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NEANDERTHAL BURIAL PRACTICES: A COMPARISON OF LA FERRASSIE (FRANCE) AND SHANIDAR CAVE (IRAQI KURDISTAN)

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1. Introduction

1.1 Mortuary behaviour of Neandertals

Humans are aware of the inevitability of death; it preoccupies us and it motivates us. Our time on earth is experienced through the impending prospect of death. We know of death through the passing of others and thus possess the knowledge that our own time will eventually arrive. Death itself is universal across time, space, and species. Death is part of life and is dealt with by every society in its own way. There is a degree to which behaviour changes around deceased members of their society. Death gives rise to an astonishing variety of responses. It is apparent that some species are more conscious of the death of their conspecifics than others. Chimpanzees for example have some awareness of death, as is contested by their behaviour around dead relatives (Pettitt 2011). On the other hand, modern humans possess the awareness of death as the very core of our being and self-consciousness (Parker Pearson 1999, 145). Anthropologically speaking, the behaviour surrounding death is an important concept in the study of social life and thus a critical theme in the body of anthropological theory. It says that death and its rituals are an important factor in shaping social values. Materials found in relation to death and its practices and beliefs were fundamental in the initial study of human evolution, the rise of ancient civilizations and cultural and social institutions. Studying death and mortuary ritual continues to be critical in the principal questions about human existence (Metcalf and Huntington 1991).

When and how did this profound understanding of mortality, including its correspondent funerary practices, ritual, and symbolism, evolve? Archaeologists are tasked with finding the origins of this highly symbolic behaviour. But how are we to know how past people perceived death, how they reacted to it, and how they acted upon it? The few preserved traces of the earliest responses to death are scarce and incomplete. Additionally, we are obstructed by our own intellectual, cultural, and religious biases and presuppositions of what we believe constitutes a mortuary rite (Parker Pearson 1999). Still, there are various means of research that attempt to take on these important issues.

One line of evidence is a comparison with the behaviour of other primates. Not only members of the genus *Homo* show a response to the death of conspecifics, traces of awareness of death can also be found our closest relative: chimpanzees. Observations of wild chimpanzees show that individuals display a range of behaviours when a member of their group deceases. On the one hand, individuals express forms of infanticide and cannibalism. Pettitt (2011) called these behaviours "Cronos" compulsions. On the other hand, individuals groom the corpse of close relative. Even mourning can occur when a relative dies and can cause depression, calling, and carrying the corpse around. This could possibly show how ancient such social responses to death are in the human lineage (Pettitt 2011, 38-39).

This thesis focuses on the responses to death by Neanderthals. The Neanderthals are an extinct hominin species that roamed the varied landscapes of Eurasia between 400 and 40 thousand years ago. Before *Homo sapiens* arrived in Europe, Neanderthal burial was already occurring (Renfrew 2009). The relevance of studying the lives of this extinct hominin species has been recognized for well over a century. Studying Neanderthals is relevant because they are part of the evolutionary and cultural history of our species, *Homo sapiens*. Neanderthals quite literally contributed to the people we are today. Modern humans interbred with Neanderthals already by 45.000 years ago, or even earlier (Fu *et al.* 2014) and studies suggest that the genomes of Eurasian people contain between 1-4 per cent Neanderthal DNA (Green *et al.* 2010). The origin of the human awareness of death is generally estimated to originate in the Middle and Upper Palaeolithic (Parker Pearson 1999, 148). I will discuss mortuary behaviour in the Middle Palaeolithic period and its evolutionary context later.

The discovery of the Neanderthal remains from the Neander Valley in Germany in 1856 sparked the debate about the relations between Neanderthals and modern humans. Since then, about 19 sites have been found that contained Neanderthal burials. At these sites, 40 cases of possible burials have been recognized. These Eurasian sites include for example La Ferrassie, La Quina, La Chapelle-aux-Saints, Le Moustier, Tabun, Amud, Kebara, Shanidar Cave and Dédériyeh (Maureille and Vandermeersch 2007, 311-313; Pettitt 2011, 82-91).

Neanderthals have been treating their deceased conspecific in different ways (Pettitt 2011; Rougier *et al.* 2016). Neanderthal mortuary behaviour displays regional differences, differences in age, sex, position, placement in the cave or rockshelter, orientation, manner of internment (artificial pit or natural fissure) and the number of individuals (Pettitt 2011, 130-

131). The observed variability indicates at least the occasional deliberate concept about the dead and how they should be treated (Pettitt 2011, 265). These factors make mortuary variability an interesting case regarding evolutionary context because it could indicate behavioural complexity.

One of the types of mortuary behaviour is the occurrence of multiple burials. Pettitt (2011, 9) describes this phenomenon as the following:
"Place of multiple burial. From the Middle Palaeolithic, a number of sites are recognisable in which several individuals were buried in several graves. This phenomenon can be recognised for *Homo neanderthalensis* and for early *Homo sapiens.* Numbers of individuals recognised from these sites is usually low, typically in the order of ~6–12, and although grave cuttings typically do not disturb previous burials the general sense at these sites is of brief phenomena in which several individuals were buried sequentially, without any overriding organisational principles or long-term persistence that would define the site formally as a cemetery. In addition to this, places of multiple burials typically occur within settlement contexts, that is, they are not separated from the world of the living, the dead interred amidst the waste of prosaic occupation."
According to a further definition of Pettitt, multiple burial sites are defined by a place where more than two individuals are buried. Regarding Neanderthals, three sites fit this definition; La Ferrassie in France, which contains 7 burials, Shanidar Cave in Iraqi Kurdistan with at least 4 probable burials, and possibly Amud Cave in Israel with 3 burials (Pettitt 2011; Balzeau *et al.* 2020). However, there are also a few sites that have 2 burials and are also worth mentioning. These are Spy Cave in Belgium, Le Moustier in France, Kebara Cave in Israel, Dédériyeh in Syria and possibly Kiik-Koba in Crimea as well. Among the early *Homo sapiens*, two important multiple burial sites were found, which are Skhūl and Qafzeh in Israel (Pettitt 2011). Pettitt refrains from calling these "multiple burial sites", "cemeteries", or "graveyards" because of the lack of clear (spatial) organisation e.g. a uniform orientation, the fact that there is mostly a lot of settlement debris present at these sites, and the relatively low number of individuals present at the sites. From approximately 12.000 years ago, cemeteries become visible in the archaeological record as an organized place that is solely destined for the (disposal of the) dead. It is a specific place where large numbers of individuals are formally buried and where

mostly no settlement debris is observed (Pettitt 2011). This is not the case in the temporal scope of this study, so a place of multiple burial is the designated term.

1.2 Research questions

The main research will focus on the variability in the mortuary activity between the Neanderthal multiple burials of La Ferrassie and Shanidar Cave. I base my main research aims on one of the conclusions Pettitt (2011, 137) draws about the variability in Neanderthal mortuary activity. He writes "Some places saw the burial of multiple individuals. In some cases, these burials probably occurred within a short period of time and were relatively unstructured (e.g. Shanidar) but at others a degree of organisation is evident (e.g. La Ferrassie). The latter suggests at times complex interactions between the living and the dead and their remains." This means that multiple burials in the Middle Palaeolithic are realized in different ways with a possible difference in the intention behind them as well. The placement in time and space could indicate the way a society dealt with death, for example, if they had a way to structure the burials, like at La Ferrassie. With this research, I will investigate the structure of the places of multiple burial in detail considering primarily the organisation in time and space while examining the type of burial and the relation between the graves. I will concentrate on two supposed Neanderthal burial sites, namely La Ferrassie in France and Shanidar Cave in Iraqi Kurdistan and compare the relevant archaeological evidence. The main problem that is addressed with this study is what the variation in mortuary behaviour between the Neanderthal multiple burial sites of La Ferrassie and Shanidar Cave indicates about Neanderthal mortuary practice in the Middle Palaeolithic and how this helps to understand their behaviour in an evolutionary context.

The sub-questions are:

1. What are the spatial relations between the burials in the caves?
2. What are the chronological relations between the burials in the caves?
3. What are the (spatial and temporal) differences and similarities between the burials at La Ferrassie and Shanidar Cave?

Even though a strong discussion around the evidence of intentional burial remains to this day, La Ferrassie and Shanidar are generally thought to be the most convincing and the most relevant (Balzeau *et al.* 2020, 2). These two sites contain multiple burials in a cave and contain some of the largest collections of Neanderthal remains. Thus, La Ferrassie and Shanidar are ideal case studies as the skeleton material derived from the sites is relatively abundant, and both sites have a long history of research. The remains from La Ferrassie have been studied since 1909 when the first skeleton was found, and the discovery of the first remains at Shanidar Cave was made in 1953 (Maureille and Vandermeersch 2007, 313). Shanidar Cave is situated in the Zagros Mountains of Iraqi Kurdistan. At Shanidar, the remains of nine individuals were discovered, of which four (Shanidar 4, 6, 8, and 9) compose the most convincing evidence for intentional burial (Pettitt 2011, 124). The grand abri (large rockshelter) of La Ferrassie is located in the southwest of France. Excavations at this site resulted in the discovery of seven Neanderthal skeletons (Pettitt 2011, 131).

1.3 Methodology

To answer the research question(s), I produced a detailed overview of the spatial and temporal data from the two sites. I focussed primarily on the degree of organization and structure of the burials. To achieve this, I examined the spatial distribution of the burials in the cave, the relation between them, the grave orientation, the placement and resting plane of the graves, the morphology of the graves, and their associated features. Additionally, I regarded the stratigraphy of the site, the layers in which the burials were found, to attempt to reconstruct a degree of continuity of the burial practice in the caves. Furthermore, the history of the excavations of the sites was provided to understand the conditions and context in which the burials were discovered and processed. The data derives from published sources. In the first place, the most recent discoveries and re-examinations of the sites were examined and discussed in the data chapters. Studies utilizing the newest technologies and interpretations are most important in adding to the knowledge about the structure of the burial sites. Where necessary and possible, publications from the original excavators were consulted. Using this data, an elaborate overview was formed that describes the history and the organization of the caves at length. The data from the sites was compared in order to examine mortuary variability and to answer the research question.

1.4 Outline of the thesis

Before going into detail about the two sites, the necessary theoretical background to understand the issue at hand is provided. Chapter 2 focuses on the species *Homo* *neanderthalensis*. Who were they, and where and when did they live? Chapter 3 deals with mortuary practices in the Middle Palaeolithic period. Here, mortuary practice as a concept is placed in a wider evolutionary context. Additionally, the Neanderthal inhumation debate is presented, and the main arguments are evaluated. The chapter also considers the question of multiple burial. Subsequently, the data from La Ferrassie and Shanidar Cave are presented in chapter 4 and 5 respectively. The sites are introduced, their respective burials are described, the spatial distribution of the burials is laid out and finally concluding remarks are added. Chapter 6 is the comparison of the data, reviewing the similarities and differences between the sites. This results in a discussion of the degree of organization of the multiple burial sites and an examination of the role of the cave as place of burial. The final chapter 7 consists of the main conclusions that can be drawn from this research.

2. The Neanderthals

2.1 Neanderthals as a species

The Neanderthals have fascinated researchers since the discovery of the first recognized skeleton in 1856 in the Neander Valley. The species derives its name from that valley near Düsseldorf, in western Germany. When the remains were first discovered, they were not immediately recognized as a separate species, but their anatomical morphology was explained by various possible pathologies. However, when other similar skeletons in association with stone tools and remains of extinct animals were discovered, they were recognised as an extinct human species. From that moment, their evolutionary trajectory and their relationship with modern humans was questioned. In the 1910s and 1920s, Neanderthals were considered to be too primitive and inferior to be related to *Homo sapiens* and they were very distinctly classified as their own species; *Homo neanderthalensis*. From the 1930s, the views changed and scholars in the field of biology supposed that Neanderthals evolved into modern humans over time (Harvati 2010, 367-368). In recent years, DNA evidence and the fossil record have shown that Neanderthals are a separate species and have their own unique evolutionary trajectory.

The evolutionary trajectory of the Neanderthals has been a source of debate for a long time and multiple hypotheses have been presented consequently. Still, there seems to be no definitive answer as the fossil record is sparse. Neanderthals (archaic hominins) and modern humans shared a last common ancestor, *Homo heidelbergensis*. A recent DNA study suggests that the split between the archaic hominins and the ancestors of modern humans occurred between 550.000 and 765.000 years ago (Meyer *et al.* 2016). The subgroup that stayed in Africa evolved into *Homo sapiens* and the other group that split off branched into Europe and evolved into Neanderthals over a long period of time (Buck and Stringer 2014). Some of the first traces of the facial features that would become the 'classic' Neanderthal traits are present from about 430.000 years ago in Spain (Sima de los Huesos) and the UK (Swanscombe) (Roebroeks and Soressi 2016). Neanderthals evolved gradually over hundreds of thousands of years into the 'classic' Neanderthal that lived in the late Pleistocene, around 70.000-40.000 years ago, continuously gaining more specific traits (Harvati 2010, 368).

Despite being a separate species, Neanderthals and modern humans interbred and mixed their genes probably when modern humans expanded out of Africa and encountered the Neanderthals. This happened on several occasions over a long period of time, at least from 100,000 years ago, in several regions (Roebroeks and Soressi 2016). Modern non-African populations contain 1 to 4 % Neanderthal genes (Green *et al.* 2010). The Neanderthals went extinct between 41.000 and 39.000 years ago. The reason behind their extinction is widely debated and a key question in the field of palaeoanthropology, as it also concerns the relationship of late Neanderthals with the earliest anatomically modern humans (Higham *et al.* 2014).

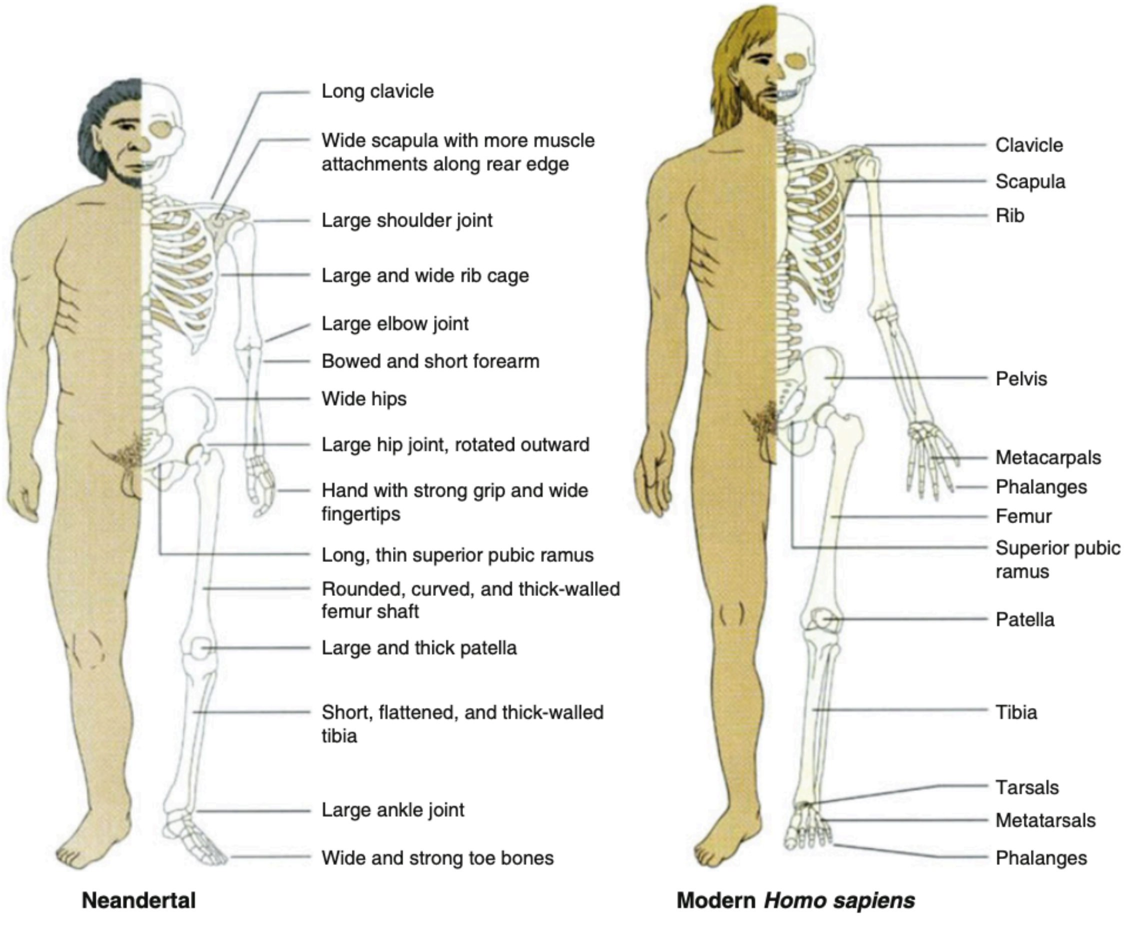

Figure 1: Neanderthal and modern human morphology (Stringer and Gamble 1993)

The ‘classic’ Neanderthal is characterized by a distinct set of morphological features (fig. 1). The Neanderthal cranium includes a very pronounced brow ridge, large and round eye sockets, and a large nose. The middle part of the face visibly projects forwards, while the chin recedes and does not protrude. On the back of the skull, a projecting occipital bun is present (Harvati 2010, 369). The cranial capacity of Neanderthals varies between 1,200 and 1,626 cm^3.

