

# Wealthy and Healthy? Methodological Approaches to Non-Élite Burials – An Introduction

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In order to discuss the question raised in our title – wealthy and healthy?<sup>1</sup> –, a number of disciplines is addressed. In accordance with our professional affiliation in ancient history (AB), archaeology (UK) and bioarchaeology (WRT), our common interest is to reflect social relations within ancient societies, and we aim at linking the capacities of material culture studies to social and natural sciences. The following chapters are spotlights on the interrelation of the archaeological record and wealth, health and social status in ancient societies. These introductory remarks are meant to outline the specific contribution that each of our fields is able to offer to funerary archaeology with respect to methodological approaches. At the same time, we want to emphasise the complementary character of these approaches in order to enhance the general objective of interdisciplinary studies.

## The Social Gradient of Health

Before we go into detail, we should have a look at contemporary epidemiology regarding the topic ‘wealthy and healthy’. In 2004, Michael Marmot published his path-breaking book ‘Status Syndrome’,<sup>2</sup> which is based on the famous ‘Whitehall Studies I and II’. In these, health and mortality of British civil servants, first males, later males and females,<sup>3</sup> was studied over longer periods.<sup>4</sup> The rank of the single individual in the hierarchy<sup>5</sup> of the British civil service was taken into consideration. While Whitehall I deals mostly with cardio-vascular diseases, Whitehall II has a wider focus and is called the “Stress and Health Study”.<sup>6</sup>

The most important finding was bad health in the lower ranks and better health in the top ranks – although all groups had approximately the same access to medical aid. Age and risk factors e.g. in coronal heart disease are of lesser importance than the differences between the ranks.<sup>7</sup> Health inequalities are not only the differences in health status between the rich and the poor. There is a consistent stepwise downgrading across the entire social spectrum: health is getting worse at each point as one descends down the social hierarchy.<sup>8</sup> This is particularly interesting for our panel, which deals with non-élite, but also non-poor burials. Here, health should be better than the one of poorer individuals. In contrast, health is poorer than in the élite.

Known as the social gradient of health,<sup>9</sup> this consistent relationship between health and social status has profound implications for each individual and each society. The social gradient in health is a universal phenomenon found at all points in the life course and in different population groups around the globe.<sup>10</sup> The social gradient is valid for

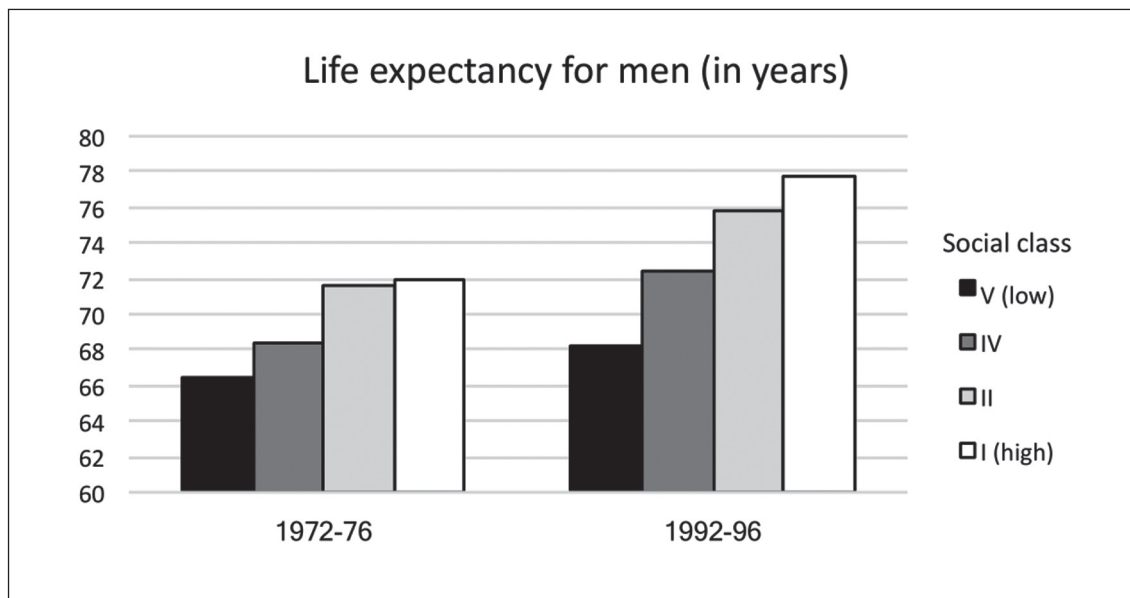


Fig. 1: Social determinants of health. Increasing life expectancy for males in England and Wales from low to high social classes. Data from Marmot 2004.

most diseases and health problems, probably with the exception of fast-acting infectious diseases like the Plague in the past – or influenza and Ebola in the present.<sup>11</sup> Public health research has highlighted that health inequalities are caused by the general conditions in which people are born, grow, live, work and age; the so-called social determinants of health.<sup>12</sup> In our example (fig. 1), we see the same trend on a different scale, however, for modern Australia and Vietnam. In his 2015 book the ‘Health Gap’,<sup>13</sup> Marmot is tackling ways out of health inequalities.

In 2015, University College London (UCL) and Public Health England published an illuminating booklet called “Social Inequalities in Oral Health: From evidence to Action”.<sup>14</sup> It is not surprising that the social gradient of health is also valid for oral health.<sup>15</sup>

These social determinants are not only valid for today, but also for prehistoric, ancient or medieval times. In 1996, Tarlov<sup>16</sup> made a first attempt to include data also from prehistoric, ancient and medieval times. However, this topic is quite underresearched in bioarchaeology.

Thus, it is quite important to deal with the human remains, which are first class bio-historical sources. As shown later, they can also inform us – at least partially – about the social status of the deceased.

### Funerary Archaeology

This said, our panel focusses on two main points: the burials and the aspect of non-élite. How can we identify non-élite burials based on the archaeological record? Taking on funerary archaeology means to reckon with the discrepancies between the portrayal of life and its reality in the interpretation of material culture. Not being related directly to social reality is a fundamental characteristic of representation.<sup>17</sup> Hence the prominence of semiotics<sup>18</sup> and image studies to determine rules of representation – especially strong in German research.<sup>19</sup> Moreover, in terms of methodology, quantifications tend to disregard manipulations of the dead as much as personal choices. Going back to ‘New Archaeology’, the Saxe-Binford-hypothesis claimed a straightforward correlation between dimension of and investment in status and wealth, respectively.<sup>20</sup> Confronting such approaches, Ian Hodder<sup>21</sup> and other advocates of post-processual archaeology have long since argued that in death, people often become what they have not been in life. Likewise, Ian Morris<sup>22</sup> stated that the lack of monumentality and burial riches bears no coercive argument for a low social status or a decrease in prosperity in an ancient society. He examined social structure using rituals as medium. Going even further, Mike Parker Pearson emphasised the varying individual investment into burial and declined ranking as a measure of social organisation.<sup>23</sup> A modern example from the main cemetery of Trier can illustrate these doubts on the Saxe-Binford-hypothesis on the correlation between wealth and status: one of the most remarkable tombs of the cemetery is a monument imitating an ancient temple (fig. 3a). The dimension and the style of the monument would suggest that the owner is a person of high status, wealth and classical education. Supposedly, one would not expect the profession which the inscription is revealing: the deceased, Henny and Heinz Wille, had been circus directors (fig. 3b).

