The origins of enslaved people and what they tell us about the slave trade in South Africa: Analysing burials of enslaved individuals in and nearby Cape Town.

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TABLE OF CONTENTS.

LIST OF FIGURES PAGE

LIST OF TABLES PAGE

LIST OF APPENDICES

1. INTRODUCTION.

Between the seventeenth and nineteenth centuries, the African continent and its people were subjected to a large network and system of slavery by European colonial powers. This practice has had great implications in the development of African countries and the lives of the people involved, up until today. Most research regarding the slave trade during the colonial period has been focused on the Trans-Atlantic slave trade, centred around West Africa and the Americas (Collins, 2006, p. 325; Vink, 2003, p. 132). Hence, most information is known about these areas, trading routes and enslaved individuals involved. On the other side of the continent, however, a network of slave trading had been established in the Indian Ocean basin millennia before the start of the Trans-Atlantic slave trade. This trade expanded in numbers after European colonists started participating from the seventeenth century onward (Collins, 2006, pp. 327-328). Over the years, research has increasingly been conducted on the slave trade in this region, although it is still underdeveloped compared to that of the Atlantic Ocean. The Indian Ocean slave trade encompassed trading routes between East Africa, South and Southeast Asia for the supply of enslaved individuals, and European territories in the basin (Shell, 1994, p. 41). One of these territories was Cape Town, located in the Table Bay area of western South Africa.

This thesis serves as a literature review based on historical data and studies regarding individuals from burial grounds in and near the Cape Colony. The aim of the study is to answer the question: What do the origins of (formerly) enslaved people in cemeteries nearby Cape Town tell us about the slave trade in South Africa? Examining the extent of slavery in South Africa and determining where the enslaved individuals originated from is crucial to form a better understanding of the impact the slave trade had and still has nowadays. This research may show us how the importing of enslaved individuals from different cultural backgrounds and a great variety of geographical areas has influenced the society at the Cape. Insights into this could strengthen the collective memory and the identities of the descendants of these people in contemporary times, thereby allowing the connection to their past cultures to be reestablished and be accepted as such.

To provide a sufficient and well-substantiated conclusion to the main research question, this study addresses several sub-questions. These include the following:

- What historical information is known about the origins of the enslaved people in South Africa?
- What can strontium isotopic values derived from the remains of enslaved people and their descendants tell us about their origins and possible patterns regarding these places of origin?
- What do cultural traditions, such as intentional dental modification present in the past population of enslaved people in South Africa, imply about the culture and the origins of these individuals?

This thesis and its database are centred around four main studies in which analysis on strontium isotopic values have been carried out on a different burial sites in the area of Cape Town and its surroundings. The burial grounds involved are located in Simon's Town, Cobern Street, Green Point, and Fort Knokke. The strontium values indicate the geographical areas individuals grew up in. In this thesis, the results from these studies will be compared to the historical data known about the Indian Ocean slave trade, to see if these origins correspond with the trading routes in the Indian Ocean basin and the expected build-up of the Cape's population. A crucial element in this research is the humanising of the victims of slavery, for example by the using the term 'enslaved individuals' rather than 'slaves', as their identities were not limited to their enslavement. To emphasise this, part of this thesis covers the dental modification present in a large number of individuals. The types of modification can be linked to someone's culture and identity, and hence the choices they made in life based on what they believed was important, meaning they become more than simply a number in a database. While three of the main articles comprising the database are focussed on enslaved individuals, one is centred around the burial ground of personnel of the Dutch East India Company in Simon's Town. This study serves as comparison to emphasise the difference in treatment between free people and enslaved individuals, even in death.

In order to emphasise the 'being human' and to protect the identities of those involved, certain choices had to be made in regard to linguistic terms. An essential part of this is the use of female/male or woman/man. This is especially apparent during the analysing of the results from other studies. A person's bones can only tell us what sex they were born with, not how they identified later in life. The osteological analysis can thus only provide us with an indication of sex, and not of gender. This means that in the analysis of this thesis, the appropriate terms to use are female and male.