This is the largest cc of all the *Homo* species (Ramirez Rozzi and Bermúdez de Castro 2004, 938). The post-cranial skeleton is defined by its robustness, thick bones and large muscle and ligament attachment areas. This particular morphology is attributed to adaptation to cold environments and high energy demands, similar to present-day northern latitude dwelling populations (Holliday 1997; Wroe *et al.* 2018). Not only did Neanderthals adapt to cold conditions anatomically and physiologically, but they probably also adapted by forming beneficial social structures and subsistence strategies. They were adept at using fire to warm their shelters and themselves, just like they probably needed to have made clothes to survive in high northern latitudes (Ocobock *et al.* 2021). Despite being the most cold-adapted of all the fossil hominins, Neanderthals lived in a variety of climates. They spread over large parts of Eurasia, inhabiting different niches. Neanderthal fossils have been found from the Iberian Peninsula through western Europe into Siberia (fig. 2). Their south-eastern limits extend through the Mediterranean into the Near East and Western Asia (Harvati 2010, 368).

Figure 2: Geographical range of the Neanderthals (Krause et al. 2007, 903)

2.2 The archaeological record

Not only the bones of Neanderthals have been discovered but also associated faunal remains, tools, and cultural objects have been studied over the years. Faunal remains have been studied to assess the diet of Neanderthals. Because most dietary studies focus on animal remains, the Neanderthal diet is usually thought to be heavily based on meat. Although this was an important part of their diet as is demonstrated by many studies over the years which consider subsistence patterns (Gaudzinski-Windheuser and Niven 2009), hunting weapons (Villa and Lenoir 2009) and isotope studies (Richards and Trinkhaus 2009), recent studies suggest that they also consumed a variety of plant-based sources from different environments (Hardy and Moncel 2011; Sistiaga *et al.* 2014; Power *et al.* 2018). Additional to hunting terrestrial mammals, Neanderthals also collected and hunted marine animals in several regions to enrich their diet (Stringer *et al.* 2008; Cortés-Sánchez *et al.* 2011; Zilhão *et al.* 2020). The way in which they hunted remains largely unclear, but a study of perforations on deer skeletons from the site of Neumark-Nord in Germany shows evidence for close-range hunting techniques using wooden spears (Gaudzinski-Windheuser *et al.* 2018).

Neanderthals were quite adept at producing and using stone tools. The Neanderthals are mostly associated with the Middle Palaeolithic Mousterian lithic industry. The beginning of this period is defined by the Levallois method. This technique carefully prepares cores to obtain blanks of predetermined form. The intricate flakes were made into a variety of tools, including scrapers and points. In the Middle Palaeolithic, there was a great deal of technological variety. The classic Mousterian industry dates from approximately 160.000 to 40.000 years ago. Variations within the industry exist in all corners of the range of the industry, establishing clear spatiotemporal units across Europe and parts of the Near East and parts of Asia (Roebroeks and Soressi 2016). However, Neanderthal technology is more complex than researchers once thought. Neanderthal remains are in some cases associated with Upper Palaeolithic lithic industries, for example, the Châtelperronian. This interesting matter opens a debate surrounding modern acculturation and the cognitive capacities of Neanderthals (Mellars 1996; Shaw and Jameson 1999; Harvati 2010).

Complex cultural or symbolic behaviour among Neanderthals is an ongoing focus of debate. Although most often only ascribed to late Pleistocene modern humans, there are instances where complex behaviour is recognized in Neanderthal material culture. At the site of Grotte du Renne in France, a large number of personal ornaments, decorated bone tools and colourants were discovered in the Châtelperronian levels of the cave. The materials are associated with the Neanderthal remains at the site and thus stand for possible Neanderthal symbolism (Caron *et al.* 2011; Welker *et al.* 2016). Another example of complex behaviour is found at the Zaskalnaya VI site in Crimea. A decorated raven bone, whose modifications cannot be explained as a result of butchery activity, was discovered there. The regularly spaced notches on the bone suggest that symbolic functions of the object are possible (Majkić *et al.* 2017). Ornaments were also made from other parts of birds, especially the claws and feathers of raptors. At the site of Combe-Grenal in the Dordogne (France), a claw of a golden eagle was found in the Mousterian layers. The claw bears two stone tool incisions (Morin and Laroulandie 2012). Similar instances of successful removal of the claw from the toe with a lithic tool occur at the French Mousterian sites of Les Fieux (Morin and Laroulandie 2012), Pech de l'Aze I (Soressi *et al.* 2008), Pech de l'Azé IV (Dibble *et al.* 2009), and the Neronian site of Mandrin Cave (Romandini *et al.* 2014). In Italy, this phenomenon occurs at the Rio Secco Cave (Romandini *et al.* 2014). The function of the cutmarks on the claws is probably not related to food processing because claws are inedible and thus the bird specimens do not meet the nutritional requirements for human subsistence (Romandini *et al.* 2014). The alternative hypothesis is that the claws were used in a symbolic context, considering that the claws are all from powerful birds of prey, which are rare in the environment and may have attracted Neanderthals to utilize them (Morin and Laroulandie 2012). Additional convincing evidence derives from the Neanderthal site of Krapina in Croatia, where eight white-tailed eagle claws show clear signs of human modification (fig. 3). The processed talons suggest having functioned as a jewellery assemblage, possibly bound together with a piece of leather or tendon (Radovčić *et al.* 2015; Radovčić *et al.* 2020). At the Fumane Cave in northern Italy, several items of interest were discovered in the Mousterian layers. Here, bones of several raptor species were discovered, which indicate the intentional removal of feathers for cultural purposes (Peresani *et al.* 2011; Romandini *et al.* 2016). The use of feathers from these birds (raptors and corvids) as ornaments is highly likely, considering the location of the processing marks and the comparison with the ethnographic record (Finlayson *et al.* 2012). Furthermore, at the same site, a fossil marine shell that was collected by Neanderthals and then smeared with red pigment on the outer shell surface was discovered in the Mousterian layer of the site. Its possible use was as an ornament, perhaps as a pendant (Peresani *et al.* 2013). Other instances of pigmentated marine shells are found on the Iberian Peninsula. The two sites that yielded the evidence of this complex behaviour are Cueva de los Aviones (fig. 4) and Cueva Antón (Zilhão *et al.* 2010; Hoffmann *et al.* 2018). Neanderthals mostly used manganese dioxide as a black pigment, whereas red pigment is very rare. Most evidence for the use of colourants dates to the end of the Middle Paleolithic period, 60.000-40.000 years ago (d'Errico *et al.* 2009). However, at the site of Maastricht-Belvédère, The Netherlands, the use of red ochre (hematite) was reported, indicating a much older age (200.000-250.000 years ago) for Neanderthal pigment use (Roebroeks *et al.* 2012). In France, at the site of Combe-Grenal, the intense use of black manganese oxides and the possible use of yellow to red iron oxides and white chalk was identified (Dayet *et al.* 2019).

Figure 3: Modified eagle talon from Krapina (Radovčić et al. 2015, 9)

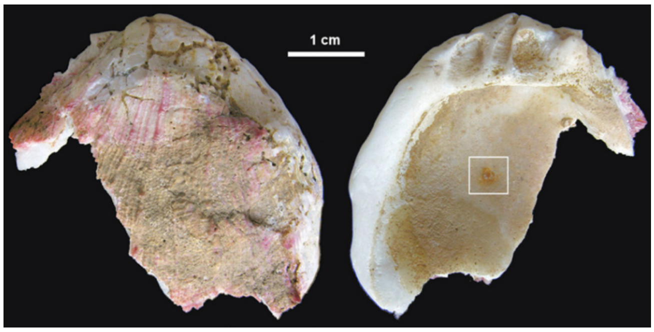

Figure 4: Shell with pigment residue from Cueva de los Aviones (Zilhão et al. 2010, 1025)

Rock art is well known from modern humans throughout all of prehistory, but at the Gorham's Cave in Gibraltar, an abstract cross-hatched figure is engraved in the cave's bedrock by Neanderthals using a lithic tool. This could demonstrate the ability for abstract thought and expression (Rodríguez-Vidal *et al.* 2014). At the Bruniquel Cave in southwestern France, Neanderthal complex behaviour is expressed through complex constructions deep in the cave. Here, early Neanderthals moved hundreds of broken stalagmites and placed them in regular circles at 336 meters from the entrance of the cave and made fireplaces on the structures. The site was possibly used for symbolic purposes. This find suggests that this group mastered the underground environment and possessed a complex level of social organization (Jaubert *et al.* 2016). Another aspect of the Neanderthal way of life that can be considered quite advanced is the fact that Neanderthals took care of their own, which is apparent from healed injuries that are identified on many Neanderthal skeletons. An important case is the Shanidar 1 skeleton, which suggests that he could not have survived his injuries if he was not cared for (Hublin 2009).

The mentioned discoveries add to the increasing evidence that Neandertals had symbolic items as part of their culture and strengthen the evidence that European Neanderthal populations displayed modern-like behaviour before the immigration of modern humans (Soressi and d'Errico 2007; Peresani *et al.* 2011, Peresani *et al.* 2013). A final, but very important line of evidence of complex behaviour, is the mortuary behaviour of Neanderthals. This subject will be discussed in detail in the next chapter.

3. The evolution of mortuary practices

3.1 Introduction

Neanderthal burials are part of the evolutionary history of mortuary practice. In this chapter, I look at its evolutionary connections to other forms of mortuary behaviour in space and time (Anderson *et al.* 2018). Mortuary activity has primate roots, which are for example expressed in morbidity, mourning, social theatre, and Cronos compulsions, which include infanticide and cannibalism in the case of primates (Pettitt 2011, 38-39). Chimpanzees react distinctively to the passing of a conspecific, as is observed from their behaviour which reminds of how humans react to the death of a close relative. The animals display a set of specific social behaviours that make us rethink the profoundness of their understanding of death and mortality (Anderson *et al.* 2010). And not only primates display such behaviour, but a wider range of non-human animals are also known to participate in 'sophisticated' responses to the dead (Pettitt and Anderson 2019). Consequently, archaeology of the Palaeolithic period can address the evolution that saw responses to death observed in animals turn into modern human mortuary behaviour (Pettitt 2018).

3.2 Early evidence of mortuary practices

The first possible structural abandonment at a particular place might have been taken place at the Hadar site in Ethiopia, locality AL-333. Here, a group of at least 13 *Australopithecus afarensis* fossil individuals was possibly structurally abandoned 3.2 million years ago when they were moved to the site of deposition, as proposed by Pettitt (2011). Another case of physical evidence of possible mortuary activity in the Lower Palaeolithic is observed in the form of processing of the bones of the deceased. An important site where clear cutmarks are found is the site of Sterkfontein in South Africa. On parts of the pre-modern hominin skull of Stw 53, cutmarks indicate that the jaw was disarticulated from the cranium with a sharp stone tool. The reasons behind this activity are unknown, but the intentional nature of this action is a clear sign of the processing of the body (Pickering *et al.* 2000; Pettitt 2011). Another key site concerning this type of activity is the Spanish site of Gran Dolina cave in Sierra de Atapuerca. This cave is filled with 18 meters of deposit, including the remains of at least 10 *Homo antecessor* individuals in the TD6 unit of the site, which date to approximately 800.000 years ago. Among the remains, there is evidence of elaborate processing of the bones. These include a number of cutmarks, scraping marks, percussion marks and peeling on multiple individuals.

The goal of these acts was to extract flesh and marrow from the bones. Among the hominin bones, faunal remains with the same butchery patterns are present. Together with the fact that the remains were deposited over a longer period and not as a single event, shows that nutritional cannibalism was engaged in at this feeding site over a substantial period and that this might have been structured behaviour for this regional population (Bermúdez de Castro *et al.* 1997; Díez *et al.* 1999; Bermúdez de Castro *et al.* 2004; Pettitt 2011). Another example is the Lower Palaeolithic site of Bodo in the Awash River Valley of Ethiopia, where a 600.000-year-old *Homo heidelbergensis* cranium was discovered in 1976. Here, intentional post-mortem defleshing on the cranium caused by a stone tool is visible. This time, there is no way of knowing the objective of this defleshing, just like with the defleshing from Sterkfontein (White 1986; Conroy *et al.* 2000; Pettitt 2011). About 300.000 years ago, there is another instance of defleshing in the archaeological record in Italy. At the open-air site of Castel di Guido, several hominin cranial fragments display cutmarks, which could indicate defleshing of the head (Mariani-Costantini *et al.* 2001; Pettitt 2011, 55). In Ethiopia, another site was discovered, called Herto. Here, remains of 150.000-160.000-year-old *Homo sapiens* were found with cutmarks that indicate defleshing of the carcass (fig. 5). Clark *et al.* (2003) proposes that the remains suggest deliberate mortuary practices.

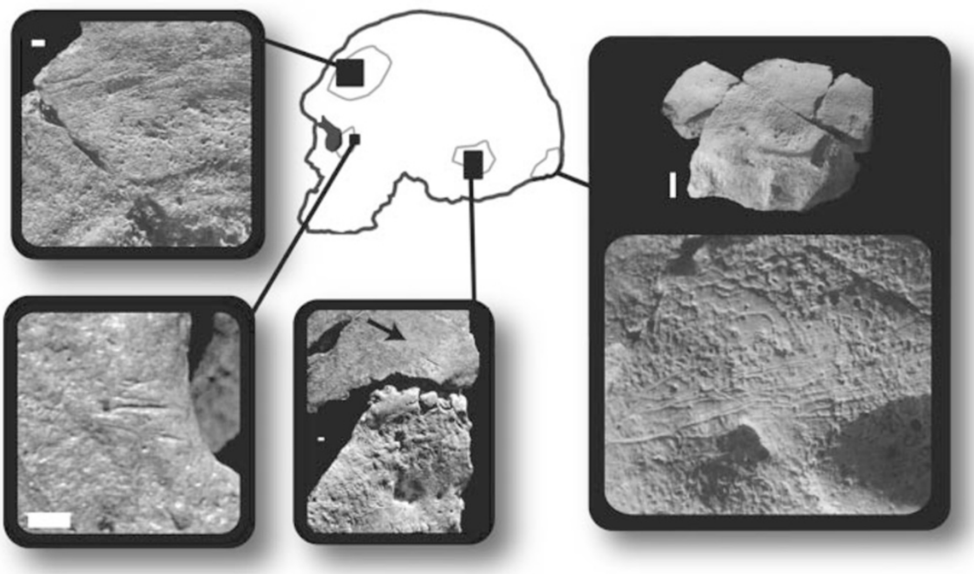

Figure 5: Defleshing cutmarks on the adult cranium from Herto, Ethiopia (Clark et al. 2003, 749)

About 100.000 years ago, cannibalism was practised at the Middle Stone Age site of Klasies River Mouth in South Africa. In the Main Cave, fragmentary fossils of *Homo sapiens* were recovered that had accumulated in an area of activity (Rightmire and Deacon 2001; Pettitt

2011, 58). Carcass processing is part of the advance in morbidity and mortuary activity. However, this behaviour is not yet structured or univocal in the archaeological record (Pettitt 2011).

