*, the understanding that the human body has not fundamentally biologically changed over time (Graumann 2017; Laes 2018). This concept allows us to assume that a biological insult's impact on a body would be similar for modern and past people. It is with this understanding that modern clinical information can be used as a specific type of ethnography, so that experiences shared by modern day people with disabilities can offer insight into the past (see e.g. Faccia and Williams 2008). A problem with this approach however is that these useful modern insights come with cultural baggage (Latour 2000; Roberts 2011). For example, our understanding of an impairment, its typology, its cause, progression etc. cannot be inferred back in the past. For instance, impairments like autistic spectrum disorder, are, we understand today, permanent and incurable (whether this is a desirable outcome or not). In the past, however, people could plausibly have thought that a child could grow out of it (Laes 2008). A researcher therefore needs to disentangle, where possible, the insights that can be extrapolated back from its cultural, time-specific baggage.

Permanence Biologique allows us to understand that biological processes within human bodies, past and present, are broadly similar. The consequences of these biological processes and pathology, however, can vary greatly from person to person. To illustrate, the aetiology of Down's Syndrome is well known, it is a genetic condition caused by an additional chromosome. The impact of this however can vary. People with Down's Syndrome can have a distinctive appearance, learning disabilities, vision, hearing impairments, and associated health conditions, however they can exhibit all, none, or some of the symptoms in all sorts of combinations (Evans-Martin 2009). This makes interpreting the consequences of a skeletal pathology very challenging. This variation between individuals, I believe, made osteoarchaeologists unwilling to stray beyond diagnosis in their assessments of palaeopathology.

An alternative option is to explore the clinical literature for the most likely consequences of a pathology. For example, AA210 exhibits multiple osteoarthritic lesions. Osteoarthritis is the most common post cranial pathology found in skeletal collections (Waldron 2021: 76). The impact of the pathology, however, is variable. Symptoms related to osteoarthritic lesions can be profound or completely absent, and there is no evident correlation between the size of lesion and the pain experienced (Jurmain 1999; Kjellström 2010; Weiss 2015). Clinical literature has however allowed the creation of a list of criteria to help select when, in this instance, osteoarthritic lesions may be implied to cause impairment. These criteria are:

- Osteoarthritic lesions located in the thumb base or medial compartment of the knee and hip, as these locations, in particular, have more often been associated with pain (Waldron 2012).
- Eburnation is evident. Eburnation refers to evidence of bone-on-bone contact in a joint resulting from the deterioration of the cartilage in the joint causing a polished surface. Eburnation is, therefore, evidence of severe and long-term osteoarthritis (Jurmain 1999; Craps 2015).
- Osteoarthritic lesions were found in the same vertebrae as Schmorl's nodes as this has been linked to activity limitation and pain (Faccia and Williams 2008).

Two of these three criteria are present in the case of AA210, with Schmorl's nodes having been found in conjunction with osteoarthritic lesions in T11 and T12 and osteoarthritic lesions having been found in the hip joints. In these incidents, therefore, pain and impairment are inferred. This system is not perfect; it will not be wholly accurate. It is, however, an alternative to overlooking the impairing consequences of pathologies like osteoarthritis, which is also inaccurate. It is still relevant to discuss the range of consequences and symptoms associated with palaeopathological lesions because even if the skeleton specifically under discussion did not have this actual experience, someone probably did. As Kimberley Plomp (2017) asserts in relation to back pain, if these pathologies impacted the quality of life in the past even a fraction as much as they do in the modern world, they are worth considering during osteoarchaeology investigations.

Disabled Sensory Experience at Alington Avenue

Roman Dorset, specifically Alington Avenue, was selected for the study of Roman disability because of the range of palaeopathology found there. The county lies on cretaceous chalk, creating soils with a high calcium content, inhibiting the leaching of calcium from bone material. As a result, the region sees excellent levels of preservation of its osteoarchaeological material from 13 sites (Hamlin 2007; Redfern 2008). Roman Dorset, particularly Dorchester, has been the subject of archaeological investigations (c.f. Smith 1993; Woodward et al. 1993; Durham and Fulford 2014). The area has been continually inhabited throughout Britain's history, meaning that much of the Roman archaeology has been lost, especially as medieval inhabitants quarried the Roman architecture for resources (Putnam 2007). Despite this, some analysis within the context has been possible.