The outline of the thesis is as follows: the background chapter provides context on the founding of Cape Town and its development; the Indian Ocean slave trade and its relevance in the creation of a slave society at the Cape Colony; the status of enslaved individuals in the Cape's society and their lives; and an introduction to dental modification. In the next chapter, the methods and materials of the research will be presented, along with the four main articles that comprise the database of this thesis. The subsequent chapter provides the results from these studies after literary analysis. In the discussion that follows, these results will be analysed and interpreted further using historical data and additional studies on these assemblages. Finally, the conclusion will give an overview of the yielded information and hypotheses of this study, and provide an answer to the research questions formulated above.

2. BACKGROUND.

This chapter introduces the founding of the Cape Colony and its role in the Indian Ocean slave trade from the seventeenth to the nineteenth centuries. In addition, the concept of dental modification is explained in detail, covering traditional shaping patterns and techniques of communities by whom it is still practiced today.

2.1 | Historical background Cape Colony

2.1.1 | The founding of Cape Town

The official colonisation process of South Africa started in 1650, with the Dutch East India Company coming to shore in the Cape region and founding a refreshment station near the Table Bay (Groenewald, 2010, p. 965; Oliver & Oliver, 2017, p. 4). This location was chosen for its perfect location alongside the most important seafaring route from Europe to the Indian Ocean territories, which required sailing all around the African continent (Groenewald, 2010, p. 965; Oliver & Oliver, 2017, p. 4). The Cape region is a vast area of land in western South Africa, and the Table Bay is located on the coastal side in the west of this region. The Cape Colony was positioned close to and north of the Table Bay, an unmistakeable landmark for incoming ships passing the Table Mountain. While establishing the station, the Dutch colonists encountered the indigenous peoples already living in the Cape region, the Khoikhoi and the San. The San were nomadic hunter-gatherers, and the Khoikhoi were pastoralists and held cattle. They were referred to by the Dutch as *Bushmen* and *Hottentots*, the latter because of the clicking sounds they used in their language (Van der Ross, 2005, pp. 23-24).

Shortly after the founding of the refreshment station near the Table Bay, the Dutch East India Company appointed Johan van Riebeeck to be the commander of the outpost in 1651. Van Riebeeck soon started stimulating people to move to what was now known as Cape Town, and the station was transformed into a settler colony (Groenewald, 2010, p. 965; Oliver & Oliver, 2017, p. 4). Dutch colonists and employees of the Company came to the settlement with the prospect of becoming farmers and receiving their own parcel of land. These people are also referred to as the ‘Free Burghers’ (Van der Ross, 2005, p. 32). The new arrivals resulted in a very multiethnic presence in Cape Town’s population and its surroundings, namely Dutch settlers and free south Asian people from the Indian Ocean basin, and the indigenous peoples of the Khoikhoi and the San (Oliver & Oliver, 2017, pp. 4-5).

South Africa, and therefore Cape Town, was under Dutch control until 1806, apart from a period of British rule from 1775 to 1803. Power was returned to Britain in 1806, after which they ruled the country until the creation of the Union of South Africa in 1910. Ties with the colonial ruler were still present in the practice of governing, however, and the British still had a say in political decisions. This

lasted until the independence of South Africa in 1961, when the country became a republic (Oliver & Oliver, 2017, pp. 1-2).

2.1.2 | Introduction of slave labour

The increasing number of people living in the Cape, many of them with their own farms that needed to produce, resulted in a labour shortage. In 1654, nearly three years after his appointment, Van Riebeeck was documented advocating for the introduction of slavery in the settlement. This was eventually pursued due to the low costs associated with slave labour (Müller, 1982, p. 1), and in 1658, the first ship with human cargo arrived in Cape Town. The enslaved individuals on board of *The Amersfoort* originated from Angola and Dahomey, but this is the only vessel recorded to transport enslaved people from areas adjoining the Atlantic Ocean to Cape Town (Groenewald, 2010, p. 965; Müller, 1982, p. 2). From then on, the import of enslaved individuals occurred through the trading routes with Asian territories as part of the Indian Ocean slave trade (Van der Ross, 2005, p. 32). Soon, enslaved individuals outnumbered the Free Burghers. In addition to enslaved individuals from the Indian Ocean basin, the Dutch by forceful means made use of the presence of the indigenous people on the rural sides of the town. While the Khoikhoi and the San were not considered as part of the enslaved population, many performed labour as indentured workers under Dutch management, often in piteous circumstances comparable to that of the enslaved individuals (Vink, 2003, p. 158).