An important moment in the development of structured mortuary activity is the origin of funerary space, thereby choosing a place that is specifically meant for the dead to be laid to rest. This goes further than structural abandonment in the sense that the place is given a meaning (Pettitt 2011). Placing the dead in a designated space meant for them is a way of marking the connection of a society with their ancestors, the land, and the living. It also signifies a physical separation between the dead and the living. In such a manner, this relationship becomes visible in the archaeological record. The landscape of the dead can inform us about the relationship between the living and the dead and how they were incorporated into social practices and possible cosmologies (Parker Pearson 1999). Pettitt (2011) proposes that this initially emerges after 500.000 years ago. For the first time, a place was possibly culturally associated with an opportunity to dispose of the dead. This takes place at the Sima de los Huesos in Atapuerca in Spain. At this site, a minimum of 29 individuals are preserved (Bermúdez de Castro *et al.* 2021a). Initially, the fossil remains were identified as *Homo heidelbergensis*. However, a recent study has shown that this is not a clear case, and the taxonomic identification remains an open question (Arsuaga *et al.* 2014). The layer with the human fossils is estimated to date to 455.000-440.000 years ago (Bermúdez de Castro *et al.* 2021b). At the site, which comprises a small chamber in a karst system accessed through a vertical duct, the hominin remains accumulated. The manner of accumulation has long been discussed, but the evidence suggests that the fossils were anthropogenically deposited on separate occasions over a longer period of time. Whatever the reason of deposition might have been, the location could have become a place culturally associated with the disposal of the dead after an extended period. If this is the case, the place has been given a meaning and this could represent the earliest origin of funerary space and formal mortuary practices (Parker Pearson 1999, 155; Pettitt 2011, 49-55). Furthermore, similar situations of funerary caching exist at Pontnewydd Cave in Wales, where a highly fragmented set of early Neanderthal remains was found, dating to 225.000 years ago. Here, the dead were possibly intentionally deposited deep in the cave (Pettitt 2011, 55; Debenham *et al.* 2012). A recently discovered site is the Rising Star Cave in South Africa. In this cave, at least 15 *Homo naledi* individuals have been found in a complex cave system that dates to about 250.000 years ago. As there are no signs of flooding, carnivore activity, a catastrophic event, or hominin occupation that could have created this deposition of the remains, it is suggested that the fossil assemblage is the result of deliberate disposal of the dead by the hominins themselves (Berger *et al.* 2015; Randolph-Quinney 2015; Dirks *et al.* 2017).

The next stage in the advancement of mortuary behaviour is the emergence of the first deliberate burials. The first forms of simple inhumation emerge when humans intentionally create a space where the corpse is deposited and covered. The earliest known burials of *Homo sapiens*, and possible all *Homo* species, occur in the Near East and date from 90.000 to 130.000 years ago (Pettitt 2011). The two sites where the earliest evidence derives from are Skhūl and Qafzeh in Israel. At Skhūl Cave, at least 10 individuals of early *Homo sapiens* are seemingly buried in the cave, of which 4 burials are mostly complete. This took place between 100.000 and 130.000 years ago. Skhūl I, IV (fig. 6), V (fig. 7), and IX were placed in grave cuttings that were artificially dug. Others were situated in naturally shaped depressions. This site is the first convincing evidence of deliberate burial, possibly also accompanied by personal ornamentation (Pettitt 2011, 59-62).

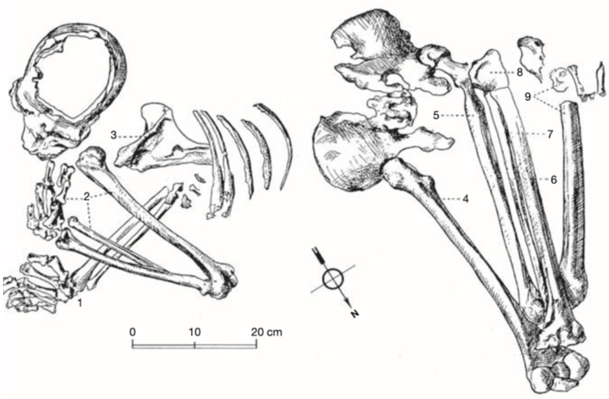

Figure 6: Plan of the Skhūl IV burial (Pettitt 2011, 60)

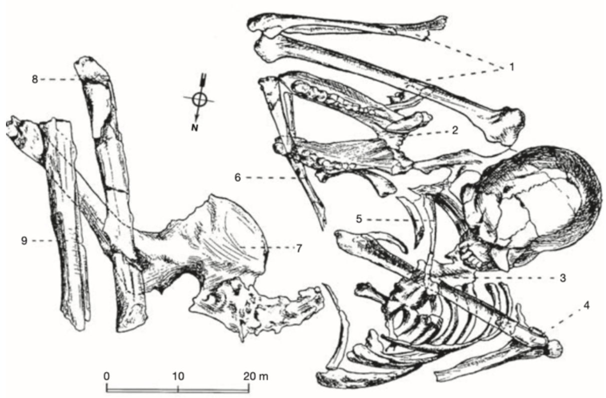

Figure 7: Plan of the Skhūl V burial (Pettitt 2011, 60)

The site that is frequently discussed alongside Skhūl Cave, is Qafzeh Cave. Also located in Israel, 13 (near) complete *Homo sapiens* fossils were discovered over de course of the 20th century. The remains date to 90.000-100.000 years ago. At this site, a local group tradition of burial within a tight chronology and clustered space in the Lower Palaeolithic period of the cave is suggested. It also seems that during this period, the cave had a designated funerary function. (Pettitt 2011, 63; Vandermeersch and Bar-Yosef 2019). The oldest human burial in

Africa was found at the site of Panga ya Saidi in Kenya. The remains of this modern human child were dated to about 78.300 years ago. The child was buried in a flexed position and associated with Middle Stone Age lithic artefacts. Several types of analyses of the burial pit show that it was intentionally excavated (Martinón-Torres *et al.* 2021). Even though the evidence for burial practices of early modern humans in Africa is scarce, there are two other important burial sites from this early stage. At the site of Border Cave in South Africa, an infant modern human is buried, dated to 74.000 years ago, which was previously considered the earliest burial in Africa. The burial is associated with a perforated Conus shell as personal ornamentation (fig. 8), which could indicate possible symbolic behaviour (d'Errico and Backwell 2016).

Figure 8: The perforated Conus shell from the infant burial at Border Cave (d'Errico and Backwell 2016, 95)

The other site is Taramsa Hill in Upper Egypt. Here, a Middle Palaeolithic child burial was discovered in a pit which dates to 50.000-60.000 years ago (Vermeersch *et al.* 1998). In Australia, some early *Homo sapiens* cremated and buried their dead in a simple manner at the site of Mungo in New South Wales. The archaeological record thus shows that from about 120.000 years ago, funerary practices emerged among *Homo sapiens*.

3.2 The Neanderthal inhumation debate

Neanderthals exhibit several types of mortuary practices throughout the Middle Palaeolithic period. Burial is the most elaborate form, but funerary caching and cannibalism are also visible in the archaeological record. The evidence of their mortuary behaviour is varied. El Sidron Cave in Spain and Krapina in Croatia provide important evidence for carcass processing among Neanderthals. Other sites where the processing of bones, including defleshing and possible cannibalism took place, are the French sites of Moula Guercy Cave, La Ferrassie, Marillac, Combe-Grenal, and the site of Engis in Belgium. At La Quina in France, Neanderthal bodies were deliberately placed at the site, presenting a possible instance of funerary caching. A similar case can be made for the individuals from Caverna delle Fate in Liguria, Italy. Deliberate burial is observed at several sites in Europe and West Asia. Accepted Neanderthal burial sites are La Ferrassie, La-Chapelle-aux-Saints, possibly La Quina and Le Moustier, Tabun, Amud, Kebara, Shanidar Cave and Dédériyeh Cave (Pettitt 2011).

Even though most scholars agree that Neanderthals buried their dead, there has long been a discussion about the validity of this claim. The debate continues to this day, and this is partly due to the conditions in which a lot of important discoveries were made. Complete Neanderthal skeletons were found in the early 20th century, when excavation, observation, and documentation techniques were still quite basic. These conditions resulted in the widely interpretative dataset we have today and make it difficult to verify the original context of the finds. Ways to deal with this issue are for example the discovery of new Neanderthal skeletons, but the chances of this happening are very slim. Further and more useful means are to re-excavate important sites to obtain new information and to re-examine published evidence (Dibble *et al.* 2015). The debate is connected to the cognitive and behavioural capacity of hominins in the Middle Palaeolithic and thus also to the origins of modern humans (Riel-Salvatore and Clark 2001). Considering that evidence of possible symbolic behaviour of Neanderthals is emerging, the question of deliberate burial needs to be evaluated (Rendu *et al.* 2015, 81).

Well-known critiques of Neanderthal burials were proposed by Gargett in 1989 and 1999, which received its fair share of scepticism (Louwe Kooijmans *et al.* 1989; Belfer-Cohen and Hovers 1992; Hayden 1993; Riel-Salvatore and Clark 2001). Two sites that are being re-evaluated recently are Roc de Marsal and La Chapelle-aux-Saints in France. At Roc de Marsal (Dordogne), the remains of a Neanderthal child were found in 1961. Since then, the Neanderthal skeleton has been regarded as an intentional burial. However, in 2011 Sandgathe *et al.* published a reassessment of the burial, considering old and new excavation data. There is no indication for grave goods, special treatment of the body, covering the body or an artificially dug pit. They concluded that the evidence which provided the remains with the status as a deliberate burial did not hold up after re-evaluation of the evidence. The authors state that a natural deposition of the body is the best explanation of the facts. In line with this research, Goldberg *et al.* (2013) continued the search for answers by emphasising the essential geoarchaeological aspects of the site. The sedimentary context, the pit structure, and the taphonomical aspects of the remains and their integration with data from the most recent excavations were evaluated. The authors concluded that there is no sign of anthropogenic ritual present in the context of the site. This results in the rejection of the original status of the Roc de Marsal Neanderthal infant as a deliberate burial.

In 2014, Rendu *et al.* published the findings of their 12 year-long research at the bouffia Bonneval at La Chapelle-aux-Saints. At this site, the first Neanderthal burial was discovered in 1908, but not everyone was convinced of its deliberate nature. Rendu *et al.* concluded that the multiple lines of evidence from the analysis of the burial pit and the human (and faunal) remains support the intentional burial hypothesis. A year later, Dibble *et al.* (2015) published a critical examination of the data from Rendu *et al.* and concluded that the beforementioned evidence was not sufficient and not convincing enough to indicate intentional burial. They stated that the evidence from La Chapelle-aux-Saints does not meet the criteria for intentional interment or ritual/symbolic behaviour. Additionally, the researchers decided that alternative hypotheses can explain the degree of preservation of the hominin remains in a pit. However, Rendu *et al.* (2016) replied to the criticism not much later. Not only did they clear up the apparent misinterpretations of the data that Dibble *et al.* (2015) proposed, but they also disproved the alternative hypotheses that they had suggested could explain the data from the site. It seems that the intentional burial hypothesis of La-Chapelle-aux-Saints is valid.

The comment that most scholars agree that Neanderthals buried their dead, functions as a generalization for the fragmentary evidence that suggests that some Neanderthals sometimes buried their dead. Even though the archaeological record is highly fragmentary and occasionally there are other explanations as to how the remains came to be deposited, deliberate burial is proposed as the only explanation in a substantial number of cases (Pettitt 2011, 79). In this thesis, I will not partake in the deliberate burial discussion but focus on places of multiple burial, where more than two individuals are buried, specifically La Ferrassie in France and Shanidar Cave in Iraqi Kurdistan.

4. La Ferrassie

4.1 Introduction to the site

The archaeological site of La Ferrassie is located five kilometres north of the commune of Le Bugue, Dordogne, France (fig. 9). La Ferrassie is a cave complex that includes a large rockshelter (grand abri) and a small rockshelter (petit abri). At the base of a limestone hill, and part of an elongated karstic system, the grand abri (fig. 10) has served as a refuge for thousands of years (Gómez-Olivencia *et al.* 2018). At the large rockshelter, seven Neanderthal skeletons were discovered.

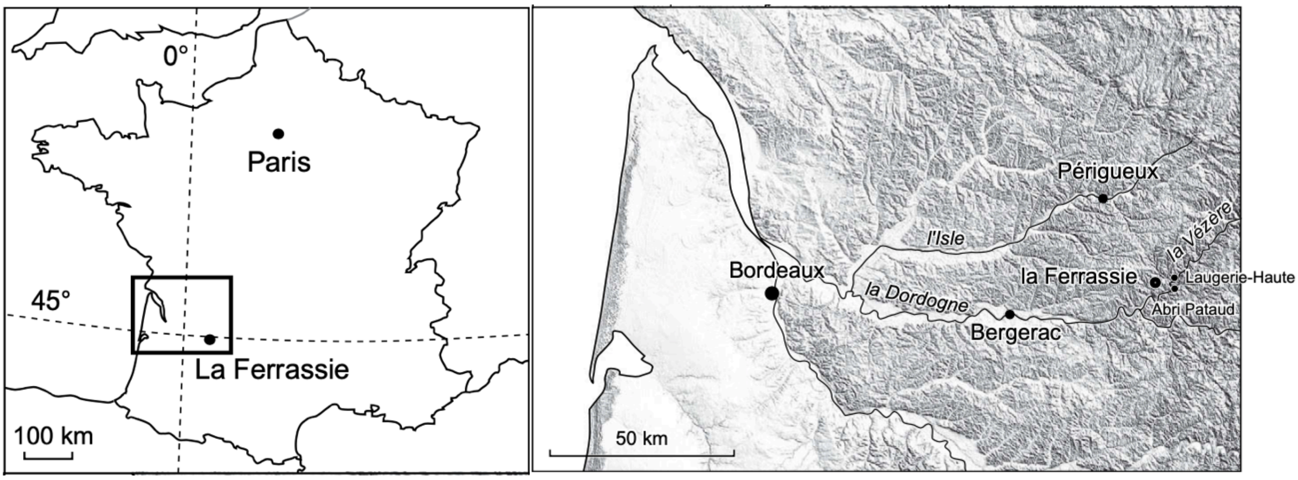

Figure 9: Location of the La Ferrassie site in France (Bertran 2008, 2049)

Figure 10: The site of La Ferrassie (www.musee-prehistoire-eyzies.fr)

The large rockshelter was discovered at the end of the 19th century. During the construction of a road, the sediments of the rockshelter were exposed. In 1895, excavations led by Louis Capitan and Denis Peyrony started and lasted until 1922 (fig. 11). They started excavating near the road and made their way deeper into the shelter while excavating their trenches. During this time, they uncovered two adult skeletons (LF 1 and LF 2) and five immature individuals (LF3, LF4, LF4bis, LF 5, and LF6). The specimens labelled as La Ferrassie 4 turned out to be part of Le Moustier 2, and La Ferrassie 4bis was then named La Ferrassie 4 (Maureille 2002). Capitan and Peyrony identified several archaeological sequences at the site, starting with a Mousterian layer with bifaces, followed by the Ferrassie Mousterian, a Châtelperronian sequence, the Aurignacian layer, and finally the Gravettian. The discoveries they made at the site, aided in determining the Neanderthals as a separate species.