In a rather parallel development, contextual archaeology thrived during the 1980s and 90s with Anglo-American research mostly guided by theory, while in German research empirical approaches prevailed, e.g. studies on the phenomenon of grave monuments of Roman time, situated along the main roads leading into the cities (‘Gräberstraßen’).<sup>24</sup> More recently, Pierre Bourdieu’s *habitus*-concept<sup>25</sup> has proven influential in various ways, not least in funerary archaeology.<sup>26</sup> Equally relevant is a longstanding discussion on the interrelation between structure and action based on Anthony Giddens’ theory of structuration.<sup>27</sup> Both are prominent in agency theories<sup>28</sup> that likewise counter a tendency to determine and simplify the relation between material culture, social complexity and burial ritual by also taking into account its situational character. Objects gain meaning within certain fields of action and may be related to beliefs, values and social structures. Observing variations for example in traditional rituals provides further insight into social change.<sup>29</sup> Hence the prominence of studies on funerary practices, many of them referring to the tripartite ‘rites de passage’ of Arnold van Gennep.<sup>30</sup> Excavation and scientific methods constantly open new horizons of data concerning these questions. Featured prominently in French ‘Archéologie funéraire’, the ‘gêstes funéraires’

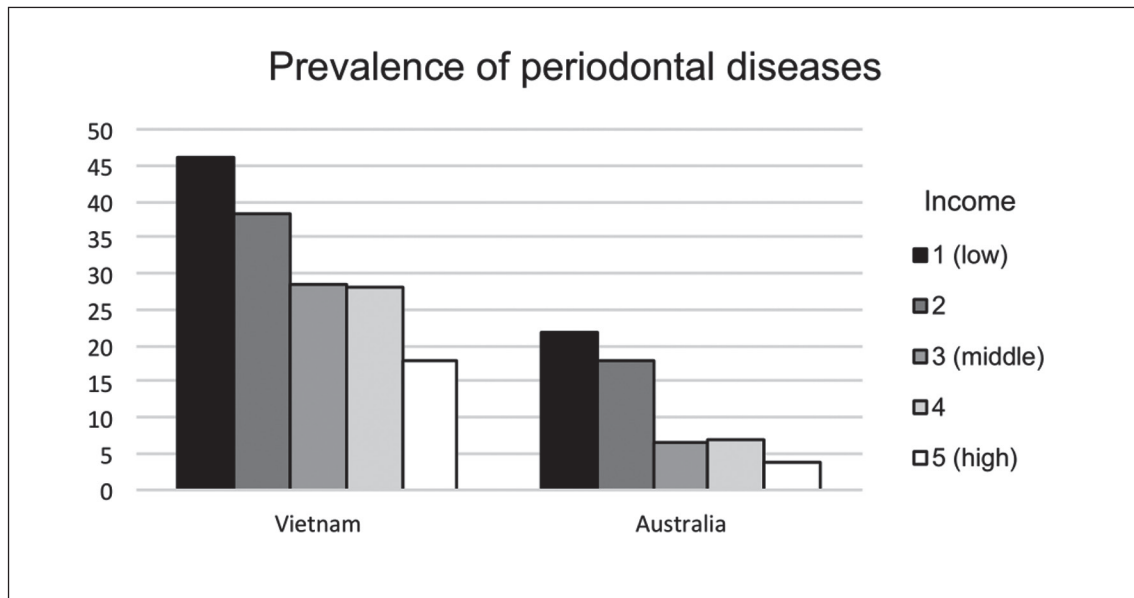


Fig. 2: Social determinants of health. Decreasing prevalence of periodontal diseases from low to high income people in modern Australia and Vietnam. Data from Watt et al. 2015.

rely heavily on these methodological extensions.<sup>31</sup> They also draw on the affordance and an ‘Eigensinn’ of things.<sup>32</sup> Accordingly, asking how funerary practices or monuments shape communities may result in tombs being not simply symbolic markers but real components of political actions and demonstrations of power, as Parker Pearson puts it.<sup>33</sup>

### Élite vs. Non-Élite? The Ancient Institution of Slavery as an Example

Such considerations relate rather easily to élite grave monuments. But what does élite or non-élite actually mean? Is it the difference between rich and poor? Non-élite burials are not necessarily poor burials. But does that mean that rich burials are synonymous with élite burials? As a result, the obvious questions are: How does economic value translate into social standing? How do health conditions of the deceased reflect on their social status – are only the wealthy healthy? Here, the concept of the social gradient of health is helpful: in general, the élite has the best health, as can be seen in several élite burials studied from a palaeopathological point of view.<sup>34</sup> According to the “Osteological Paradox”,<sup>35</sup> this group shows a high frequency of stress markers. Due to their resources, access to medical aid and other commodities, the infants and children of the élite survived critical periods in infancy and childhood – while the infants and children of socially inferior groups died more often. At the other end of the social spectrum are

free workmen and slaves. Their burials are underresearched, but according to slave burials of the 15<sup>th</sup> to the 19<sup>th</sup> century,<sup>36</sup> a high degree of physical load should be expected. People of an urban civic sphere should be in between – just like it is indicated by the health status of the deceased from the Roman south-eastern necropolis at Pergamon.<sup>37</sup>

The institution of slavery is an excellent example to examine the problematic relationship between material culture, health and social status. In principle, you find slaves everywhere – they were present in all areas of Greek and Roman life. They were present, but were they also represented? Were slaves visible at all? What was their archaeological/material record? How far were slaves integrated into ancient societies? How far excluded? Were they really socially dead, as the famous sociologist Orlando Patterson<sup>38</sup> once stated?

Slaves are the best examples of legal and social inequality in antiquity – but in analysing the depictions of slaves on funerary monuments or the burials and funerary monuments of slaves, we must realise that in practice, there can be a huge gap between the slaves' legal and social status and their representations – and this leads to the second aspect of the panel.

Representations of slaves are often exploited by their owners. Their number, their appearance etc. reflect on the wealth and status of the master. Then again, representations can also underline the social gap between master and slave; they can visualise the slave's alienation: slaves are 'the others'. They can be ugly and deformed or characterised by their exotic appearance.<sup>39</sup> In their own grave monuments, slaves choose to show their integration – they try to adapt to the style of their masters or they illustrate their hopes during their lifetime. Here, we have a good example for the above-mentioned manipulations of the dead and their personal choices. However, it also depends on the personal choices of the masters where and how slaves are buried: sometimes, they find their final resting places anonymously in mass burials, sometimes they have their own – often modest – burial in the family grave or in the catacombs of wealthy families, sometimes they get their own – sometimes even exceptional – funerary monument: with inscription, portrait etc. It depends on their value for and the relationship with the master. In these cases, the slaves social, relational and situational agency is essential.<sup>40</sup>

Even more interesting are the burials of freedmen who hold the Roman citizenship and are often wealthy persons. A prominent example is the monumental tomb of Marcus Vergilius Eurysaces near Porta Maggiore in Rome (40/30 BC). This freedman proudly stated to be a baker (fig. 3), the owner of a large-scale bakery. Judging from his tomb, he made an immense fortune with his profession. According to his legal position and birth, he belonged to the *humiliores* (the 'lower classes'), but according to his wealth to the *honestiores*, the 'upper class'. Yet these freedmen often remained second-class Romans. Their wealth and their social standing do not correspond at all. For Cicero, the workshop was irreconcilable with the condition of a free man (*de officiis*, 1.42).<sup>41</sup> Here speaks the arrogance of the Roman aristocracy. Roman society ridicules such characters as for example Trimalchio, the extremely rich and extremely uneducated freedman in



Fig. 3: Trier, Main cemetery. a. Funerary monument imitating an ancient temple. b. Funerary inscription specifying the profession of the deceased: Henny and Heinz Wille had been circus directors.