2.2 | Indian Ocean slave trade

Generally, western colonial powers are associated with the Trans-Atlantic slave trade, but the slavery in the Cape colony has to be regarded within the framework of the Indian Ocean slave trade. With the exception of the first shipment, the enslaved people present in Cape Town were acquired through trading routes and connections in the Indian Ocean (see *Fig. 2.1*). This trading scheme involves southern and south-eastern parts of Asia, such as India and the Dutch Indies, and East African countries adjoining the basin. Slave trade was already practiced in the Indian Ocean at least four millennia before the start of the Trans-Atlantic slave trade, with Near Eastern states, Greeks and Romans performing raids mostly along the Nile and selling the captives to Mediterranean and Asian territories as early as the 2900s B.C.E. (Collins, 2006, pp. 325-326). Research by Collins (2006) indicates that from the seventeenth century onward, the most prominent European participants in Indian Ocean slave trade were the colonial powers of France, Britain, Portugal and the Netherlands. They relied on local chiefdoms and middlemen in the interior to acquire large numbers of enslaved individuals, such as prisoners of war. The African middlemen would participate in the raiding and kidnapping of people from other communities, or their own. The people taken captive would then be transported to the coastal areas, where they would be loaded onto the ships of European slave traders and sailed to their final destination (p. 340). The capturing and enslavement of individuals from

Southeast Asia also included victims of war, who were then transported to Batavia (present-day Jakarta) and other colonial territories (Hägerdal, 2022, p. 452).