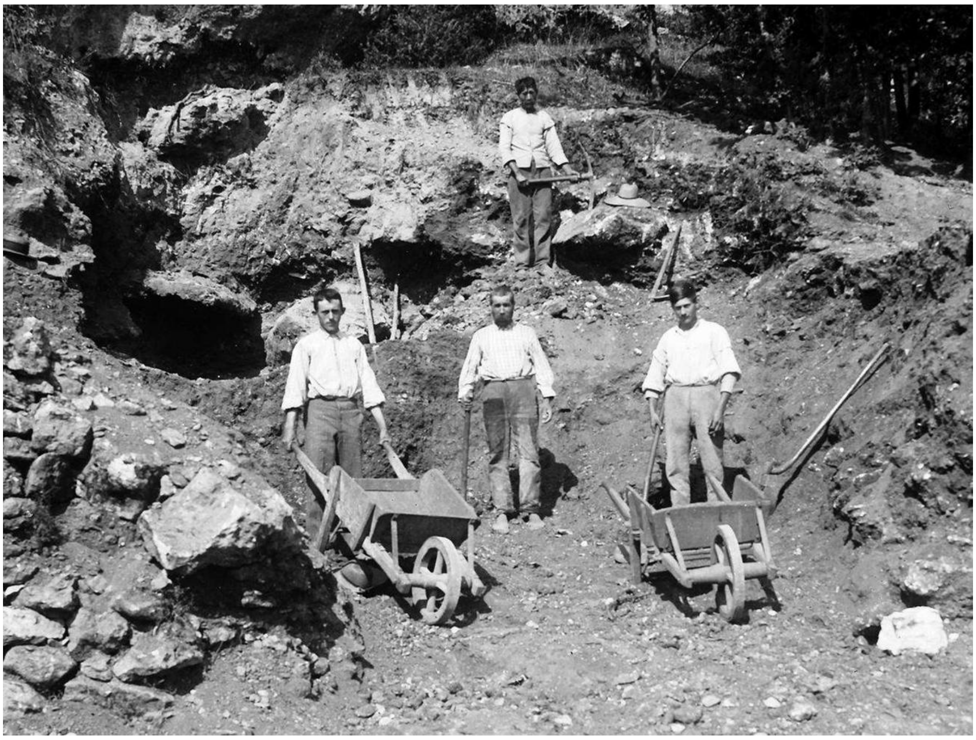

Figure 11: The first excavations at La Ferrassie over a century ago (www.sudouest.fr)

Between 1968 and 1973, H. Delporte continued excavations during six field seasons, focussing on the eastern, interior part of the site. La Ferrassie 8 was found in 1970 and 1973 in layer M2, square 1 of the site, becoming the actual fifth immature Neanderthal discovered at the site. Subsequently, Delporte collected the hominin remains he found during the excavations in a box together with associated faunal remains. In the early 1980s, J.-L. Heim studied them and published his study on the Neanderthal children of La Ferrassie. In the 2010s, A. Turq, H.L. Dibble, P. Goldberg, S. McPherron, and D. Sandgathe investigated the western area of the site (fig. 12), close to where La Ferrassie 1 and 2 were found (Guérin *et al.* 2015; Gómez-Olivencia *et al.* 2018). Recent reassessments of the materials of the La Ferrassie remains resulted in the discovery of additional bones that belong to La Ferrassie 8 (Gómez-Olivencia *et al.* 2015) and even new Neanderthal adult individuals (Becam *et al.* 2019). In 2020, Balzeau *et al.* conducted an in-depth study of the La Ferrassie 8 burial and its associated materials and stratigraphy. They analysed the original field diaries and spatial data, performed multidisciplinary studies on the human remains and the associated finds, and investigated the new excavation materials from 2014. Their study concludes that La Ferrassie 8 was deliberately buried.

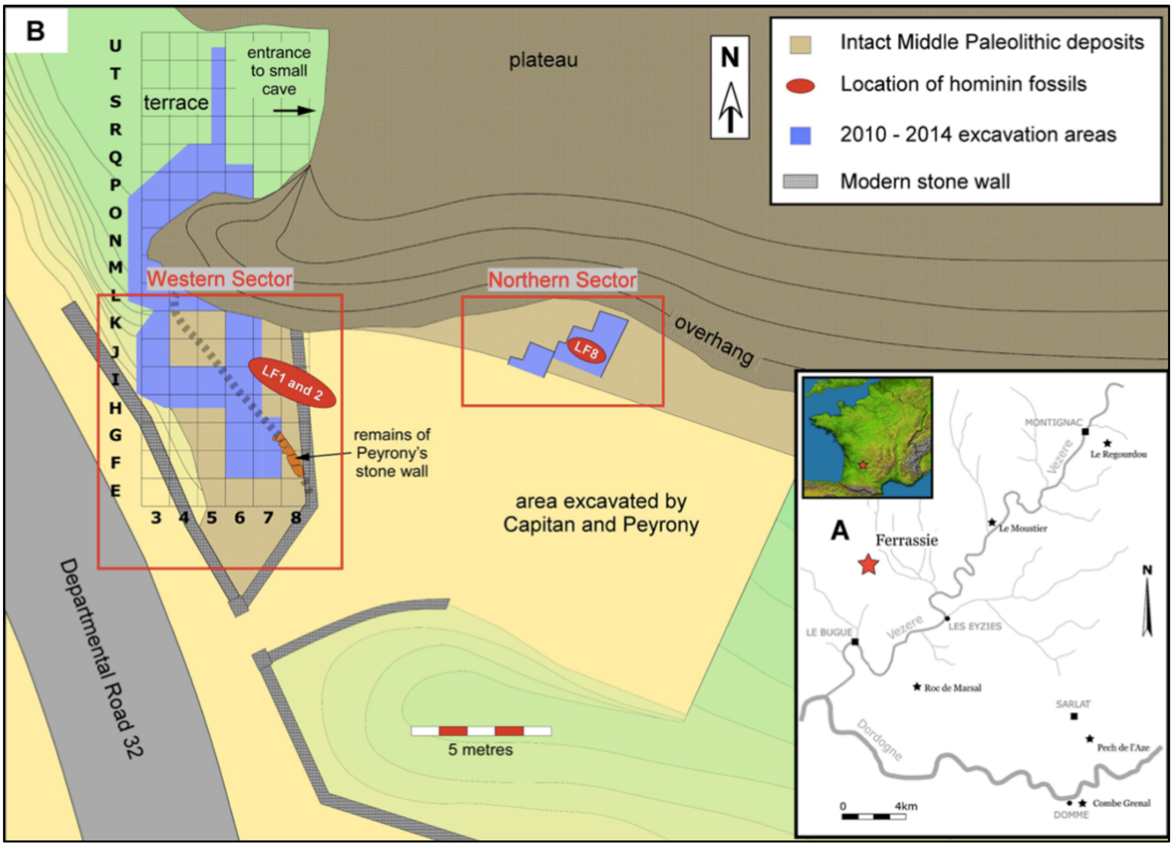

Figure 12: Plan of La Ferrassie, including the areas of old and new excavations (Talamo et al. 2020, 963)

4.2 Stratigraphy and chronology of the site

The documentation of the stratigraphy and the context of archaeological sites that were discovered at the beginning of the 20th century was poor compared to modern-day archaeological standards and procedures. This led to a lot of data from La Ferrassie (and other sites) that remained undetermined and not properly studied. Recently, old excavation reports, data, and materials from La Ferrassie are being reassessed, which produces new information and insights into the site and the larger burial debate (Balzeau *et al.* 2020). La Ferrassie has a complex and variable geology and stratigraphy. The site contains Middle and Upper Palaeolithic layers, which start in MIS 5 and include Mousterian, Châtelperronian, Aurignacian, and Gravettian levels. Levels 2-5 are Middle Palaeolithic, layer 6 is Châtelperronian, and layers 7-9 constitute the Upper Palaeolithic sequence (Gómez-Olivencia *et al.* 2018, Talamo *et al.* 2020). The study by Guérin *et al.* (2015), who sampled new material from the western corner of the site (fig. 13 and fig. 14), yielded several useful dates. They utilized various luminescence dating methods and established that the beginning of the stratigraphical sequence is dated to about 90.000 years ago. Additionally, the geological layers in which La Ferrassie 1 and La Ferrassie 2 were discovered date to between 54.000 and 40.000 years ago (Guérin *et al.* 2015).

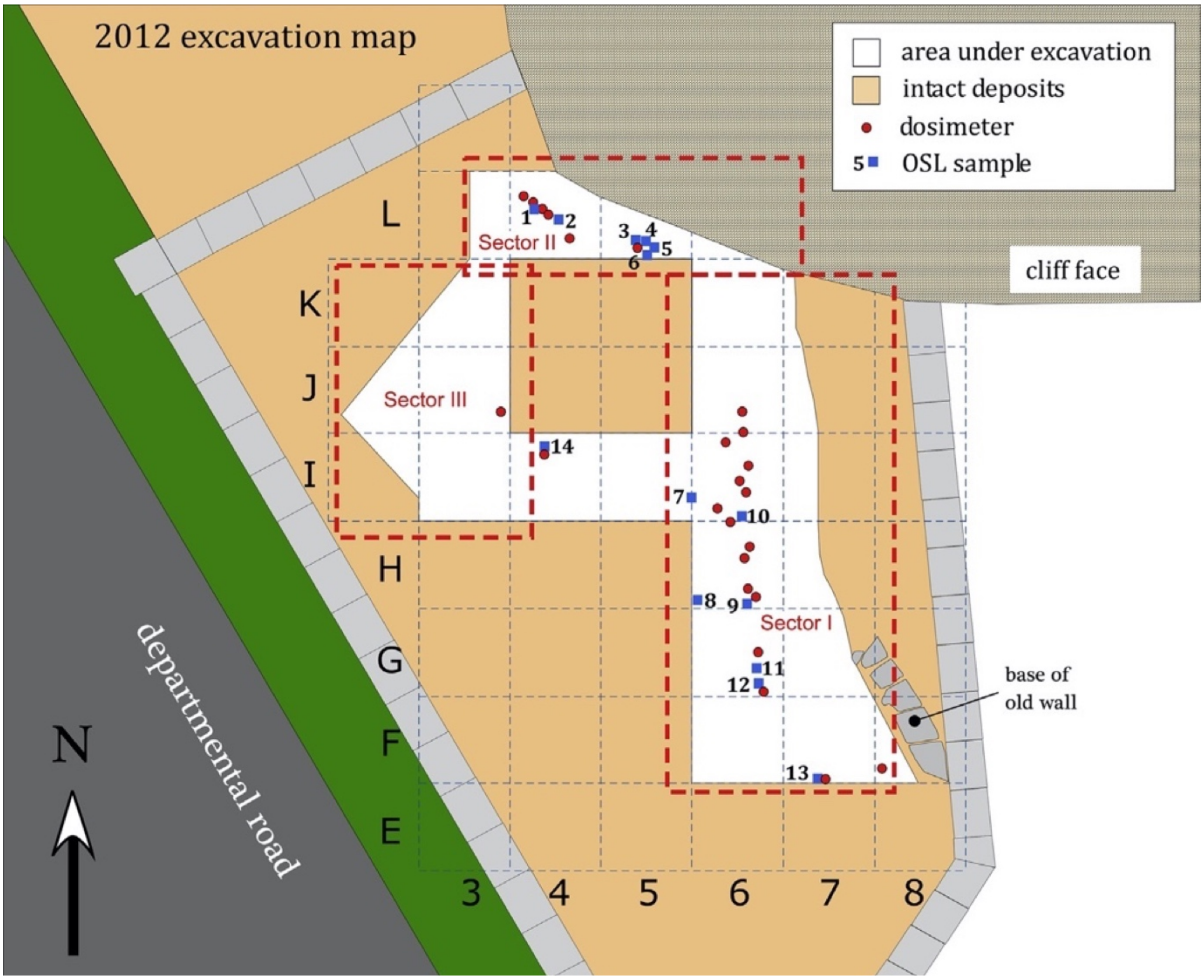

Figure 13: Location of the OSL samples in the newly excavated sectors in the western part of the site (Guérin et al. 2015, 150)

In 2017, Frouin *et al.* published new dates for the La Ferrassie stratigraphy by comparing several infrared stimulated luminescence signals from the western excavation area (fig. 15). It was confirmed that the first layer of the sequence was formed around 90.000 years ago. The beginning of the Middle Palaeolithic sequence (layer 2) was dated to between ~74.000 and 62.000 years ago, during MIS 4. Layer 3 was deposited between ~57.000 and 44.000 years ago. Layers 4 is dated to MIS 4, with two samples dating to ~44.000 and ~50.000 years ago. The uppermost part of the Mousterian sequence, layer 5, dates to ~43.000 years ago (Frouin *et al.* 2017, 139-140). In 2020, Talamo *et al.* performed an extensive study of the layers in the Western Sector of the La Ferrassie site. The layers 1-9 from the western sector of the excavations in the 2010s by A. Turq are described. Radiocarbon dating was applied to animal bone samples from layers 2 through 9. The uncalibrated dates in ^{14}C BP are noted in the study. Layer 1 consists of red sandy material including accumulations of rock fragments and iron grains, deposited by a small stream at the cave entrance. Layer 1 is outside the range of radiocarbon dating. Layer 2 consists mostly of yellow sand, which is partly cemented and calcareous. The layer also contains many rock fragments and limestone blocks and shows modification from freezing conditions. The date of this layer is >49.000 ^{14}C BP. Layer 3 includes silty coarse to medium sand that is poorly sorted and contains limestone blocks and roof fall. The layer is dated to the ages ranging between 47.480 and 43.140 ^{14}C BP. Layer 4 lies sharply over the previous layer and comprises compact silty medium sand with an abundance of bone and chert pieces, including some burnt bone. The age of the layer is 41.000 to 38.050 ^{14}C BP. Layer 5 grades upwards and is made up of 'reddish yellow pebbly silty sand', with much platy limestone and many bones and lithics. The dates range between 43.520 to 39.740 ^{14}C BP. The age inversion of layers 4 and 5 may be explained by site formation processes. Layer 6 consists of brown silty fine sand that is non-calcareous and includes some rocks, flints, and bone. The layer dates to 40.890-32.450 ^{14}C BP. Layer 7 lies gradually but clear on top of layer 6 and includes calcareous brown sand silt, and lithics and bones. It yielded an age of 35.210 to 32.250 ^{14}C BP. For layers 8 and 9, four samples were used to date them to the Upper Palaeolithic (Talamo *et al.* 2020).