Petronius' novel "Satyricon". In their own representations, freedmen try to adapt to the Roman citizens. Their funerary monuments are overrepresented in comparison to those of 'normal' Roman citizens. Thus, freedmen try to compensate for their inferior social status: they perform euergetism by donating monuments or they are acting as priests in the cult for the emperor. Freedmen are the classic example for a correlation between dimension of a grave/burial and wealth, but not of status. Thus, rich burials can be an evidence of an economic élite, but not necessarily a social élite. From a historical point of view, the importance of a social contextualisation of burials is evident.<sup>42</sup>

### Social Stratification in Antiquity

This brings us back to the final part of the title: to non-élite and non-poor burials, respectively. While social practices are especially tangible in archaeological terms, concepts of the organisation and structure of ancient societies originate from socio-historical terminology. This often led to class-based stratified models of ancient society, as the well-known pyramidal model of Roman society in Early Imperial time by Géza

Alföldy shows (fig. 4).<sup>43</sup> Criticising this model, Friedrich Vittinghoff<sup>44</sup> stated that the main difference between modern and ancient societies was a generally accepted legal inequality. Based on his view, Aloys Winterling's model of social stratification changes basic notions of ancient society.<sup>45</sup> In contrast to modern times with a functional division of society into an economic, political, religious etc. sphere, ancient social stratification evolves along the lines of status, honours and lifestyle. Consequently, in a competitive society, changes in wealth distribution potentially threaten the social order. Income-based power relations, e.g. performing euergetism, may support political integration, but large accumulations of wealth may result in political disintegration. This model of social stratification is consistent with ancient sources and related topics in archaeology – a well-documented example being the Roman *domus*.

So again, how can we specify non-élite versus élite burials? The analysis of ancient societies beyond the political system, leading actors and élite groups relies heavily on the archaeological record. Abundantly preserved burial sites present a major part of ancient testimonies. Yet research on élite grave monuments is rather extensive, while the evaluation of numerous less conspicuous burials in the Classical world remains wanting. Furthermore, apart from terms like 'middle class burials', which are caught up in outdated models of society, we often lack a suitable terminology to refer to social groups. You may also recall the 'arte plebea' of Ranuccio Bianchi-Bandinelli.<sup>46</sup> Focusing on 'communities' and the individual's role within social complexity while approaching social agents outside élite and prominent social circles helped to counterbalance top-down institutional structures, thus creating a nexus of ideological and cultural values.<sup>47</sup> However, even refraining completely from any ranking and aiming towards an 'archaeology of marginality' leaves much room for interpretation. Correspondingly, not considering these related limitations will certainly backfire in any type of quantification.

### Social Status in Bioarchaeology

While methodological scrutiny is crucial in dealing with archaeological material, an independent approach is more than welcome. Exactly this is provided by the determination of the social status of a skeleton or of the cremated remains of an individual buried on an ancient cemetery – yet again, this approach has its own pitfalls, as we shall see in the following paragraphs.

Cemeteries of known social status can serve as a form of grading tool in palaeopathology (fig. 5). For antiquity they are, however, rare or non-existent. The best examples for our task are churchyards from the 17<sup>th</sup> to the 19<sup>th</sup> century with historically known social status, e.g. from London. Here, we can clearly see differences but also similarities in disease patterns in populations of different social statuses (fig. 6).

In prehistoric times and antiquity and also in the early Middle Ages, élite burials can be detected quite easily.<sup>48</sup> They are, however, rare and often robbed shortly after the



Fig. 4: Rome, Monumental tomb of Marcus Vergilius Eurysaces near Porta Maggiore (40/30 BC), baker and freedman.



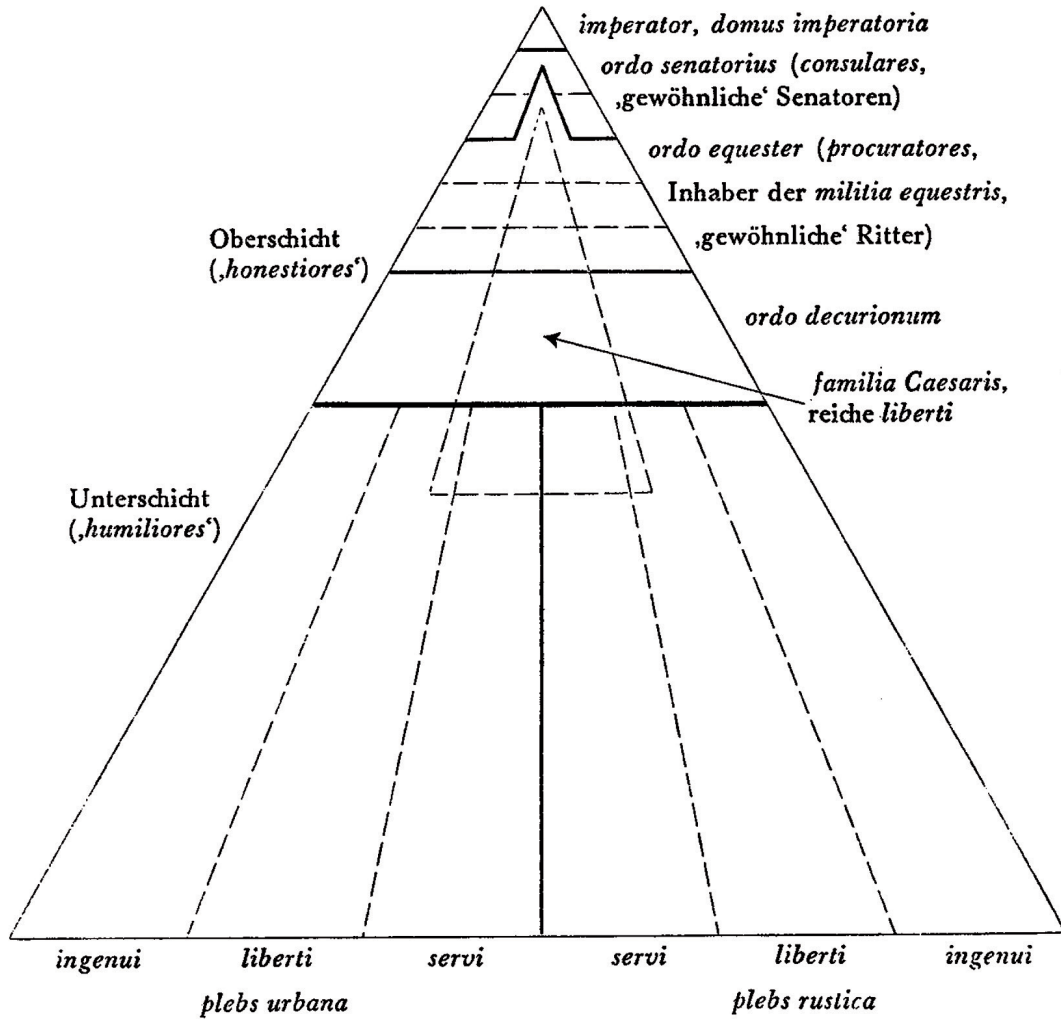


Fig. 5: Pyramidal model of Roman society in Early Imperial time by Géza Alföldy.