Limited evidence of epigraphy has been found in Dorset, including three examples of tombstones, one milestone, and one altar, which have been repurposed, often as part

of churches (Palmer 2019). Epigraphy, therefore, did exist in Roman Dorset and the known examples may well represent a small proportion of what existed. Very few of the graves at Alington Avenue were intercutting, strongly implying the use of grave markers (Davies et al. 2002; Putnam 2007). Ray Laurence (2017) explored child interaction with urban architecture within a Pompeiian context. As children and people with dwarfism have similar statures, the impacts of the accessibility or inaccessibility of the space can be similar for both groups (Pritchard 2021). Thus, by exploring the implications of a shorter stature within the Roman urban space, Laurence has inadvertently provided insights into the interactions had by people with dwarfism; some of which can be applied to the Dorset context. For example, Laurence (2017) describes how shorter stature has implications for the experience people had with epigraphic artefacts like statue bases and altars. Children and people with dwarfism, when encountering artefacts like stonework standing 1.08 m to 1.36 m tall, would struggle to see the top surface of the objects unaided. By contrast, the incised surfaces on the sides would have been more accessible to a tactile interaction. The most complete example of an inscription from Roman Dorset is the tombstone of Carinus (RIB 188) measuring 88.9 by 71.1 cm (Palmer 2019). The item would have been taller originally as the base has been broken off. The Carinus tombstone is likely to have fallen between these two height measurements explored in the Pompeiian context, and so AA766's interaction with Carinus' tomb could mirror that described by objects in Laurence's study (2017). The artefact has been dated to AD 43–410, and so could coincide with AA766's lifespan, however, the exact prominence of the tombstone is unknown as the stone was reused in the foundations of a church in Fordington (Palmer 2019). Similarly, the limestone altar dedicated to Jupiter Optimus Maximus and dated to AD 43–410 (RIB 3047) was found reused in Holy Trinity church, Godmanstone, 7 km north of Dorchester where is it estimated to have originated. Incomplete, with its capital and base mouldings removed, the altar is 86 cm tall by 46 cm. This height is similar to Laurence's (2017: 34) average height of altars from Pompeii, 89 cm. Laurence concluded that the surface of altars were accessible in terms of touch but not necessary in terms of sight. For AA766, whose arms had reduced reach, the tactile access to the surface of the altar may well have been curtailed as well. The height of an altar restricts the level of access for shorter people like children and people with dwarfism; they had to be a certain height to use the altar unaided.

The way architecture is designed shapes the interactions people have with it. So, the size of Carinus' tombstone has dictated that AA766, whether intentionally or not, has a different experience of interaction than other adults. Thus, AA766's interaction with material culture remained similar to that of children throughout her life. A key theme within Erin Pritchard's (2021) study of people with dwarfism's experience of disabling

environments is the concept of infantilising. The creation of tall spaces as barriers for children to prevent immature misuse inadvertently infantilises people with dwarfism, often making them dependent on others (Pritchard 2021). An urban environment designed for the average adult, as Dorchester likely was, would highlight a person with dwarfism's difference in stature and reinforce the individual's differential perception of themselves.

The primary activity associated with cemetery sites is of course the funeral. Valerie Hope (2017) explored the sensory experience of Roman mourning and found a sensory 'scape' unique to the funerary scene. Hope (2017) describes the mourning period as an inversion of the acceptable codes of conduct, with people deliberately self-harming and neglecting their hygiene during the performance of their grief. The graveside soundscape was a cacophony, comprising of the sounds and groans of mourning and the formal lament, the *nenia*, performed by singers and musicians (Hope 2017). Funerary scenes were accompanied with distinctive odours. Whilst mourning, people were expected not to bathe or use perfume. The decomposition of the corpse also provided a distinct smell which people tried to mask with incense (Hope 2017). The applicability of Hope's (2017) findings to the context of Roman Dorset is difficult to determine, as she used literary evidence and sculpted relief representations of funerary scenes, which mostly relate to central Mediterranean and elite contexts. There is only one contemporary historical text describing a funeral specifically in Roman Britain, the cremation of Emperor Septimius Severus, who died in AD 208 in York (Dio, *Roman History* 77.15), which has minimal relevance to the site of Alington Avenue, leading to the conclusion that documentary evidence cannot be applied directly to the reconstruction of funerals in Roman Britain (Weekes 2016). An Empire-wide funerary tradition has been proposed, however, as evident through the strong similarities seen in the archaeological record from Britain to the Black Sea (Pearce 2013).

Conceptually, and most of the time physically, the transfer of the deceased from the world of the living to that of the dead is common to all mortuary processes (Fowler 2013). It involves not only the physical disposal of the deceased's body but also the transition of the community left behind to an entity without this person. The Roman funerary procession, or the *pompa*, was an important part of the mortuary process, so much so that it informed aspects of town planning (Pearce 2011; Booth 2017). Like many other Roman cemeteries, Alington Avenue was situated on the approach road to Dorchester, approximately a kilometre away from the city walls. Funerary processions at Alington Avenue have sensory implications for both AA210 and AA766. Dwarfism can compromise mobility; the shorter limb length creates a shorter stride and a slower walking speed (Clark 1990; Tilley 2015: 70). Dwarfism often impacts an individual's