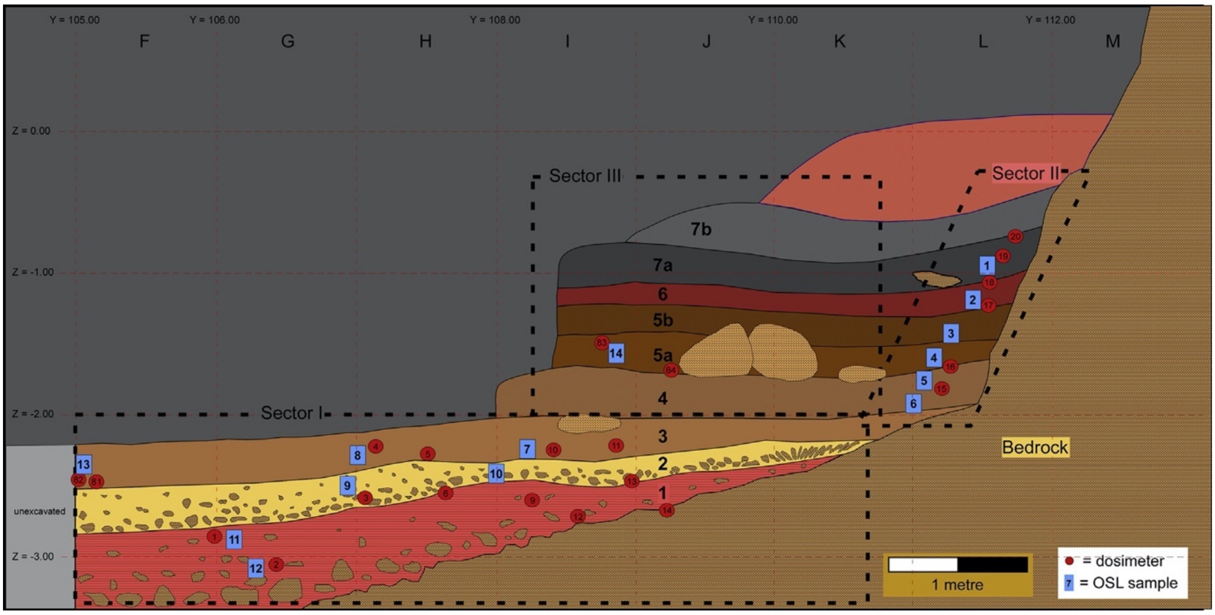

Figure 14: Schematic overview of the stratigraphical layers in the western part of the site (Guérin et al. 2015, 152)

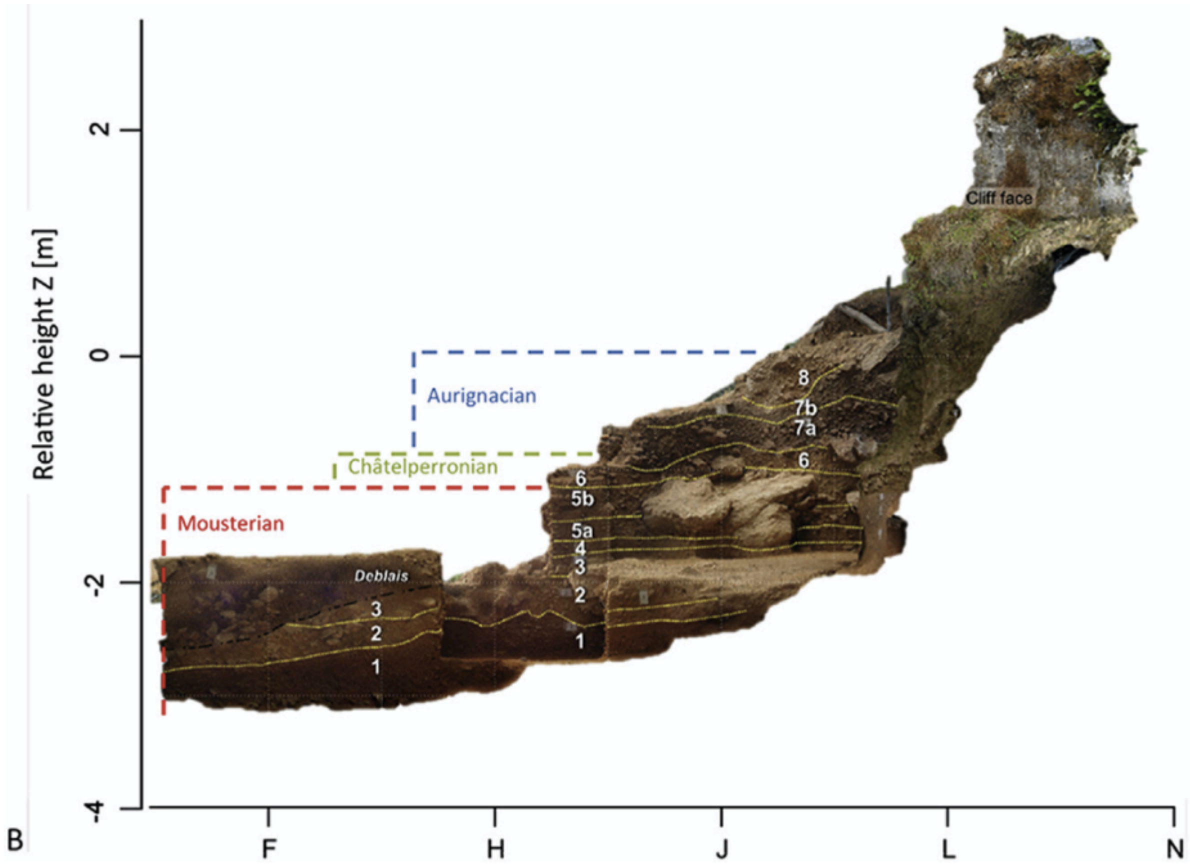

Figure 15: Stratigraphic section of La Ferrassie indicating the chronological sequences (Frouin et al. 2017, 133)

4.3 Description of the burials

La Ferrassie 1

The La Ferrassie 1 Neanderthal is the burial of an adult male who was discovered in 1909 (fig. 16). The burial was located in the most western part of the rockshelter, towards the back of the shelter. The skeleton is virtually complete and directed along an east-west axis, with its head located to the west (fig. 17). The body of the decedent was laid on its right side and partly flexed (Pettitt 2011, 131-132; Gómez-Olivencia *et al.* 2018, 14-15) The cranium is located higher topographically, compared to the pelvis remains (Balzeau *et al.* 2020, 7). The burial is associated with a deliberately excavated grave cutting. In this grave cutting, a longbone fragment containing multiple parallel lines was found. Additionally, three large stone slabs were situated in close proximity to the body, two of them were placed next to the torso and one underneath the head. The skeleton was also associated with Mousterian lithics and fragmentary faunal remains, which possibly derived from the occupation layer (Pettitt 2011, 129, 131-132; Gómez-Olivencia *et al.* 2018, 14).

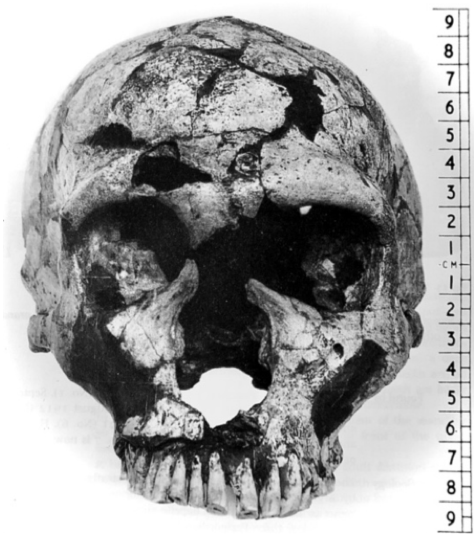

Figure 16: The La Ferrassie 1 skull (Day 1986, 37)

Figure 17: The La Ferrassie 1 burial by Capitan and Peyrony (Pettitt 2011, 133)

La Ferrassie 2

The La Ferrassie 2 burial is an adult female Neanderthal who was discovered the year after LF 1. The burial was located in the most western part of the rockshelter, 50 cm west of LF 1, positioned head-to-head. The skeleton was relatively complete and placed along an east-west axis, with its head located to the east. The deceased was placed on its right side and partly flexed (Pettitt 2011, 132; Gómez-Olivencia *et al.* 2018, 14). The cranium is located higher topographically, compared to the pelvis remains (Balzeau *et al.* 2020, 7). La Ferrassie 2 is associated with Mousterian lithics, but there is no evidence of a related depression (Pettitt 2011, 132; Gómez-Olivencia *et al.* 2018, 14).

La Ferrassie 3

La Ferrassie 3 is the burial of a 10-year-old Neanderthal child. The grave is located somewhat centrally in the cave, 4 meters to the east of La Ferrassie 1 and 2. The burial is positioned parallel to La Ferrassie 4, only separated by 40 cm. The corpse was situated in the grave along an east-west axis. La Ferrassie 3 is associated with an artificial grave that has an elongated oval shape, measuring 0.7 x 0.3 m in dimensions. Furthermore, the pit was filled with stony rubble (Pettit 2011, 134).

La Ferrassie 4

The La Ferrassie 4 burial consists of two neonates placed together in one grave. The burial is located somewhat centrally in the cave, 4 meters to the east of La Ferrassie 1 and 2. The grave is positioned parallel to La Ferrassie 3, only separated by 40 cm. The neonates are directed in the grave along an east-west axis. La Ferrassie 4 is associated with an artificial grave that has an elongated oval shape, measuring 0.7 x 0.3 m in dimensions. Furthermore, the pit was filled with stony rubble (Pettit 2011, 134).

La Ferrassie 5

The La Ferrassie 5 Neanderthals is the burial of a foetus. The skeleton is partially preserved close to the northern rear bedrock wall of the cave. The foetus is associated with a small oval (bowl-shaped) depression, which measures 0.4 x 0.3 m, in which it was laid. Furthermore, La Ferrassie 5 is linked to a mound, one of several in the centre of the cave, which covered the skeleton. At the base of that mound, tree flint scrapers were found (Pettitt 2011, 134).

La Ferrassie 6

La Ferrassie 6 is the burial of a Neanderthal child of about 3 years old. The skeleton is partially preserved and located at the most eastern end of the cave, not near any of the other burials. Its orientation is along an east-west axis. The child was placed in a bowl-shaped depression, of which there are six in total irregularly spaced over several meters in the east side of the cave with no clear patterning. The depression is sub-triangular and measures 1.4 x 0.3 m in maximum dimensions. A large limestone block (0.8 m), also sub-triangular in shape, covered the burial (fig. 18). The block was in turn covered with several cup-marks, seen as artificially produced. The burial is further associated with three Mousterian tools, which were found in the depression (Pettitt 2011, 134-135).

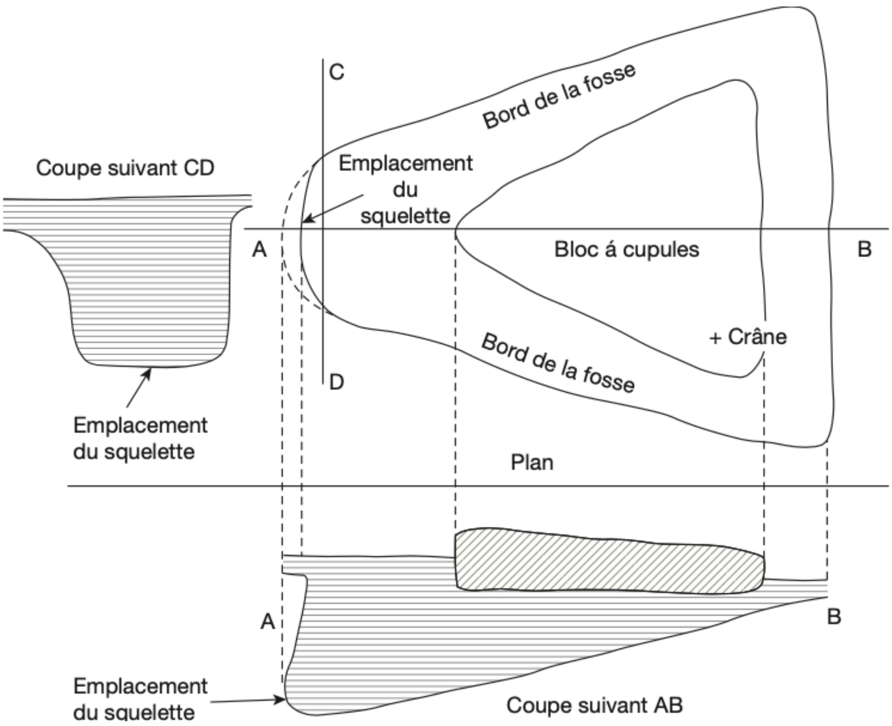

Figure 18: Plan and section of the La Ferrassie 6 burial (Pettitt 2011, 135)

La Ferrassie 8

The La Ferrassie 8 two-year-old child burial is situated at the rear bedrock wall to the north of the rockshelter. It is placed between the wall and the mound that covers La Ferrassie 5, near the group of mounds. The direction of the skeleton is along an east-west axis. The cranial remains are located 30 cm higher topographically than the pelvis remains. In which position the child was laid in the grave is not clear because no limb bones were recovered, except for four hand phalanges. The child was placed in a pit that was deliberately dug in a sterile sediment layer, named layer M2. This depression measures 0.8 x 0.3 m and is roughly rectangular. The burial is associated with the mounds in the rockshelter, and a few animal bones and lithics, which possibly derive from overlying layers. A hominin bone from the M2 layer was directly dated to 41.700-40.800 cal BP (Pettitt 2011, 134; Balzeau *et al.* 2020).

An overview of the characteristics of the La Ferrassie burials is available in table 1.

4.4 Spatial distribution of the burials

Remarkably, the palaeotopography of the site has been significantly modified. In the centre of the cave, three rows of mounds are present. Furthermore, in the eastern corner, six bowl-shaped depressions are situated, which appear to be randomly placed. Additional to those alterations, pits were artificially dug to place the deceased into (Pettitt 2011, 131-136).

The La Ferrassie burials are spatially divided into four groups. La Ferrassie 1 and 2 are located close to each other near the rear wall in the western corner of the rockshelter. Their heads are separated by 50 cm. The second group comprises La Ferrassie 3 and 4, who are situated in a central position in the cave, separated by only 40 cm. La Ferrassie 5 and 8 lie in close proximity to each other and near the back wall of the cave in the most northern part. Close to them are the rows of mounds, of which one covers La Ferrassie 5. La Ferrassie 6 is located in the most eastern part of the shelter among several bowl-shaped pits (fig. 19).

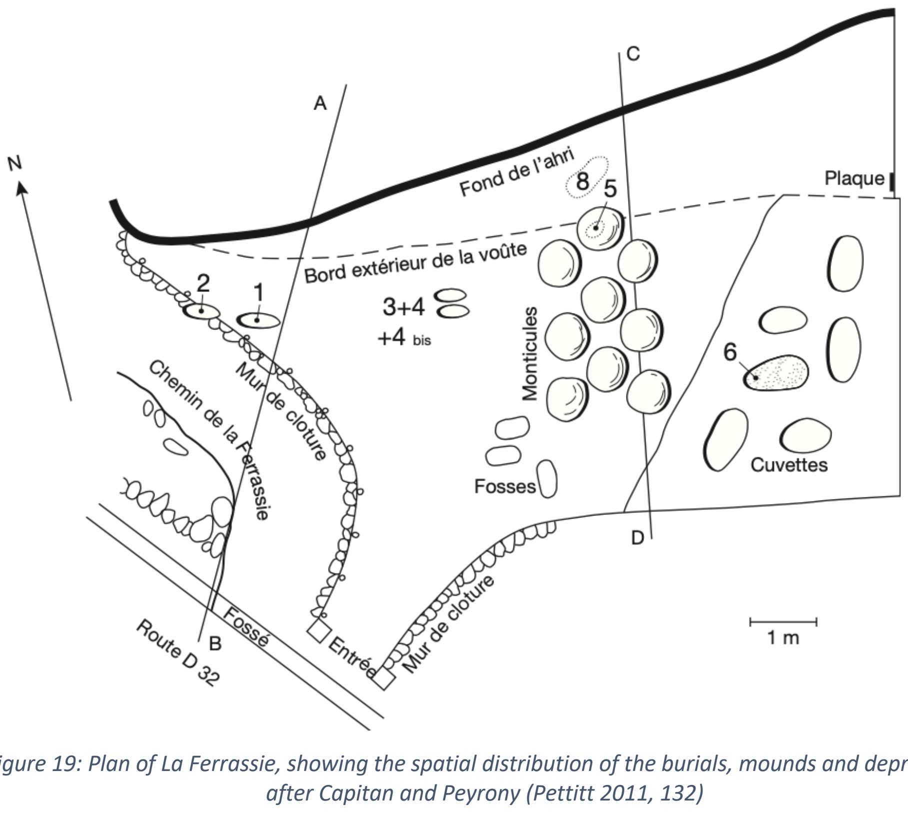

Figure 19: Plan of La Ferrassie, showing the spatial distribution of the burials, mounds and depressions, after Capitan and Peyrony (Pettitt 2011, 132)

Table 1: Overview of the characteristics of the La Ferrassie burials

Burial	Age, sex	Grave orientation	Placement and resting plane	Grave morphology	Associated features	Date
LF1	Adult male	East-west	Laid on right side, partially flexed. The cranial remains are located higher topographically than the pelvis remains.	Deliberately excavated grave cutting	Incised longbone fragment. Mousterian lithics. Three large stone slabs: under the head and next to the torso. Head-to-head with LF2, separated by 50 cm.	54-40 ka BP, based on associated geological levels
LF2	Adult female	East-west	Laid on right side, partially flexed. The cranial remains are located higher topographically than the pelvis remains.	Not existent	Head-to-head with LF1, separated by 50 cm.	54-40 ka BP, based on associated geological levels
LF3	~10-year-old child	East-west		Artificial grave of elongated oval shape (0.7x0.3m). Grave filled with stony rubble.	Parallel to LF4, separated by 40 cm.	
LF4	Neonate	East-west		Artificial grave of elongated oval shape (0.7x0.3m). Grave filled with stony rubble.	Parallel to LF3, separated by 40 cm.	
LF5	~6-7-month foetus			Small oval (bowl-shaped) depression (0.4x0.3m)	Overlying sediment mound: localized area of modification of the palaeotopography of the shelter. Three flint scrapers. LF8.	
LF6	~3-year-old child	East-west		Sub-triangular depression (1.4x0.3m), covered by a sub-triangular block (0.8m)	Six irregularly spaced bowl-shaped depressions: localized area of modification of the palaeotopography of the shelter.	
LF8	~2-year-old child	East-west	The cranial remains are located higher (30cm) topographically than the pelvis remains.	Roughly rectangular deliberately dug pit (0.8x0.3m)	Sediment mounds: localized area of modification of the palaeotopography of the shelter. Few animal bones, few lithics (possibly from overlying layers). LF5.	41,7-40,8 ka BP, layer M2

4.5 Concluding remarks

The bodies of La Ferrassie 1 and 2 were placed in very similar positions (on their right side and partially flexed) and placed along the same axis, although their heads were in opposite directions. Additionally, they are separated from the other burials in their own corner of the rockshelter. For three individuals, La Ferrassie 1, 2, and 8, it is known that the cranial remains are located higher topographically than the pelvis remains. All the burials whose grave orientation is known, are directed along an east-west axis. Furthermore, all the burials are placed in a depression, except La Ferrassie 2, although the morphology of the pits differs. Another curious similarity occurs between the burials of La Ferrassie 5 and 6. Both burials are associated with three Mousterian flint tools.