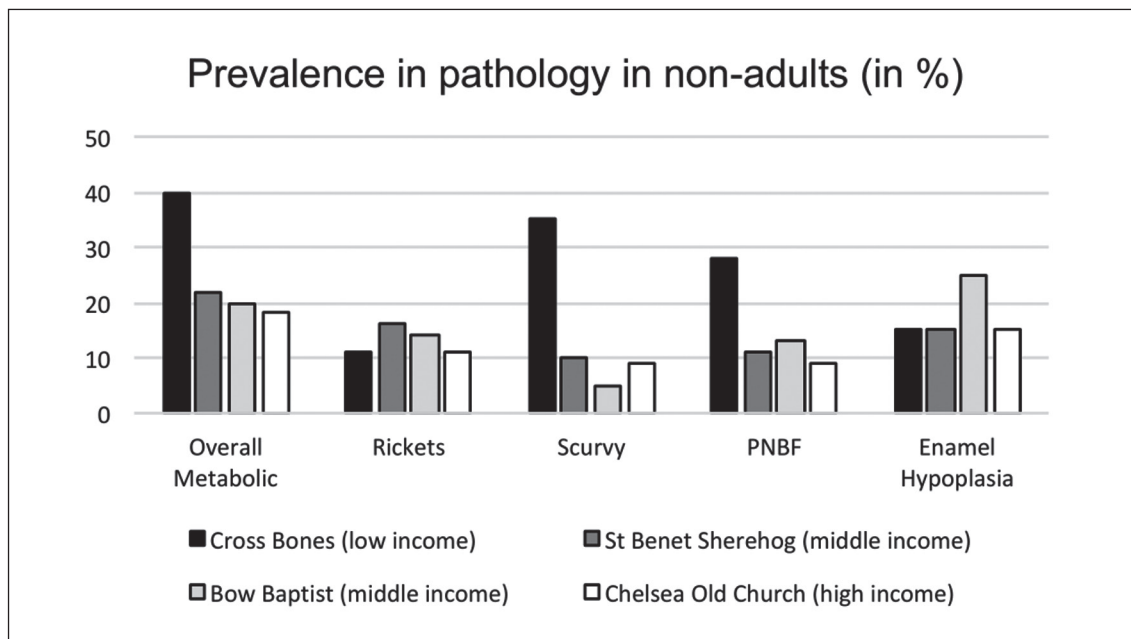


Fig. 6: London, Churchyards from the 17<sup>th</sup> to 19<sup>th</sup> century AD with historical known social status. Prevalence of metabolic diseases, rickets, scurvy, PNBF = periosteal new bone formation, and enamel hypoplasia. Data from Newman – Gowland 2016.

burial or in later times. In several or most cases, therefore, no human remains are preserved. If they are, their preservation status is often poor, e.g. due to ancient sarcophagus burials.<sup>49</sup>

For late antiquity, we have a sample of élite burials – at least in part on the senatorial level – from the cemeterial basilica Trier St. Maximin<sup>50</sup> (n = 50) with differing bone preservations. They are presently studied by one of the authors (WRT).

Ranking non-élite burials is difficult, in particular when no grave goods are present. In this case, the skeletons themselves could be a source for social interpretation, especially when diet is considered. Diet is a particularly interesting indicator for social status. Bread is a wonderful example: from antiquity onward, up to the middle of the 20<sup>th</sup> century, fine white bread (of fine grinded flour; *panis candidus*) was typical for the élite.<sup>51</sup> It causes less dental attrition – in contrast to *panis secundarius* of middle quality or the rough flour consumed by the “normal” population in form of the *panis acerosus* or *plebeius* or *rusticus*.<sup>52</sup> Diet, therefore, leaves traces also in the osteoarchaeological record, either macroscopically (e.g. in bone development, dental diseases, and so on)<sup>53</sup> or in the composition of the stable isotopes (<sup>13</sup>C, <sup>15</sup>N, <sup>34</sup>S) in bones.<sup>54</sup> Due to different turnover rates, bones are giving an overall picture of the diet of the last five (ribs) or 10–20 years (long bones).<sup>55</sup> The consumption of animal protein either in form of meat or fish is reflected by an elevated  $\delta^{15}\text{N}$  content (meat) or an elevated  $\delta^{13}\text{C}$  and  $\delta^{34}\text{S}$  content (marine resources) (fig. 7).

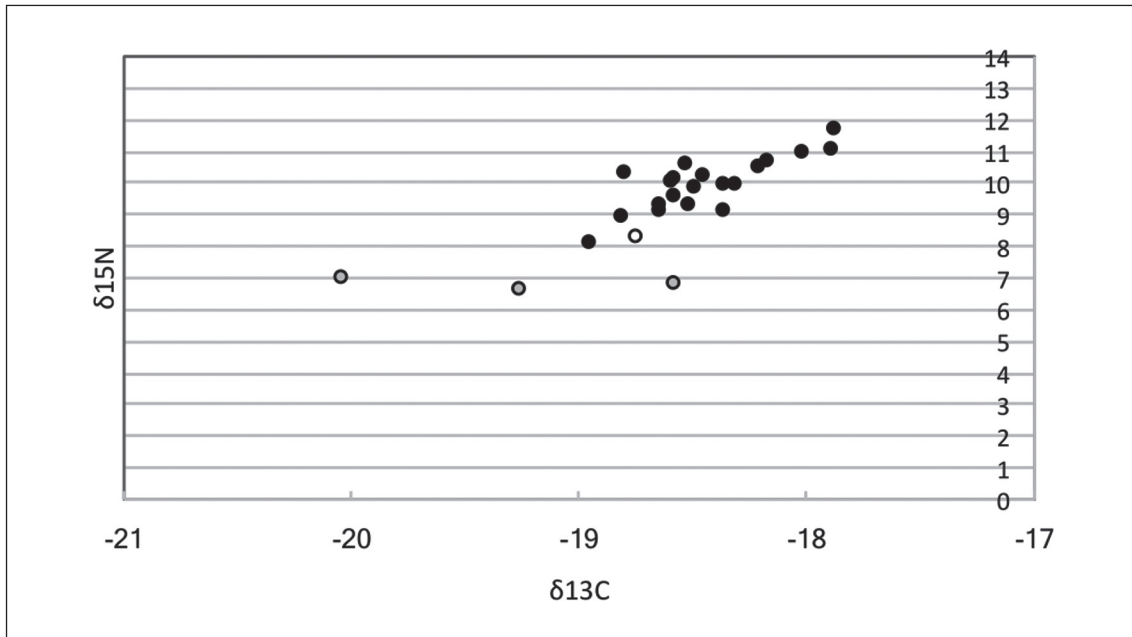


Fig. 7: Pergamon, South-East Necropolis. Stable carbon and nitrogen isotopes for diet reconstruction. Black circles: humans, white circle: dogs, grey circle: cattle, sheep, pigs. Mainly herbivorous diet:  $\delta^{15}\text{N}$  6–9.8, mainly carnivorous diet:  $\delta^{15}\text{N}$  9.8–10.8, marine input or foreigners:  $\delta^{15}\text{N}$  >10.8. Data from Propstmeier et al. 2017.