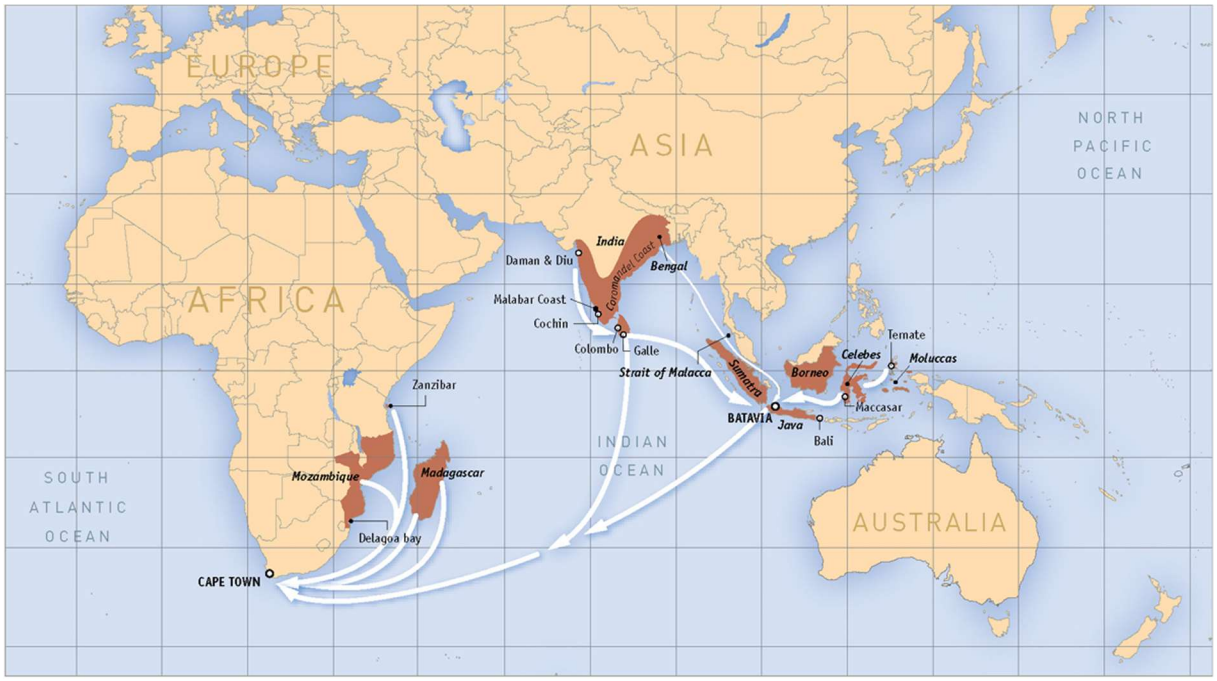

Figure 2.1. The most prominent sailing routes of the Indian Ocean slave trade, connecting East Africa, South Asia, Southeast Asia and Cape Town (Kootker et al., 2016, p. 2, Figure 1).

In the first years of the seventeenth century, two seafaring companies were founded by the Dutch: the Dutch East India Company (*Vereenigde Oost-Indische Compagnie*), in 1602 (Gelderblom, De Jong & Jonker, 2013, p. 1), and the Dutch West India Company (*West-Indische Compagnie*), in 1621 (Den Heijer, 2003, p. 80). Both corporations participated in slave trade during colonial times, the WIC in the Atlantic Ocean and the VOC in the Indian Ocean. The Dutch East India Company had great influence in the trading scheme in the Indian Ocean basin due to its territories in the region (Vink, 2003, p. 132). In 1612, Batavia, the capital of the Company, was established on the island of Java (Gelderblom et al., 2013, pp. 1-2). With the establishment of the Cape Colony halfway through the seventeenth century, new opportunities in trading routes arose. By the orders by the commander of the colony, Van Riebeeck, slavery was soon introduced into the Cape's society. While the Cape Colony was primarily involved in the slave trade of the Indian Ocean, vessels on their way from East Africa to the Americas would moor in the harbour before continuing their journey across the Atlantic Ocean, to destinations such as Brazil. Cape Town was thus important from a strategic point of view, but it differed in purpose from the other territories in the Indian Ocean. These were often capitals of trade, both in commodities and enslaved people, and while there were instances of ships having to sell some of the captives on their way to their final destination, Cape Town did not function as a hub for slave trading (Harries, 2016, p. 410).

This also affected the way in which the Cape Colony's society was build up. Compared to the colonial territories in the Indian Ocean, significantly fewer female than male individuals were present in the Cape, which was the case for both the enslaved and the free people of the population (Worden, 2016, p. 1376). In addition, the number of enslaved individuals present in the settlement was notably lower than that in other slave societies on the islands of the Indian Ocean basin, such as the Mascarenas and Mozambique Island, where trading centres in enslaved people were located. Here, large numbers of individuals were brought on land to then be sold and exported to other places in the basin. Their stay on the islands were usually quite short, but enslaved people still outnumbered the settlers at any given point during the year (Harries, 2016, p. 411). From 1711 on, the enslaved population in the Cape Colony surpassed the number of white settlers and this continued to be the case moving forward (Groenewald, 2010, p. 966). While some studies posit that slavery in this region was not as evident during the time of the Dutch East India Company (Groenewald, 2010, p. 964), Vink (2003) argues that slavery was in fact integrated in the Cape's society, although this was not coordinated by the Company, but rather by her personnel and servants, who participated individually in the private slave trade (p. 135). In 1800, the Batavian Republic replaced the Dutch East India Company with a new committee, and this was the end for the Company and her control over the Dutch territories, including Cape Town (Van der Kroef, 1948, p. 134). During her existence, the Company transformed Cape Town from a small supply post into a slave society (Vink, 2003, p. 135).