5. Shanidar Cave

5.1 Introduction to the site

Shanidar Cave or Shkaft Mazin Shanidar (Big Shanidar Cave) is located in the Zagros Mountains in the northwest of Iraqi Kurdistan (fig. 20). About 2.5 km from the Greater Zab River, the cave lies at an elevation of 745 m. Shanidar Cave is one of the largest of several karstic caves that can be found in the Zagros Mountains.

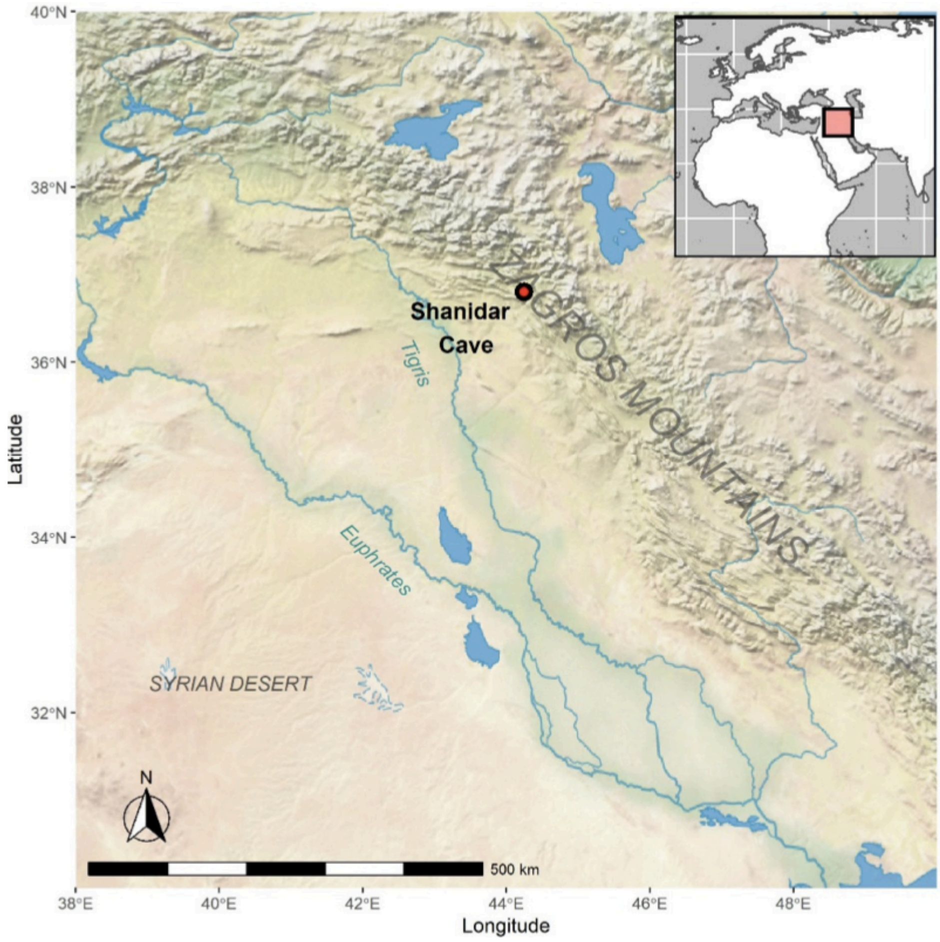

Figure 20: Location of Shanidar Cave (Tilby et al. 2022, 2)

The mouth of the cave faces to the south and measures about 25 x 8 m (w x h) (fig. 21). The interior of the cave extends back roughly 40 m and its maximum width is 53 m, composing a floor surface of about 1200 m^2 (Pettitt 2011, 122; Tilby *et al.* 2022, 2). The cave is protected from the cold winds in the winter and provides a communal living space to Kurdish goatherds still in modern times. Its long history of occupations makes Shanidar cave one of the longest successively inhabited caves in the Near East (Solecki 1955, 170).

Figure 21: Shanidar Cave (Pomeroy et al. 2020b)

In the cave, at least ten Neanderthal individuals were discovered, consisting of seven adults and two infants. Some of whom were probably placed there by natural causes such as rockfall (Shanidar 1, 2, 3, 5, and 7), but for at least four individuals it seems likely that they were purposely buried, which are Shanidar 4, 6, 8, and 9. (Cowgill *et al.* 2007; Pettitt 2011, 90-91, 123). The Neanderthal remains were significant discoveries in the field of Palaeolithic archaeology. They yielded new insight into the biology, social behaviour, interpersonal violence, diet, demography, and health of Neanderthals among other aspects. However, the site is perhaps best known for its new understanding of Middle Palaeolithic mortuary behaviour and the evolutionary origin of deliberate burial (Pomeroy *et al.* 2017, 102; Pomeroy *et al.* 2020a, 12).

Shanidar Cave was initially investigated by Ralph Solecki during his archaeological survey in Iraq in 1951. He excavated a test trench and the material he recovered made him decide to come back for a full excavation (Trinkaus 1983, 14). Subsequently, a part of the cave was excavated between 1951 and 1960 by Solecki and his team during four field seasons (Solecki 1972). The expedition was administered on behalf of the Iraq Directorate-General of Antiquities and the Smithsonian Institution. During these excavations, Solecki dug a trench of 14 meters deep and measuring 20 by 6 meters in dimension. It was dug roughly in the centre of the cave in a more or less north-south orientation (fig. 22). Subsequently, a deep cultural sequence was exposed. In the Mousterian layer D, the Neanderthal remains of Shanidar 1-9 were discovered. In 1953, the first Neanderthal remains were discovered, specifically Shanidar 7. Shanidar 1, 2, and 3 were discovered in the spring of 1957. Finally, in 1960, Shanidar 4, 5, 6, 9, and 8 were identified. The four burials (Shanidar 4, 5, 8, and 9) were found clustered together and were excavated over the course of one week. (Trinkaus 1983, 14; Pettitt 2011, 122; Pomeroy *et al.* 2020a, 11; Tilby *et al.* 2022, 2-3). The uppermost individual of the cluster, Shanidar 4, was discovered first (fig. 23). The excavators decided to remove the Neanderthal remains from the trench in a sediment block of about 1 m^2 and 50 cm deep. The block was transported to the Baghdad Museum on top of a taxi roof, during which the sediments became disturbed. When the block was excavated at the museum it became clear that the block contained four individuals, three adults and one infant. However, due to the disruption of the block, the exact stratigraphic relationships between the individual skeletons are impossible to ascertain (Pomeroy *et al*. 2020a, 12-13). The adult bones in the burial cluster that were duplicates or did not match the size of Shanidar 4 were assigned to Shanidar 6, and any further double bones were ascribed to Shanidar 8 (Pomeroy *et al.* 2020a, 22).

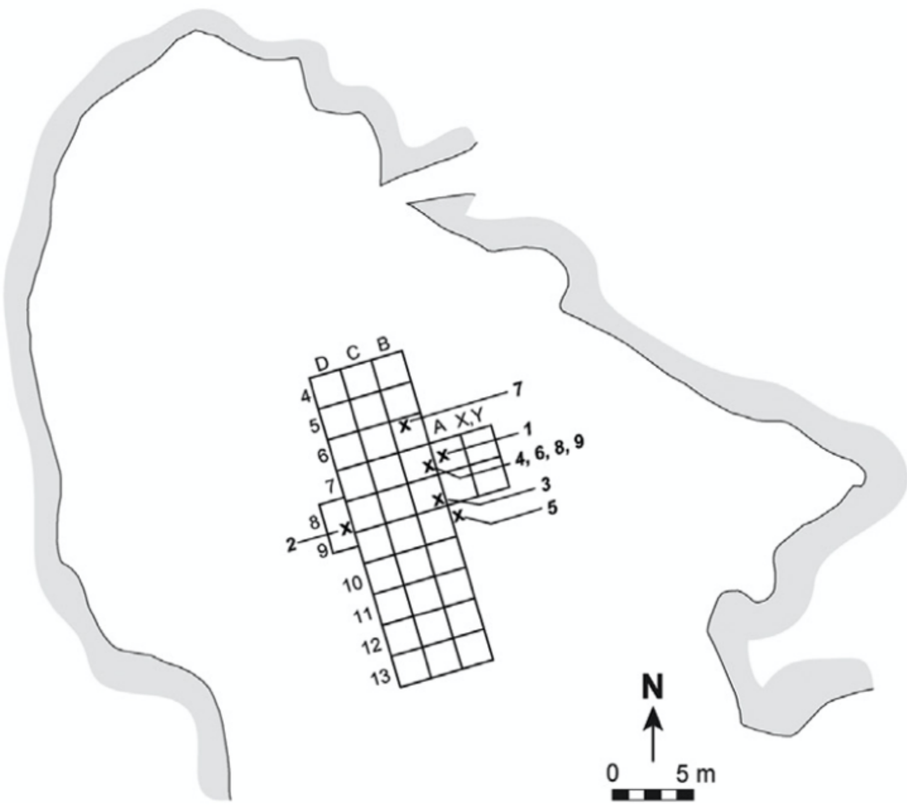

Figure 22: The location of Solecki's excavation grid in Shanidar Cave (Pomeroy et al. 2017, 103)

Figure 23: The centre of this image shows Shanidar 4 in situ, below the triangular stone. Ralph Solecki sits on the left in the foreground. 2: rockfall, 3: partly breccia-filled void, 4: triangular stone (Pomeroy et al. 2020a, 16).

After the excavations, the Palaeolithic faunal remains from the site were transported to the United States for examination. In 2000, when they were transferred to the Smithsonian Institution, a detailed and systematic analysis of the remains resulted in the identification of human remains. A tenth Neanderthal individual was discovered and published by Cowgill *et al.* (2007). They found the lower leg and foot bones of an infant (1-2 years), which was designated Shanidar 10. The remains derive from a depth of 8,67-8,84 meters in the trench. They are the lowest and thus the oldest human remains found in the cave.

Recent ongoing excavations led by Graeme Barker started in 2015, after an invitation from the Kurdish Regional Government in Iraq in 2014. The project aims to utilize modern scientific techniques to produce an accurate occupation sequence of the cave and to generate a local record of the climate, environment, and culture. The excavation focuses on the eastern side of the original trench, where most of the Neanderthals were found by Solecki (fig. 24). In 2015 and 2016, the excavations yielded additional remains assigned to Shanidar 5. The newly discovered Neanderthal remains were located next to the area where Shanidar 5 was found in 1960, at approximately 5 meters below the cave floor. The arrangement, crushing, degree of preservation, morphology, and age at death of the new fossils were consistent with the old discoveries. Additionally, all the newly identified bones were initially missing during the original excavation of the adult male Neanderthal (Pomeroy *et al.* 2017). In 2017, new hominin remains were discovered at a depth of 7 meters below the cave floor. The bones were located in the direct vicinity of where the Shanidar 4 cluster was found. The remains were mostly situated in their correct anatomic position. In 2018, they were excavated in plan. The evidence from the individual and its associated features strongly suggests deliberate burial. This individual probably belongs to Shanidar 6 or 8, the adult females from the burial cluster. Another possibility is that the lower limbs of Shanidar 6 belong to this new individual (Pomeroy *et al.* 2020a).

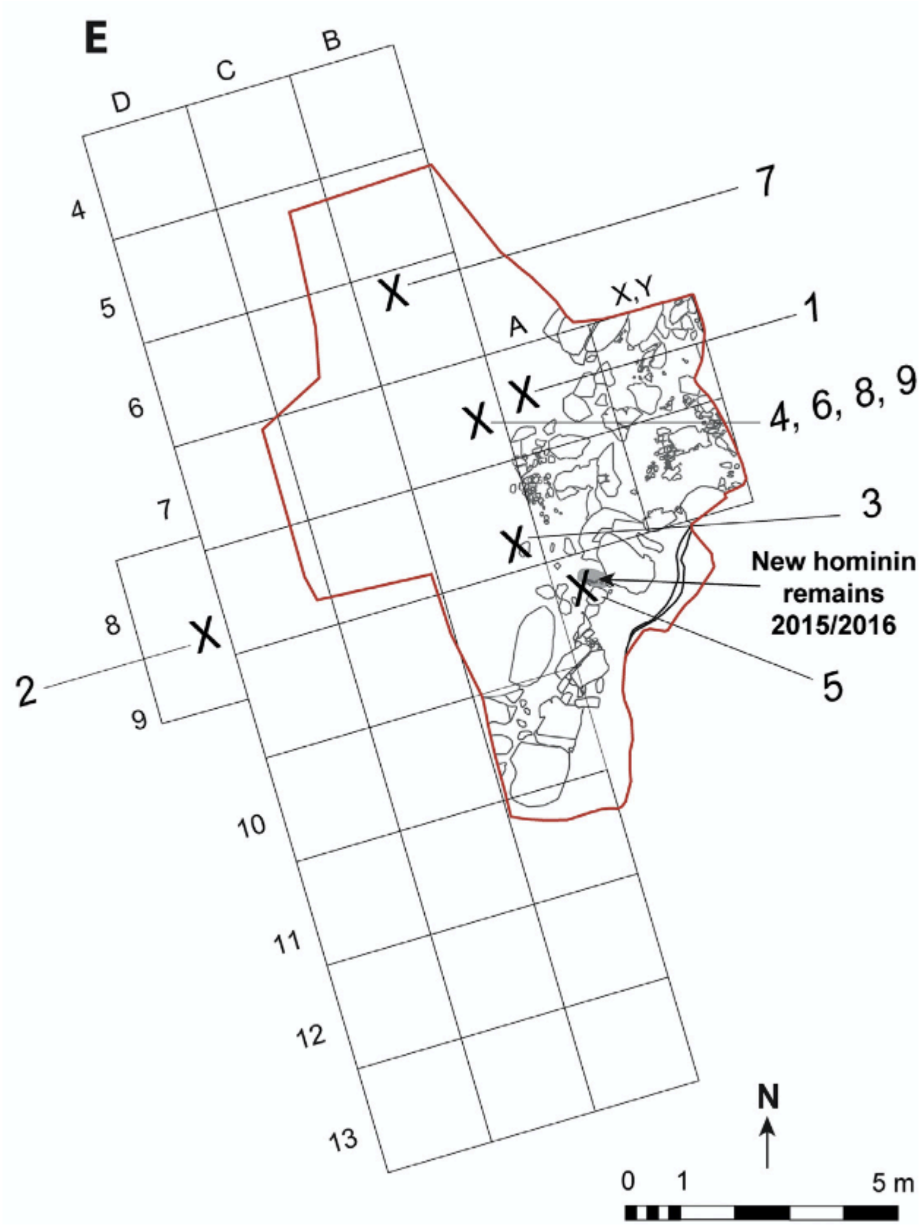

Figure 24: Plan of Solecki's excavation grid and the location of the recent excavations outlined in red (Pomeroy et al. 2017, 103)

The numbering of the Shanidar fossils has been somewhat inconsistent during and in the aftermath of the first excavations. The fossils were initially given Roman numerals in the order of their hominin status recognition but later confused in a descriptive publication. Later, the fossils were given their current numbers to avoid further confusion (tab. 2). The present numbers are employed in most current publications, but sometimes the original numbering is used, such as in Pettitt (2011).