Furthermore, meat<sup>56</sup> and fish<sup>57</sup> consumption is strongly dependent on wealth, as Diocletian's edict of maximum prices (*edictum de pretiis rerum venalium*) from 301 AD also indicates.<sup>58</sup> Here, we see different prices for different species. The age of the animals bought for slaughter is also of importance (young vs. old). Archaeozoology can determine this directly by examining the waste from houses of different social categories.<sup>59</sup> Written sources from ancient literature (e.g. *cena Trimalchionis*, see below), medicine (e.g. Galenus) or law add further information.

From an osteological point of view, we can deal with two sources: data deriving from archaeozoological analysis (consumed meat and fish) and stable isotope data on the consumers' side.

For the poor, we will expect a diet mostly based on plant products. Meat was probably only available during religious or political feasts. The well-known Mediterranean Trias consists of pulses (barley) or bread as carbohydrate source, olive oil as fat source and beans as the most important plant-based protein source. The famous 2<sup>nd</sup> century physician Galenus, who has influenced Old World medicine up to the middle of the 19<sup>th</sup> century, described the above-mentioned barley-bean-soup as a strengthening diet for (Pergamene) gladiators.<sup>60</sup> Liquids were water, diluted vinegar or wine and beer. The first and last are posing notable health hazards due to contamination by micro-organisms, especially in summer.

Body height, calculated on the basis of the length of long bones, is an important indicator of protein intake for populations in past and present. Here, we can see that the average height of people from non-élite burials is some centimetres lower than that of the élite itself (cf. table 1).

Lower body height can also derive from long bone bending – pathognomic for vitamin D-deficiency – rickets. In the early 2<sup>nd</sup> century AD, Soranus from Ephesus reported in his *Gynaikeia* (2.43sq.) that rickets was frequent in Rome. Galenus (XI 164) wrote: “the women, namely mothers, remained indoors, neither engaging in strenuous labour nor exposing themselves to direct sunlight”.<sup>61</sup> In the osteoarchaeological record, evidence for rickets in ancient times is quite rare. Nevertheless, we can conclude that in the populous Roman quarters, inadequate alimentation and scarce exposure to sunlight were common, which resulted in rickets. These quarters were dominated by *insulae* with high buildings, where little sunlight reached the streets, the flats and the courts.

Galenus’ observation was probably regarding the ‘upper class’. In the Italian Renaissance, rickets was also common in children from the élite, taking the Medici children as an example.<sup>62</sup> As we know from 18<sup>th</sup> and 19<sup>th</sup> century Europe, rickets was very common in the ‘lower classes’, but also not uncommon in the ‘upper class’ (fig. 6).<sup>63</sup> Here, infants and children, often females, were kept at home. We can observe the same today in the Near East, where particularly rich girls suffer from rickets.<sup>64</sup>

On the basis of the three status groups of early medieval Merovingian society, defined by Rainer Christlein on grave goods,<sup>65</sup> Michael Schultz established for example otitis media and transverse enamel hypoplasia as diseases of the poor.<sup>66</sup>

Today, we have a broader view. Enamel hypoplasia is not only found in poor people, but also quite often in members of the élite and the ‘middle class’.<sup>67</sup> With the help of enamel hypoplasia and other unspecific stress markers like root hypoplasia/periradicular bands and the so-called Harris’ lines, it is possible to reconstruct the circumstances of the childhood even in human remains of adults.

It is interesting to compare the years of their development (generally between the first and the seventh year of life) with the mortality rates. Considering poorer people, there often is a higher mortality compared to a higher morbidity in wealthier people. This means, wealthier people had much more resources available than their poorer contemporaries.

Firstly, this means regular and sufficient meals. There is a particular difference between the poor and people with middle or high income. For the poor, there are also (periods of) starving. Secondly, wealthier people experience less psychic stress about the next meal. From studies in modern societies, we know that this can also be a crucial factor in health. Thirdly, better nutrition including proteins and vitamins is leading to better health, but also to better development, e.g. larger body height.<sup>68</sup>

Inflammatory processes of the paranasal sinuses can be found as well in the élite (like Pergamon İlyas Tepe<sup>69</sup> or Trier St. Maximin<sup>70</sup>), as in the middle (e.g. Pergamon SE ne-

ropolis)<sup>71</sup> and lower ‘classes’.<sup>72</sup> They are reflecting insufficient heating both in palaces and in huts, but also bad cooking conditions due to fumes in the houses of ‘middle and lower classes’.

### Social Mobility and Stereotypes

There are more aspects to consider. In consequence to what we said above, we have no easy way to correlate wealth, health and social status. Neither does a straightforward correlation between archaeological assemblages and social status exist, nor do bad health conditions imply low status. This leads us back to the fictional personality of the freedman Trimalchio. In his novel, Petronius is describing a luxurious feast the freedman Trimalchio is giving. Trimalchio is trying to imitate the lifestyle of the Roman élite, but by exaggerating the sumptuousness of the dishes, he proves that he is not belonging to the élite. The display of food luxury was considered vulgar. The ideal Roman way of life – though not necessarily the reality – was oriented towards the old custom, the *mos maiorum*. Part of this custom was a certain austerity which also concerned the diet consisting of bread, olives and figs. This example shows that the diet was also part of an élite identity. By the way of life and the type of diet, the cultural and social affiliation could be defined. In theory, the Roman élite was living on a frugal diet – but the literary and osteoarchaeological evidence draws quite a different picture.<sup>73</sup>

As bioarchaeological analysis has proven, wealthier persons were better nourished and enjoyed a better medical care. However, in this case we have to take the social context into account. Slaves are again a good example: the bones of slaves and workmen can show signs of hard physical work – but slaves in wealthy households were certainly better nourished than poor workmen. Also in this case, we see a clear correlation between health and wealth, but not between health and status.

Just like the ambivalence between traditional ideals and realities of life leaves room for diverse lifestyles, the mere existence of monumental grave monuments for freedmen demonstrates that at least in Roman Imperial time there was space for a limited social mobility. Another example revealing the complicated relation of wealth and status is given by the ‘phrygiones’, as embroiderers were called since the 2<sup>nd</sup> century BC.<sup>74</sup> Their social standing offers a potential for social integration and discrimination. Since the Bronze Age, textile production is connected to the lower classes and to the élite, as chronicled in the tales of Homer or in images like the early Iron Age *tintinnabulum* from Bologna (fig. 8).<sup>75</sup> In the Iliad, Helena – at that moment wife of the Trojan prince Paris – is embroidering a purple cloak.<sup>76</sup> According to Plinius, who himself was referring to Homer, the Phrygians invented this craft, and he called such garments ‘*phrygioniae*’.<sup>77</sup> Eastern garments were precious and Greeks knew them as βαρβάρων ὑφάσματα; they were associated with luxury and opulence.<sup>78</sup> Phrygians not only appeared in the Iliad, but were often collectively identified with the Trojans.<sup>79</sup> Originating in the barbarian



Fig. 8: Bologna, Necropolis at the Military Arsenal, grave 5. Early Iron Age *tintinnabulum* with display of a female of rank spinning (left) and weaving (right).

stereotypes of Athenian society from the 5<sup>th</sup> century BC onward, the Phrygians were thus counted among the ancestors of the Romans, whom Ovid (*Met.* 15.444) called ‘grandchildren of the Phrygians’. Yet, for Greeks and Romans, real-life Phrygians were mainly slaves. Therefore, ‘*phrygiones*’ evoked on the one hand eastern barbarian stereotypes and social inferiority and on the other hand the heroic ancestors of the Romans who traced their origin back to the Trojan Aeneas.