gait (Tilley 2015: 69; Broström et al. 2022) and the cost of walking is higher, both metabolically and in oxygen consumption, for people with achondroplasic dwarfism compared to control participants (who do not have dwarfism), meaning that walking was more tiring (Sims et al. 2018). For AA210, the ankle injury could have caused difficulties walking or loading the ankle. The fracture likely presented with bruising, swelling, insensibility in the ankle and difference in appearance. Fibula fracture can damage the nearby ligaments (namely the deltoid, anterior, and posterior tibiofibular ligaments) as well as surrounding musculoskeletal and nervous tissue (Lovell and Grauer 2019: 361). The result can include impaired balance, sensation, and range of movement. The periosteal changes active at the time of death complicate the healing time, estimated to ideally entail between four to eight weeks of immobilisation (Cunha 2019). Osteoarthritic lesions located in the hip have been associated with pain and thus would also have impacted the individual's mobility.

Compounding AA766's and AA210's mobility difficulties was the uneven walking surface evident at Alington Avenue. By the third to fourth century AD, the site and its surroundings already had a long history of human activity which left its mark on the landscape (Gale 2003). Less than 2 km east of Alington Avenue is Mount Pleasant, the largest and most architecturally complex component of a major Neolithic ceremonial complex (Greaney et al. 2020). Alington Avenue itself has a long barrow that formed a part of this Neolithic complex (Greaney et al. 2020). The site of Alington Avenue saw continued human intervention since the Neolithic period onwards (Davies et al. 2002). The cemetery site was developed on the site of extant prehistoric earthworks, which included the long barrow and a ring ditch, and a later D-shaped enclosure (Davies et al. 2002: **Figure 2**). The precise course of the road that lead from Durnovaria (Dorchester) to Purbeck/Poole Harbour and passed in close proximity to Alington Avenue is unknown (Davies et al. 2002: 3), and so estimating a processional route is speculative. The Roman period burials were dotted around these existing structures. The locations of the vast majority of graves at Alington Avenue necessitated the traversing of earthworks, from whichever way you approached (**Figure 2**). The establishment of cemeteries on the sites of extant prehistoric structures is not unique to Alington Avenue and is interpreted as the burying community attempting to create and maintain relations to their perceived ancestors and each other (Esmonde-Cleary 2000; Pearce 2011). The cemetery site had significance for the burying community. The preexisting earthworks, however, created an uneven terrain, which had implications for funeral processions; for example potentially restricting the use of transport. Processions on foot would present more of an effort for both AA210 and AA766. Uneven ground creates a greater obstacle to people with dwarfism and painful impairments, like AA766 and AA210, impacting their haptic experience of the landscape.