Table 2: Naming of the Shanidar fossils, burials in bold (after Trinkaus 1983, 16)

Original destination	Current number
I	1
II	2
III	3
IV	**4**
V	5
VI	**6**
"child"	7
VII	**8**
VIII	**9**

5.2 Stratigraphy and chronology of the site

During the first excavations led by Solecki, four cultural layers were identified and radiocarbon-dated in the 14-meter profile (fig. 25). The top layer is designated modern to Neolithic, named layer A. It was dated from ~7.000 years ago to the present. The underlying layer is layer B1, which is Proto-Neolithic. The next layer is B2, determined as a Mesolithic layer. Layer B was dated from ~12.000 to 10.600 years ago. Layer C lies beneath layer B and is Upper Palaeolithic Baradostian (local archaeological culture). It was dated from 35.540 to 28.700 years ago. The lowest layer is layer D, the Middle Palaeolithic Mousterian layer, which extends down to the bedrock. In this layer, the Shanidar Neanderthals were discovered. All the hominins were associated with Levalloiso-Mousterian lithics, ash and hearths, and faunal remains, placing them all inside an occupation context. The layer is about 8,5 m thick, making it the largest layer of all. The upper part of this layer was dated to ~46.900 years ago and it is uncertain when this sequence begins. It was estimated to be as old as 100.000 years based on sedimentation rates. As is evident, large hiatuses occur between the layers from layer B2 downwards (Solecki 1955, 172; Tilby *et al.* 2022, 3)

The vertical spatial distribution of the Solecki Neanderthal remains can be described in two stratigraphic horizons. The uppermost group of skeletons is located near the top of layer D and includes Shanidar 1, 3, and 5. They are situated at a depth between 4,4 and 5,4 m. The lowermost group includes Shanidar 2, 4, 6, 8, and 9, who are positioned in the middle part of layer D. These individuals lie at a depth between 7,2 and 7,9 m. At 7,5 m, the uppermost skeleton of the burial cluster (Shanidar 4) was discovered (Cowgill *et al.* 2007, 214).
There appeared to be two concentrations of occupational debris, one located in the upper part of the layer and containing the topmost group of fossils, and the other slightly below the lowest group of skeletons (Trinkaus 1983, 9).

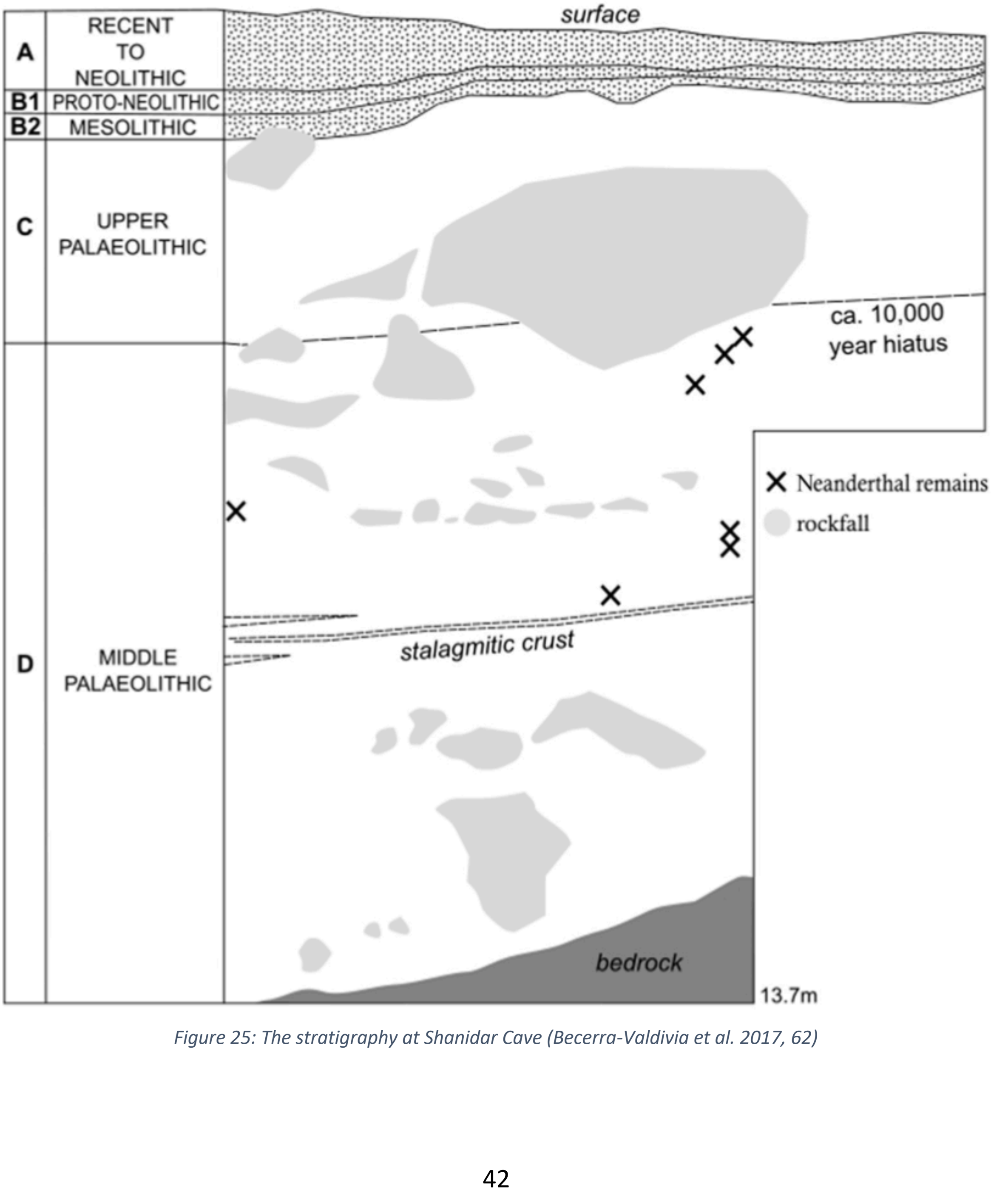

Figure 25: The stratigraphy at Shanidar Cave (Becerra-Valdivia et al. 2017, 62)

Cowgill *et al.* (2007, 214) suggest that the upper part of layer D dates to between ~40.000-50.000 years ago, aligning with the initial dates from Solecki. The burial cluster is probably older than 50.000 years and thus beyond the range of radiocarbon dating. Solecki proposed that the middle part of layer D dates to 60.000-70.000 years ago. In 2017, the original radiocarbon dates from the Middle- to Upper Palaeolithic transition (layer D to layer C) were remodelled and yielded a date of 43.200-39.600 cal BP (Becerra-Valdivia *et al.* 2017, 63). The upper Neanderthal remains (Shanidar 1, 3, and 5) have produced initial dates of about 55.000-45.000 years ago, dated by the University of Oxford (Pomeroy *et al.* 2020a, 13) The new skeletal remains from Pomeroy and the associated burial group (Shanidar 4, 6, 8, and 9) are preliminarily dated to between 70.000 and 60.000 years ago (Pomeroy *et al.* 2020a, 22). The recent excavations at Shanidar Cave provided a lot of material that is currently still being dated and the preliminary AMS and OSL results roughly align with Solecki's chronology, including the beginning of the cave sequence dating back to at least 100.000 years. However, the new dates do not indicate the considerable hiatus between layers C and D. The Shanidar stratigraphy is highly complex, due to disturbances caused by multiple rockfall events and occurring mudflows. The Middle Palaeolithic layer D shows a series of Neanderthal occupations that were alternated with at least four rockfall events, as determined by Solecki. The Neanderthal remains are all in the immediate vicinity of fallen rocks (Pettitt 2011, 122-123; Tilby *et al.* 2022, 3-4).

5.3 Description of the burials

Here, the relevant skeletons will be discussed, which are the burials of Shanidar 4, 6, 8, 9, and the remains described by Pomeroy *et al.* (2020a). It is possible that one of the individuals of the burial cluster was placed in a natural niche, containing different deposits than outside of that fill (Pettitt 2011, 124).

Shanidar 4

Shanidar 4 was assigned a male upon its discovery, aged 30-45 years old. His bones were extremely fragile. The skeleton was placed in a foetal position on its left side, right arm crossing the body and its legs partially flexed (Trinkaus 1983, 24; Pettitt 2011, 89; Pomeroy *et al.* 2020a, 20). The skeleton was contained within a niche of large rocks (Pettitt 2011, 89). Shanidar 4 is called the 'flower burial' because pollen of flowering plants were found associated with the skeleton and interpreted as evidence for the deliberate placing of flowers with the grave. This interpretation has been decisively opposed, instead pointing to a burrowing rodent who caused the deposition of pollen (Pettitt 2011, 124; Pomeroy *et al.* 2020a, 12).

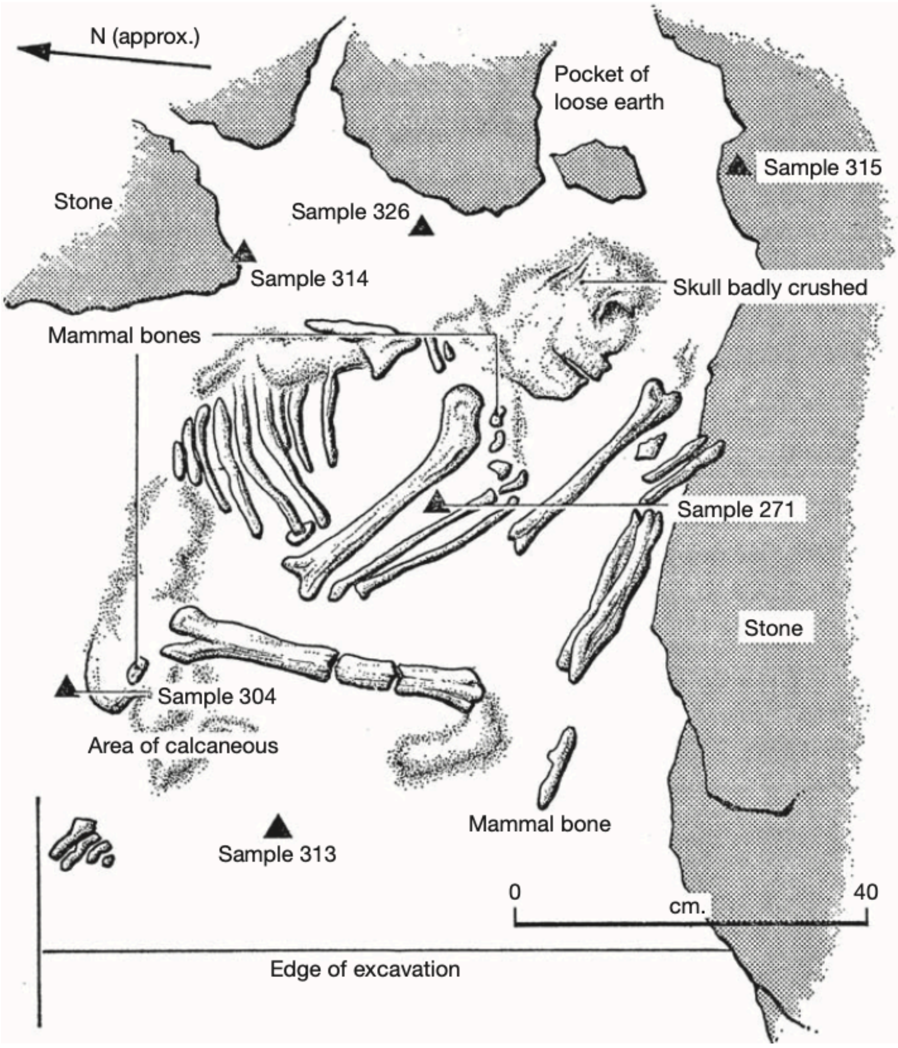

Figure 26: Plan of the Shanidar 4 burial (Pettitt 2011, 125)

Shanidar 6

Shanidar 6 is an adult female (20-35 years), whose bones were found in good condition. Probably located somewhat southwest and below Shanidar 4. As discussed previously, the bones were disturbed during their transport and their original position is difficult to ascertain. However, the remains of Shanidar 6 were already mixed in with the bones of Shanidar 4 in situ, possibly the result of Shanidar 4 being buried above them. Trinkaus notes that Shanidar 6 seems to have been buried in a position that resembles Shanidar 4, based on the position of the bones of the arms. This individual would then have laid on their left side in a semi-flexed position (Trinkaus 1983, 28).

Shanidar 8

Shanidar 8 is a very incomplete young adult female. As this individual is a collection of dislodged loose bones, it is not possible to reconstruct orientation or placement (Trinkaus 1983, 29).

Shanidar 9

Shanidar 9 are the partial remains of an infant child (6-12 months old), only several vertebrae were recovered. Unfortunately, their original location in situ was lost (Trinkaus 1983, 29; Pettitt 2011, 90).

Shanidar individual described by Pomeroy *et al.* (2020a)

This individual is a middle- to older aged adult, located directly near Shanidar 4. The individual consists of mostly the upper body. The highly fragmented skull lay on its left side, facing the south. The left hand was located below the skull, the fingers flexed, the wrist tightly flexed, the elbow also flexed, and the forearm positioned horizontally orientated east-west across the body. The right arm was horizontally orientated, flexed at the elbow, and the fingers were also tightly flexed. The position of the bones suggests that the decedent was placed on its back, while the head rested on its left side on top of the left hand. The lower limbs have not been discovered but are suggested to be in a flexed position.

The burial is associated with a triangular stone that was positioned to the north of the skull, above some of the ribs and covering a few millimetres of the skull fragments. The excavators state that this suggests that the stone was originally positioned behind the head and right shoulder. Furthermore, a single lithic artefact (a snapped chert blade-flake fragment) was found between the ribs, which may have significance. The remains were situated in a recognizable curved depression, whose anthropogenic origin is not confirmed, but strongly suggested. Plant material is also associated with the skeleton, and its analysis is still ongoing (Pomeroy *et al.* 2020a).

An overview of the characteristics of the Shanidar Cave burials is available in table 3.