### Summary

To sum up, there is a strong correlation between wealth and health in antiquity. This relation is easier to quantify than the correlation between health and social status. However, human bones are included in burials, too, and burials with their grave goods and other remains are far from simply being a mirror of past lives, as funerary archaeology has worked out during past decades.<sup>80</sup> The bones of the deceased are, however, first-class bio-historical sources. They can mirror the social status via diet and health (cf. table 1). Animal protein consumption is mostly wealth-dependent and can be studied via stable isotope analysis (C, N, S). Protein-rich diet results also in a greater body height. Dental attrition is dependent on the food consumed and in particular on the quality of flour, bread and pulses. All these markers are listed in table 1.

	non-élite burial	élite burial
Average adult age	< 40 y	> 40 y
Average body height (males)	< 168 cm	> 168/170 cm
Hygiene	poor	fairly good
Nutrition	mostly plant based (low <sup>15</sup> N, low <sup>13</sup> C)	protein-rich like meat, fish (high <sup>15</sup> N, high <sup>13</sup> C)
Dental attrition	severe	moderate
Degenerative joint diseases	severe	moderate
Schmorl's nodes	beginning in juveniles, young adults	> 40 y
Enthesopathies	common	less common
Fractures (only civilians)	common	less common

Table 1: Osteological differences between non-élite and élite burials.

As our peer reviewer rightly pointed out, we did not define archaeological correlates offering general distinctions between social groups such as non-poor or slaves, who supposedly were all part of the large group of non-élite. Our main goal was to pinpoint problems surrounding such definitions and to offer some perspectives in using archaeological, bioarchaeological and historical sources for a better understanding of social groups in ancient society.

We hope it became quite obvious that we need a mixture of criteria to identify non-élite burials. Or to put it another way: one has to be careful not to base the interpretations on preconceptions. However, we should not finish without a recommendation on how to approach the materiality of death in the light of the considerations drawn here. Fredrik Fahlander and Terje Oestigaard (2008) present a list of seven issues how to analyse funerary contexts: 1) the materiality of the body: inhumation or cremation, analysis of the bones etc. 2) the materiality of practice: the rituals – remains of fire, burnt human bones, ceramics, food offerings; position of the bones – careless interment or careful alignment of the bones 3) the materiality of the interments: personal belongings and grave gifts, 4) the materiality of the memory: the monument 5) the materiality of social change: hierarchies and heritage 6) the materiality of age, sex and gender and 7) the materiality of eternity.<sup>81</sup>

In archaeological terms, working with non-élite burials not only attempts to establish the stratigraphy, chronology and mortuary practice at a site but also to evaluate them

regarding the social persona and lifestyle of the deceased as much as the ideology of the descendants expressing their beliefs through the burial process. It is precisely the focus on context analysis – preferably aiming beyond the funerary sphere – that constitutes the importance of case studies.

### **Some Introductory Remarks on the Contributions in these Proceedings**

Eight papers by a total of nineteen authors were delivered in our panel “Wealthy and Healthy” at the AIAC conference at Bonn. Due to various causes, not all of them were submitted. All papers submitted went through a peer review process, including our introduction.<sup>82</sup> The following paragraphs provide some background on the papers and their main authors.

As part of his ongoing dissertation project, Christian Briesack from Bonn University – at the same time one of the coordinators of the AIAC event in Cologne/Bonn in 2018 – is examining the Archaic necropoleis of the Etruscan city of Orvieto in Italy. He is analysing standardised chamber tombs shaped like large cubes in relation to so-called fossa graves for single burials. Interestingly, members of the same *gens* may be buried in either grave type. Taking into account grave goods in both grave types, the main aim of Briesack’s study is to evaluate the economic investment into a burial with respect to the social status of the deceased. In spite of some differences in the grave furnishings, his preliminary results indicate – for both grave types – an extension of functionalities in the spectrum of grave goods. While the importance of this development for the social status of the deceased remains undetermined, the economic value of the grave goods seems to be of minor consequence. Thus, this study is a pertinent reminder that burial efforts are only suggestive of the social status in relation to manifest ideologies and objectives behind particular burial customs.

In her analysis of social inequality based on funerary remains, Konstantina Chavela – curator at the Archaeological Museum of Patras – gains significant insight by reaching beyond the funerary sphere. Taking the Archaic settlement and cemetery at Toumba Thessaloniki in the Thermaic Gulf as reference point, she is able to identify some discrepancies in the ethnic interpretation of richly furnished graves. Some pit graves and a few sarcophagi found in two clusters in the necropolis of Toumba stand out due to the presence of gold artifacts and some exotica like amber beads. Close similarities of the funerary practices east and west of the river Axios, including well-known sites like Sindos and Archontiko, were interpreted as an indicator of the presence of Macedonians.<sup>83</sup> The transformation of Macedonian funerary rites around 570 BC has been traced to the use of idiosyncratic feasting sets and gold mouthpieces and masks. Questioning these elements as indicative of the self-awareness of Macedonians, Chavela draws attention to the Archaic settlement with some substantial storage facilities attached to particular domestic units with a concentration of feasting sets in these units. Instead



of an ethnic interpretation, she favours a view that considers such traits as signs of an internal social differentiation with newly emerging social groups. Accordingly, similar burial customs in the region are attributed to a common cultural environment without endorsing ethnic origins known from later sources.

Angela Pencheva is working on gilded funerary wreaths of mixed materials. The paper is a summary of her dissertation at the Humboldt University Berlin. Such wreaths are often locally produced replicas of gold wreaths which mostly originated in workshops in Macedonia. Compared to the golden specimens they are often associated with in burials, the material value of the gilded replicas is less significant. However, they are far from being a lesser substitute in less prosperous graves. Their diameter is larger than that of an actual headdress and their importance lies in number per burial and in their ritual function in the commemoration of the dead. The author's analysis of burial contexts in Macedonia and Thrace from the 4<sup>th</sup> to the 2<sup>nd</sup> century BC has led her to the hypothesis of the existence of a *normalised* model for elite burials of the time. Weaponry, symposium vessels and wreaths are fundamental elements and attest to a *cultural code*. Thus, referring to the military status of the deceased, written sources and iconographical studies in Macedonian chamber graves and the chronological and regional distribution of these wreaths underline their prominence in burial customs modelled on Macedonian royal ideology. Representing a military elite, the use of gold and gilded wreaths travelled far in the Hellenistic world.<sup>84</sup> However, the combination of gold and gilded wreaths and the corresponding ideology of the hetairoi was not obligatory, as Pencheva highlights based on the necropoleis of the Black sea Greek apoikia.