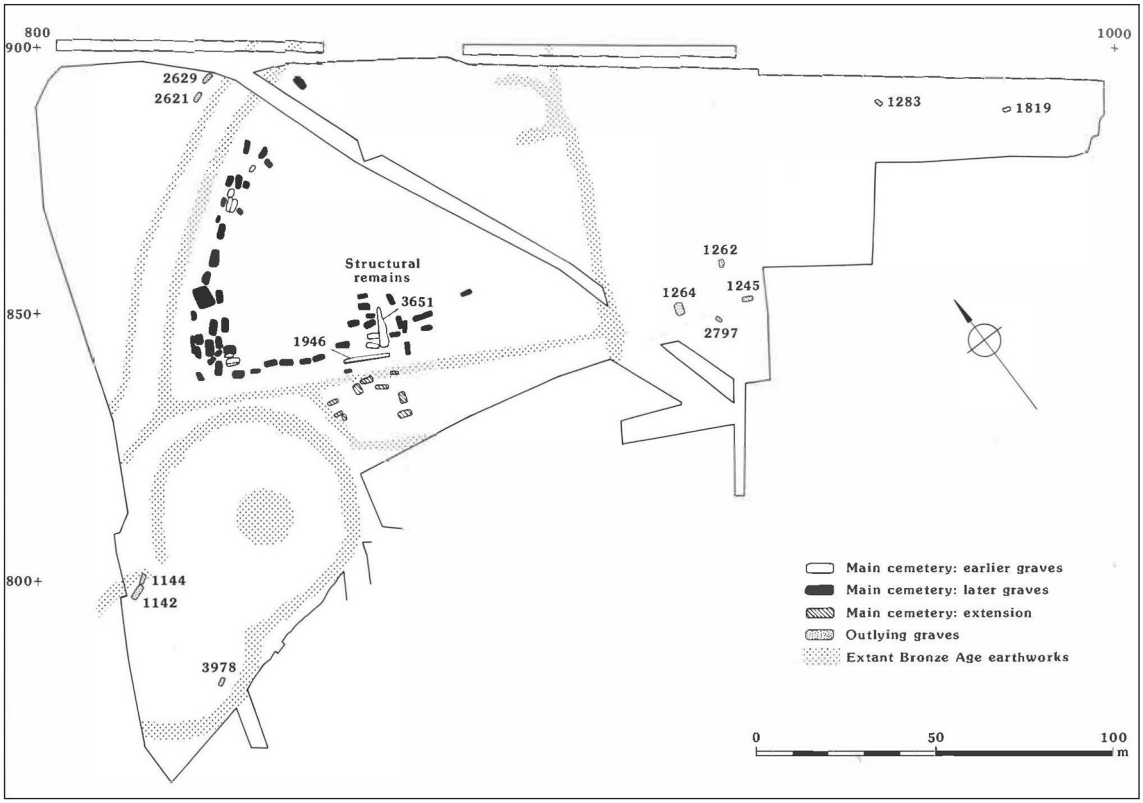

Figure 2: Plan of Alington Avenue cemetery site, showing the location of Roman burials in amongst Bronze Age earthworks. (Davies et al. 2002: 130. Reproduced with permission).

Funerary processions were public events. How well attended a funeral would have been would naturally have depended on the individual, the size of their social circle and the resources available to pay for, for example, musicians to perform the *nenia*. The funerary procession was, however, designed to be a public event. Anthropologists have noted that an almost universal trait in societies is that death is linked to notions of pollution, leading to the performance of exceptional behaviour specific to the liminal stage of the funerary process (Hendry 2016). The procession not only provides the practical purpose of transporting the body to storage, but also is a public rite of passage, where the affected community is seen to transition from polluted mourners to a changed entity without the deceased. The public nature of the event has implications for AA766 and AA210. As already discussed, both individuals' impairments affected mobility. Being a part of a funeral procession arguably pressured AA210 and AA766 to walk publicly and as part of a group. JL describes this phenomenon of struggling to keep up when friends do not consider her shorter stride length. If a group was not considerate, both AA210 and AA766 could find maintaining the general walking pace difficult. A

persistent theme experienced by people with visible disabilities, like dwarfism, is the discomfort associated with people staring at them (Garland-Thomsen 2009; Pritchard 2021). A public event invites viewing, potentially providing an uncomfortable scenario where their difference is subject to visual inspection. JL also described being at arm swinging height and constantly having to dodge elbows and handbags from hitting her, again presenting a possible consequence of walking with a group for AA766. David Howe (2011) describes his persistent awareness of their difference, whilst running, particularly when being watched. Howe (2011) has a different gait, as does AA766. Their gait renders an activity like walking not just more physically demanding, but also mentally. AA766 may well have been hyper-aware of the ground surface, how they placed their feet, dodging around other people, whilst conscious of being visible.

Conclusion

The insights into disabled sensory experience discussed within this paper are small, however, they provide an extra dimension to the experiences had at Alington Avenue, and how disability manifested and was experienced there. The paper is a call to arms, demonstrating the potential of the field as well as its limitations. The interdisciplinary approach demonstrated is just one way that such insights can be gleaned. It is hoped that the paper may serve as a nudge to scholars working with the senses in classical studies to think about the variability of the bodies doing the sensing in their studies. Bodies are variable, one next to another and over the course of their existence; this variability is the norm.

The small insights gained can seem like little reward from a complicated approach, caveated by the limitations of our own embodiment and the material under study. Yet, the small insights can greatly influence the way which we consider the landscape and can make a big difference in promoting empathy and understanding with disabled people past and present.

The case study of AA210 briefly highlights the implications of common pathology on the sensory experiences had by people in the Roman past. Going further, AA210's experience perhaps challenges our perception of what can constitute a disability, and whether the non-disabled perspective is representative of the majority. With improving ageing techniques developing in osteoarchaeology, the older demographic is becoming more visible, and are surprising scholars by constituting 6–8% of past populations (Gowland 2016: 515). Rarely did people reach the age of 60 without experiencing prolonged pain (Laes 2018). Impairment, to some degree, is considered an inevitable part of getting older. Whilst the concept of stigma relating to visible disabilities has rightly been found to greatly influence the experience of disability, so too does being

overlooked. Whether an impairment is common or not, the consequences for the individual's experience and their haptic experience of the landscape can be greatly changed and affected.

Heather Hunter-Crawley (2019) described how the paradigmatic shift within classical sensory studies promised a more accessible and inclusive discipline. Disability scholarship as a discipline is embroiled in a fight for greater inclusivity and accessibility. Including consideration of the sensory experience of disabled people contributes to a more inclusive discipline still further. In so doing, it invites greater empathy and inclusion for modern people with disabilities. It is hoped that including disabled sensory experiences into classical sensory studies can contribute to this paradigmatic shift.

Abbreviations

RIB (2023) *Roman Inscriptions of Britain*. Available at https://romaninscriptionsofbritain.org/ [Last accessed 29 September 2023].

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Competing Interests

The author has no competing interests to declare.

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