Table 3: Overview of the characteristics of the Shanidar burials

Burial	Age, sex	Grave orientation	Placement and resting plane	Grave morphology	Associated features	Date
Shanidar 4	30-45-year-old adult male		Laid on its left side in semi-flexed foetal position. Right arm crossing the body.	Possible natural niche of large rocks	Shanidar 6, 8, and 9. Flower pollen.	~70-60 ka
Shanidar 6	20-35-year-old adult female		Laid on its left side in a semi-flexed position.	Possible natural niche	Shanidar 4, 8, and 9.	~70-60 ka
Shanidar 8	Young adult female			Possible natural niche	Shanidar 4, 6, and 9.	~70-60 ka
Shanidar 9	6-12-month infant			Possible natural niche	Shanidar 4, 6, and 8.	~70-60 ka
Shanidar individual from Pomeroy *et al.* 2020a	Adult	Possible east-west	Placed on its back, head laid on its left side. Left hand below the skull, right arm projecting laterally over the body. Possible flexed legs.	Scoop feature	Shanidar 4, and its burial cluster. Triangular stone. Single lithic artefact. Plant material.	~70-60 ka

5.4 Spatial distribution of the burials

The four burials were found in a cluster in the middle part of layer D. Shanidar 9 was the first individual to be buried. Then Shanidar 6 and 8 followed and lastly, Shanidar 4 was placed in the earth. Shanidar 6 is located about 10 cm below Shanidar 4. Shanidar 8 and Shanidar 4 lay next to each other. The sequential nature and the close proximity of the burials imply that the individuals were buried in a short period of time in a restricted area. The remains described by Pomeroy *et al.* (2020a) were located a little to the east of Shanidar 4, on virtually the same level.

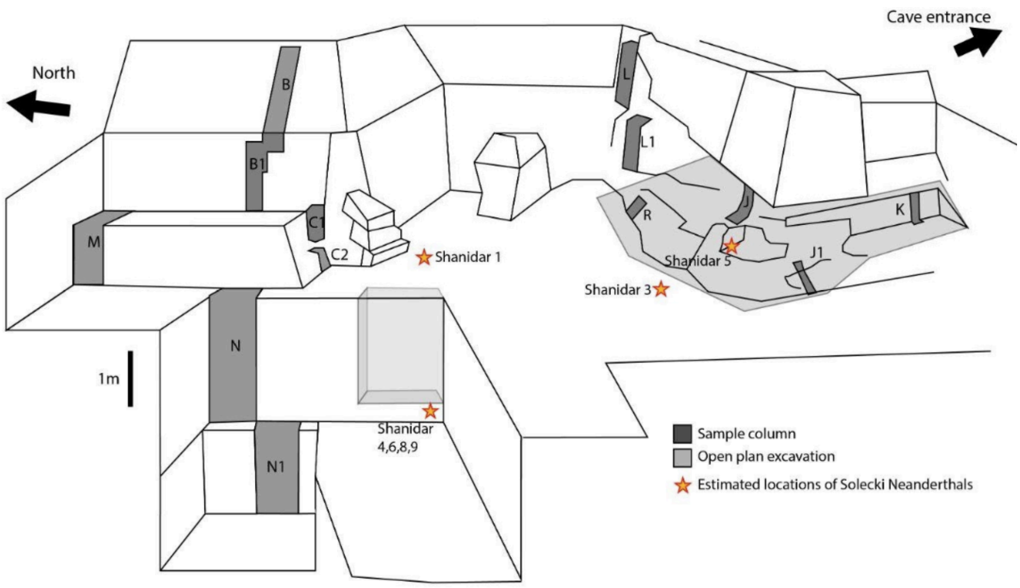

Figure 27: The location of the burial cluster in the excavated trench (Tilby et al. 2022)

5.5 Concluding remarks

Unfortunately, not much is known about the grave orientation of the Shanidar individuals. However, Shanidar 4 was not placed in an east-west orientation. It might be possible that the individual described by Pomeroy *et al.* (2020a) was orientated along an east-west axis, interpreted from the orientation of the forearm. As far as is discernible, the bodily position of Shanidar 4 and 6 appears to be similar, but the position of the individual described by Pomeroy *et al.* does not compare and is positioned differently. The information on the nature of possible grave morphologies has been compromised due to the way the burial cluster was excavated. Consequently, we cannot be certain about which individuals were placed in a natural or anthropogenic niche. However, the individual described by Pomeroy *et al*. makes a strong case for deliberate excavation of a grave, so it might not be a too far-fetched possibility for the other individuals.

6. Comparison and discussion

6.1 Comparing La Ferrassie and Shanidar

In this chapter, the collection of data from the most recent research of the sites of La Ferrassie and Shanidar Cave is interpreted and consequently compared. Thus, the sub-questions are discussed, which regard the spatial and chronological aspects within each site and between them. The similar and different patterns are laid out and finally, the cave as a burial place is raised for discussion.

Firstly, the chronological information of La Ferrassie is discussed. La Ferrassie has a long stratigraphy that proves difficult to date and the existing dates need to be refined. However, the results of a series of recent studies that utilize a range of modern dating techniques provide us with some useful dates. The Mousterian sequence seems to span approximately 25.000 years. To my knowledge, it is not clear in which Ferrassie-type Mousterian layer each burial was discovered. What is missing is a clear understanding of the continuity of the occupation of La Ferrassie. Dates that are directly associated with the La Ferrassie skeletons are needed in order to better understand if the burial activity at this site was a practice that spanned many generations. It is clear that La Ferrassie 1, 2, and recently also 8, are the most well-studied burials for which the most data is available. New dates from all individuals are necessary but the skeletons were all removed from their contexts in the beginning of the 20th century, so this is a very difficult task.

Secondly, the spatial aspects of the La Ferrassie burials are considered. Although the burials are not individually and accurately dated, they were probably not placed there in one event, seeing as they are distributed over the cave, and not concentrated in one area. The spatial association between La Ferrassie 1 and 2, La Ferrassie 3 and 4, and La Ferrassie 5 and 8, appears intentional and might indicate a degree of organisation. Still, the pairs cannot be regarded as true double burials (Pettitt 2011, 137). Nevertheless, it is remarkable that for at least two sets of burials (La Ferrassie 1 and 2, and La Ferrassie 3 and 4) a very thoughtful spatial relation between the graves is created. The intriguing association between them could suggest their similar double placement was intentional and holds significance. Generally, the uniformity of the east-west direction of the burials displays a certain amount of organisation.

The resemblance of the resting plane of La Ferrassie 1, 2, and 8 might indicate intention as well. Additionally, the practice to inter the bodies in the ground is an established procedure. All and all, the structure of the site demonstrates a degree of organisation, when considering the spatial and other corresponding aspects. It is possible that these aspects of uniformity were maintained over a large number of generations

Next, the available chronological data from Shanidar cave is analysed. Considering older and more recent studies on the dating of the Shanidar sequence, it is clear that that the Mousterian sequence of Shanidar Cave lasted quite long, along the lines of about 50.000 years. During this Mousterian occupation, there is a short period where at least four Neanderthals were buried in the same place. For at least this period, the cave had a mortuary function. Two scenarios for the formation of the burial cluster are possible. Either multiple Neanderthals were buried in the same place together, or they died on separate occasions and were deposited in precisely the same place. Both scenarios suggest complex mortuary behaviour of Neanderthals. Currently, it is not possible to distinguish between the two (Pomeroy *et al.* 2020a, 13). Again, to ascertain the precise continuity, the separate individuals need to be dated.

Considering the spatial aspects of the Shanidar burials, no observable similarities can be discerned. Shanidar 4 and 6 are partly placed in the same position. As such, the cluster of burials does not appear to have a structured nature and neither are there large anthropogenic modifications of the site present. Due to the occupation of the Cave by Kurdish goatherds during the excavations, Solecki had a limited area to his disposal for research and excavated his trench in the centre of the cave (Trinkaus 1983, 14). It is possible that the Neanderthal burials are not confined to the centre of the cave, and more individuals are located at this site. Perhaps with future discoveries to compare the current fossils to, the relationship between the individuals in the Shanidar 4 burial cluster can become clearer and a more complete picture on possible grave orientation and placement can form. Thus, the absence of a degree of organisation can also derive from a lack data from the site. However, excavations are still ongoing at Shanidar Cave. More publications on dates and stratigraphic relationships will arrive and possibly clear up certain uncertainties that are still present in this site.

Altogether, La Ferrassie and Shanidar cave are both places of multiple burial. Both sites possessed a mortuary function somewhere during their Middle Palaeolithic occupation sequence. At La Ferrassie, this function seems to extend for a longer period than at Shanidar Cave, where the mortuary behaviour is limited to a brief period of time. However, the Middle Palaeolithic sequence at Shanidar is longer than at La Ferrassie. The spatial structuring of the La Ferrassie site attests to a complex interaction with the dead. The location of the pits seems to be carefully sought out, and the palaeotopography is altered accordingly. Possibly, mortuary behaviour could have developed over time there. At the same time, no large changes in the palaeotopography of the landscape are visible at Shanidar, except for the probable anthropogenic depression of the most recently identified fossil. At La Ferrassie, the burials have a uniform orientation along an east-west axis, which is common for more Middle Palaeolithic burials (Riel-Salvatore and Clark 2001). This standardization is absent at Shanidar Cave. Regarding placement and resting plane of the burials, for the La Ferrassie burials for which we have this data (La Ferrassie 1, 2, and 8), there seem to be some similarities. The cranial remains of La Ferrassie 1, 2, and 8 are located higher topographically than the pelvis remains of these individuals and both La Ferrassie 1 and 2 are partially flexed and laid on their right side. At Shanidar cave, it is possible that two burials laid in similar positions. More data on these particular spatial aspects could add to the understanding of the mortuary behaviours because in several present-day cultures, the position of the body of the deceased is a significant aspect of their funerary practices, as well as the correlation with the sex and age of the deceased (Riel-Salvatore and Clark 2001). Ultimately, the mortuary practice at La Ferrassie and Shanidar Cave shows a clear contrast between them. In this study, the concept of on the one hand the unstructured nature of the burials at Shanidar Cave that spans a short period of time, versus on the other hand the organisation of the multiple burial clusters in extended time and space at La Ferrassie as specified by Pettitt (2011), was explored in more detail. The recent published data reviewed here along with the established sources on the burials at both sites strengthen this idea. The apparent variability of managing the death of a group member indicates that at least incidentally there existed a concept about the dead and their treatment (Pettitt 2011, 265). However, the detailed analysis of the spatial aspects of the Shanidar Cave burial shows that the burial cluster in itself displays an internal structure within the limited burial space in the Cave. The burials are placed in close proximity to each other and are clearly related vertically and horizontally, as well as existing within a short period of time. In my view, the burials at La Ferrassie and Shanidar Cave are both structured, albeit in their own way.

6.2 The cave as a burial place?

Cave burials have existed in most archaeological periods, from the Palaeolithic to the Middle Ages (Bergsvik and Skeates 2012). Just like most Neanderthal burials, the La Ferrassie and Shanidar burials were discovered in occupational layers, included in everyday life. Pettitt (2011, 131) suggests that even though places of multiple burial might indicate the emergence of an association between the dead and a specific location, it could also mean that the Neanderthals buried their dead at the location they happened to reside at that moment. However, despite their mundane context, the burial cluster of Shanidar Cave and the many interred individuals of La Ferrassie seem to imply that the caves also functioned as a place for burial at some moments in time. At La Ferrassie, the Neanderthal groups that inhabited the cave made it their own by altering the nature of the site. Just like at Bruniquel Cave in southwestern France where the Neanderthals altered their environment, the La Ferrassie Neanderthals showed their ability to understand the geophysical surrounding and coordinate amongst themselves to express their mortuary practice. Here, it could be argued that the cave plays an important role in the funerary practice of Neanderthals. At Shanidar Cave, this is less obvious, but they possibly chose the cave intentionally to dispose of their dead, which again argues for a mortuary function of the cave.

Another point of discussion that prehistoric cave burials raise, is whether caves were the typical place used for burial during this time. The existing evidence for Neanderthal burials derives exclusively from caves and rockshelter sites. However, these were only a few individuals, considering the enormous time span we examine. We should therefore suppose that open air burials also occurred among Neanderthals and should not concentrate our focus solely on the special cases that were remarkably preserved after all this time. Often, the focus is shifted towards the exceptionally well-preserved and spectacular sites, but we must keep in mind that they are generally exceptions to the rule. Thereby, the great preservation conditions in cave sites contribute to this bias we observe in the archaeological record. Even though other forms of burials become more frequent from the Upper Palaeolithic onwards, for example at open-air sites and later even organised in cemeteries, cave burials do not disappear in Europe. Throughout the Mesolithic, Neolithic, Bronze Age, Iron Age, Roman

Period, and Medieval Period, some caves retain their mortuary function at times (Orschiedt 2012). These impressive natural elements in the landscape were given meaning, possibly even symbolic. I would argue that the cave has functioned as a burial place throughout history, starting more than 100.000 years ago in the Near East where Neanderthals and modern humans invested energy in the disposal of the dead and thereby showed that specific (symbolic) meaning was attached to these particular places.

7. Conclusion

The Middle Palaeolithic is an important period in the development of mortuary behaviour. During this period, the emergence of places of multiple burial took place. The mortuary behaviour displayed by the Neanderthals at La Ferrassie and Shanidar shows that the same species gives different meanings to the passing of their conspecifics, just like their behaviour concerning the realm of the living varies from place to place. Places of burial can be elaborately shaped to give an organized meaning of the mortuary rites, as seen at La Ferrassie, as well as display no structured physical expression of their funerary actions, such as at Shanidar Cave. The diversity of responses to death is part of the emergence of the complex behaviour that would unfold in the Upper Palaeolithic. The data from La Ferrassie and Shanidar Cave demonstrates that the base for this highly complex behaviour is established in the Middle Palaeolithic and that the evolution towards true mortuary ritual knows many stages of mortuary expression, from cannibalism to funerary caching to formal burial.

Not only the act of burial itself is of importance, but the use of a fixed point in the landscape to concentrate the mortuary behaviour around is a critical step towards complex mortuary rituals as well. This type of behaviour evolves both in Neanderthals and modern humans. The cave as a place of burial is a part of the broader debate surrounding the evolution of human mortuary behaviour and must be given the appropriate attention. However, we must still consider the development of mortuary behaviour in the Middle Palaeolithic period outside of caves and note that this most likely played a large role as well, even if it is still invisible in the archaeological record.

To advance the study of mortuary variability in the future, it is critical to re-excavate important sites where possible. A lot of significant sites have been previously excavated under sub-optimal conditions and with outdated techniques. There is a need for modern stratigraphic analysis and accurate dating utilizing modern methods to, among other things, verify the original context of the finds. The recent analyses and re-evaluations of the chronology and materials from La Ferrassie and Shanidar Cave contributed substantially to the research on these sites and their role in the evolution of mortuary behaviour. Although there is still more to gain from further research there, such as the discovery of additional individuals, more precise dating and clearer archaeological contexts, it can function as an encouragement for other sites to be re-examined as well. An additional line of research that can be pursued in more depth is the study of the association of certain areas of the cave with the dead. It could be that some areas in the cave would be designated as a spot for burial and others would not. For example, the centre of the cave or the area near the entrance of the cave could be regarded as special locations. Regional and temporal patterns could be studied to add to the discourse surrounding variability. Furthermore, this study examines only two sites for reasons stated prior. However, subsequent studies could consider including more sites for a broader comparison. In order to carry out a valuable study, La Ferrassie and Shanidar Cave could be compared to the third Neanderthal multiple burial site of Amud Cave. At Amud Cave, three individuals appear to have been deliberately buried. In my view, comparison with sites containing single burials should be approached with caution. The sites of multiple burial clearly stand apart from other sites where a single individual received a simple burial. Alternatively, the *Homo sapiens* multiple burial sites of Skhūl and Qafzeh may be more fitting for comparison. Among these sites, there would be more characteristics to compare, such as the spatial relations between the graves and more data on the varied placements and grave morphologies would be available. This is fairly limited when considering places of single burial.

All and all, while the research on mortuary variability among Neanderthals has substantially advanced since the discovery of the first graves well over a century ago, there is still much to gain in light of future investigations of this highly fascinating behaviour.

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