As an ancient historian, Vasiliki Brouma has written her PhD on Hellenistic Rhodes. In her paper, she chose a material-centred contextual approach to funerary economics on the island. Her focus is a case study related to the *koina* (associations) of foreigners and their burial provisions by taking into account the epigraphical evidence for *koina* and examining inscriptions reporting funerary provisions of the associations for their members and benefactors. Of special interest are two documents which have been found *in situ* within actual grave plots. Stressing the importance of the funerary symposium and the notion of euergetism, she reflects on various economic aspects of the funerary ritual, such as individual and collective choice in the socioeconomic setting of Hellenistic Rhodes.

Hale Güney is an epigraphist from Turkey and currently surveying a region in central Anatolia, in the north of ancient Phrygia. The examples chosen for her presentation – the necropoleis of the villages of Dinek, Otluk and Gürleyik in northeast Phrygia, respectively – demonstrate the potential of systematic research in this area. The survey in remote locations with architectural remains mostly on site offers a unique opportunity to observe grave monuments which include door façades or so-called doorstones within their original setting. The 'doorstone' habit, as Güney calls it, is widespread throughout but not at all limited to Phrygia. Out of more than 1000 known 'doorstones' and door *stelai* found in Phrygia, only very few have been associated with

their architectural context.<sup>85</sup> The known monuments suggest that the door motif was popular for different grave types of various dimensions, showing a distinctive regional pattern. Roughly speaking, grave types with door façades were popular for prestigious monuments in western and central Phrygia in the 1<sup>st</sup> century AD. During the 2<sup>nd</sup> and 3<sup>rd</sup> century AD, they were also adopted as grave markers and built tombs in eastern Phrygia, while in urban centres of the western parts, wealthier families favoured more lavish grave models. The survey conducted by Güney in northern Phrygia is not least a case study to test the hypothesis of one of us (UK) who connected the ‘doorstone’ habit to the urban development of the wider region.<sup>86</sup>

The eastern part of the Po river plain and in particular the ancient *Regio X (Venetia et Histria)* was a centre of Roman textile industry. For several years, different departments of the University of Padova have been conducting intensive research in textile archaeology. Under the directorship of Maria Stella Busana, the project PONDERA dealt with archaeological findings for textile production (e.g. spindle whorls and loom weights), and the TRAMA project studied organic textile remains with the aid of scanning electron microscopy. Lastly, the LANIFICA project is studying both tools from burials and the human remains of people possibly working in textile production. The paper by Maria Stella Busana, Alessandro Canci and Cecilia Rossi is giving an overview about first results of this project. Project partners are the University of Cambridge (United Kingdom) and the University of Salento (Lecce, Apulia). While Busana and Rossi are dealing with the archaeological part, Canci is responsible for the anthropological/palaeopathological approach.

As shown by one of us (WRT), women, also of rank, are generally showing a higher degree of degenerative joint diseases in the wrist joint as men.<sup>87</sup> This is very likely due to textile production. At least since the Bronze Age, this was also a distinguished employment for women of rank. For the early Iron Age this is impressively documented on the so-called *tintinnabulum* from Bologna (see above fig. 8). Here, both spinning and weaving is on display as a distinguished task of a woman of rank.

In their paper, Maria Stella Busana and co-workers are giving a short overview of the data bank used in the PONDERA and also the LANIFICA project, which is coupled to a Geographic Information System (GIS). This allows a cartographic display of several artefact distributions (Busana et al., fig. 1). The paper summarises the results of the PONDERA project, giving typology and weights of spindle whorls (Busana et al., fig. 2) and loom weights (Busana et al., fig. 3) from Roman *Venetia*.

The most important and quite new approach is the analysis of skeletal markers correlated with textile work. This comprises non-masticatory use of the dentition, as described by Catullus in his *carmen* 64, 311–319. Bucco-palatinal (in the upper jaw) or bucco-lingual (in the mandible) running grooves on the occlusal surface of the teeth can be correlated with wetting and cleaning of fibers (Busana et al., fig. 6).

Enthesopathies on the proximal femur and anatomical variants on the knee cap can be correlated with sitting postures (Busana et al., fig. 7). Not used by Canci are the

degenerative changes in the wrist joints, which are giving important information about repeated movements of the hands. Dust and working in dark environments could have favoured tuberculosis infection, seen as Morbus Pott in the spine (Busana et al., fig. 8).

To sum up, this paper is an instructive example for an interdisciplinary approach of archaeology and osteoarchaeology and a step forward in integrative textile archaeology.

Ricardo Fernandes is a physicist, specialised in isotope analysis. He and his colleagues from the Max Planck Institute for the Science of Human History at Jena and several institutions from Rome presented a paper on human diet. It could, however, not be submitted for the present publication.<sup>88</sup> There is only an extended abstract. Analysed were approximately 30 inhumation burials from the late Roman villa at Centocelle outside ancient Rome. All burials were radiocarbon dated.<sup>89</sup>

This paper showed new access to dietary data from human bones. Carbon and nitrogen stable isotopes were determined and then analysed using the FRUITS technique.<sup>90</sup> Furthermore, the isotope signals of single amino-acids were studied. Special preparation of the bones with slow collagen extraction revealed higher amounts of collagen in badly preserved skeletal remains. The new techniques are giving more detailed insights in ancient diets as “classical” stable isotope studies.

## Notes

<sup>1</sup> Recently, wealth and health are quite frequently discussed in Classics (see Jongman et al. 2019).

<sup>2</sup> Marmot 2004. Here, the first paperback edition is used, which contains a new preface from June 2015.

<sup>3</sup> Marmot 2004, 38.

<sup>4</sup> Whitehall I (1967–1969; Reid et al. 1974), II (1985–1988; Marmot et al. 1991). Whitehall II has concluded the 12<sup>th</sup> phase at the end of 2016 (<https://www.ucl.ac.uk/iehc/research/epidemiology-public-health/research/whitehallII>; last access 26.02.2019).

<sup>5</sup> From top down: administrators, executives/professionals, clerical and office support grades (Marmot 2004, 39).

<sup>6</sup> <https://www.ucl.ac.uk/epidemiology-health-care/research/epidemiology-and-public-health/research/whitehall-ii> (last access 26.02.2019).

<sup>7</sup> Marmot 2004, 45 fig. 2.2.

<sup>8</sup> E.g. Syme 1998; Marmot 2004; 2015 (with further references).

<sup>9</sup> Marmot 2004; 2015.

<sup>10</sup> See in detail in Marmot 2015.

<sup>11</sup> For influenza cf. Tripp et al. 2018, 235. However, the poverty complex (overcrowding, poverty, unemployment, malnutrition) can trigger the spread of highly infectious diseases, as we can see in the actual Covid-19 pandemic (cf. Paremoer et al. 2021).

<sup>12</sup> Adapted from Watt 2015; see in detail Marmot 2004; Marmot 2015.

<sup>13</sup> Marmot 2015.

<sup>14</sup> Watt 2015.

<sup>15</sup> This can easily be observed in the workmen on archaeological excavations in the eastern Mediterranean – but also in the general decline in oral health since the first “health reform” in Germany in 1989.

<sup>16</sup> Tarlov 1996, 76 Table 5.1.

<sup>17</sup> E.g. Barlösius 2004, 238.

<sup>18</sup> With reference to literary studies of Roland Barthes (1988).

<sup>19</sup> In general, see Schneider et al. 1979; Hölscher 1987; Bergmann 2000; Lorenz 2016, 101–166. For funerary archaeology e.g. Kockel 1993; Bergemann 1997; Fabricius 1999; Sojc 2005. For a fundamental criticism of these approaches, see Bielfeldt 2014, esp. 21–23.

<sup>20</sup> Saxe 1970; Binford 1971. ‘New Archaeology’ vehemently opposed cultural archaeological approaches. For previously influential ideologies and concepts see Veit 1984. The criticism of an assumed linear relation between the static archaeological record and dynamic behavior in ancient times (e.g. between depictions of and real everyday life) resulted in the development of ‘middle range theories’. Addressing and bridging this gap remains a challenge in archaeological interpretation.

<sup>21</sup> Hodder 2000.

<sup>22</sup> Morris 1987; Morris 1992.

<sup>23</sup> Parker Pearson 2005.

<sup>24</sup> Zanker – von Hesberg 1987; Heinzemann 2000. These approaches mostly drew on hermeneutic methodology, see Giuliani 2003.

<sup>25</sup> Bourdieu 1984; Bourdieu 1985.

<sup>26</sup> E.g. Perego – Scopacasa 2016; Borg 2019.

<sup>27</sup> Giddens 1979; Giddens 1984.

<sup>28</sup> Dobres – Robb 2000; Gardner 2008; Robb 2010.

<sup>29</sup> E.g. Kistler 1998; Hofmann 2008.

<sup>30</sup> Van Gennep 1907/1999.

<sup>31</sup> Duday 2009; Duday 2012; van Andringa et al. 2013.

<sup>32</sup> Hofmann – Schreiber 2011; Hahn 2014. In general on new perspectives in the field, see Harris – Cipolla 2017. These more recent approaches are not least supported by a material turn in the humanities and social sciences.

<sup>33</sup> Parker Pearson 2005, 193. Aiming to show the symbolic occupation of urban environs e.g. Pirson 2008; 2012. Drawing on cognitive studies, funerary monuments may also be seen as part of visual regions, see Williamson 2016, esp. 88.

<sup>34</sup> Cf. Teegen 2011; Teegen – Schultz 2017; Teegen in Reifarth et al. (forthcoming).

<sup>35</sup> Wood et al. 1992; recent contributions to this topic: Siek 2013.

<sup>36</sup> Cf. Corruccini et al. 1982; Handler – Corruccini 1983; Ferreira et al. 2019.

<sup>37</sup> Teegen 2017.

<sup>38</sup> Patterson 1982.

<sup>39</sup> Himmelmann 1971; George 2010; George 2011; Binsfeld 2012; George 2013.

<sup>40</sup> Binsfeld 2017.

<sup>41</sup> Morel 1993, 214.

<sup>42</sup> Zanker 1975; Kockel 1993; Hackworth Petersen 2006; Mouritsen 2011.

- <sup>43</sup> Alföldy 2011.
- <sup>44</sup> Vittinghoff 1990; Vittinghoff 1994.
- <sup>45</sup> Winterling 2012.
- <sup>46</sup> Bianchi-Bandinelli 1967; for a more recent evaluation see Zanker et al. 2012; Hackworth Petersen 2015.
- <sup>47</sup> Perego – Scopacasa 2016.
- <sup>48</sup> Parker Pearson 2005.
- <sup>49</sup> Cf. Teegen et al. 2018.
- <sup>50</sup> Reifarth et al. (forthcoming).
- <sup>51</sup> Währen – Schneider 1995.
- <sup>52</sup> Währen – Schneider 1995; Brothwell – Brothwell 1969.
- <sup>53</sup> Sperduti et al. 2018; Gowland – Walther 2018.
- <sup>54</sup> See e.g. Fernandes et al. 2015; Nehlich 2015; Bourbou 2018.
- <sup>55</sup> Jørkov et al. 2009, 199.
- <sup>56</sup> Purcell 2003.
- <sup>57</sup> Wilkins 1993.
- <sup>58</sup> Latin/German edition: Lauffer 1971; Latin/English edition: Graser 1940.
- <sup>59</sup> Methodological papers: Gifford-Gonzalez 2007; 2014; overview for classical archaeology: MacKinnon 2007.
- <sup>60</sup> Translation in Grant 2000.
- <sup>61</sup> Cited from Minozzi et al. 2012, 277.
- <sup>62</sup> Giuffra et al. 2015.
- <sup>63</sup> Newman – Gowland 2016.
- <sup>64</sup> Alzaheb – Al-Amer 2017.
- <sup>65</sup> Christlein 1973. On the discussion of such social categorisation see below note 80.
- <sup>66</sup> Schultz 1978.
- <sup>67</sup> Discussion in Teegen 2011, 157.
- <sup>68</sup> See key lecture to this conference by G. Kron 2018.
- <sup>69</sup> Teegen 2011, 155.
- <sup>70</sup> Teegen in Reifarth et al. (forthcoming).
- <sup>71</sup> Teegen 2017, 256.
- <sup>72</sup> Schultz 1982.
- <sup>73</sup> Several examples in Erdkamp – Holleran 2018.
- <sup>74</sup> Plaut. Aul. 3, 5, 34; Plaut. Men. 2, 3, 72; Verg. Aen. 3, 484.
- <sup>75</sup> Morigi Govi – Vitali 1988, fig. p. 259.
- <sup>76</sup> Hom. Il. 3, 125–127.
- <sup>77</sup> Plin. nat. 8, 195–198.
- <sup>78</sup> Von Lorentz 1937, esp. 198–212.
- <sup>79</sup> Kelp 2015, 132–139 (with further references).
- <sup>80</sup> Pro “mirror of lives”: Haffner 1989, contra: Härke 2000. General discussion on theories in German and British funeral archaeology: e.g. Dürr 2016.
- <sup>81</sup> Fahlander – Oestigaard 2008.

<sup>82</sup> We would like to thank the anonymous reviewers for their valuable contributions.

<sup>83</sup> Saripanidi 2017.

<sup>84</sup> E.g. found in a sarcophagus burial in Tumulus 2 in Pergamon (around the middle of the 3<sup>rd</sup> cent. BC), see Kelp in Pirson 2018, 170–175.

<sup>85</sup> Kelp 2015, 66–75 with references. ‘Doorstones’ are not a grave type themselves but rather part of built door façades, only a limited number functioned as plugs sealing a grave entrance. Door *stelai* constitute the bulk of the material.

<sup>86</sup> Kelp 2015, 93–105.

<sup>87</sup> Teegen – Schultz 2003, taking Slavic inhumation burials as an example.

<sup>88</sup> A submission of this path-breaking paper for a scientific journal is in due course (Personal communication during the Necropoleis Research Network meeting at Berlin, 23.02.2019).

<sup>89</sup> There were some outliers, due to contamination with kerosene from an air field after World War II. Due to special pre-dating treatment, they could be dated in 2019 and showed similar results as the other ones (Fernandes et al. 2019).

<sup>90</sup> See Fernandes et al. 2015.

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