Under British rule in 1808, the Act of Abolition was implemented in the Cape. This prohibited the trade in enslaved people, but some still succeeded in acquiring enslaved people from the Indian Ocean slave trade (Harries, 2016, pp. 423-424). The Cape's slavery officially ended in 1834 (Van der Ross, 2005, p. 38; Worden, 2016, p. 1391). Further into the nineteenth century, these rules were regulated more strictly and with the subsequent reduction of imports of individuals from Asian regions, the Cape became more Africanised (Harries, 2016, p. 426). From the beginning of slavery in Cape Town to the end, an estimated 63,000 individuals were imported through the Indian Ocean slave trading routes. An even larger number of descendants of enslaved people were born in the Cape region, meaning the actual number of enslaved individuals present in the Colony lies significantly higher (Shell, 1994, p. 40). The impact of these people and their various backgrounds on the Cape's society should not be underestimated.

2.3 | Slavery in the Cape Colony

2.3.1 | The Dutch East India Company and private ownership

By the beginning of the nineteenth century, the population at the Cape Colony consisted for 55 per cent of enslaved people (Worden, 2016, p. 1372). Slavery in what is now the Western Cape region knew two different forms of slave ownership. The first was that of the Dutch East India Company,

where enslaved individuals were kept together in a separate building called the 'Slave Lodge' when they were not working (Groenewald, 2010, p. 967). As most individuals owned by the Company were brought to the Cape in large numbers on vessels, many of them had been taken captive in the same geographical area. This allowed the enslaved people in the Slave Lodge to quickly form bonds with each other and create a sense of unity, which increased the changes of runaways and uprisings against the Company. Both female and male individuals slept in the Slave Lodge, and no distinction was made between sexes in regard to division of labour; women and men were assigned to the same tasks (Groenewald, 2010, p. 967; Shell, 1994, p. 55). The second form of slave holding was private ownership. In this case, a 'master' or owner would have one or multiple enslaved individuals working for them that often resided inside the owner's house, with specifically women sleeping in the kitchen area. Individual owners would often buy enslaved individuals from diverse backgrounds, to prevent collective resistance (Shell, 1994, p. 55). This proved to be an effective method, as most actions against enslavement were individually planned and other enslaved people would tell on others if they became aware of their plans of escaping. Contrary to the Company's approach, private owners were more likely to assign certain types of labour based on gender. Women often stayed close to the domestic spheres, helping in the household, while men carried out the hard labour (Groenewald, 2010, pp. 967-970; Shell, 1994, p. 55; Van der Ross, 2005, p. 39).

2.3.2 | Multiethnic society at the Cape

People from many different ethnicities resided in Cape Town, creating an incredibly diverse population of enslaved individuals, indigenous peoples, Free Burghers and Free Blacks. The provenance of enslaved individuals differed slightly for both types of ownership, as the enslaved individuals owned by the Dutch East India Company came from less diverse backgrounds. The four main import regions were India, Indonesia, Madagascar and Mozambique (Groenewald, 2010, p. 965; Shell, 1994, p. 41; Van der Ross, 2005, p. 33; Worden, 2016, p. 1378). The number of individuals born into enslavement through enslaved parents increased over time. These individuals are referred to as *creole* (Shell, 1994, pp. 58-65), and the white settlers considered them to be one of the most valuable types of enslaved people. In the creole population, distinctions were made based on descendance. The preferred people were *mulattos*, the offspring of an enslaved individual and a European settler, and in specific the combination of an enslaved girl and a Dutchman or European was highly regarded (Shell, 1994, pp. 56-58). Because they had known nothing outside of the life at the Cape, the locally born individuals were more likely to stay loyal to their owners and were believed to adapt and learn quicker than the people imported from the Asian territories and even more so than those from East Africa (Shell, 1994, pp. 55-56; Van der Ross, 2005, p. 35). In the period between 1652 and 1721, the locally born descendants counted for under ten per cent of the population. This rapidly changed from 1722 onwards. Between 1760 and 1769, locally born enslaved people for the first time made up over fifty per cent of all enslaved individuals present at the Cape, which is described as 'the moment of

creolisation'. By the time of abolition in 1834, around seventy per cent of the enslaved population was born in the Cape and considered creole (Shell, 1994, p. 47).

Besides enslaved people, the indigenous peoples of the Khoi and San were also subjected to Dutch colonial rule. The Dutch settlers looked down on the San's nomadic ways of living and considered them savages (Adhikari, 2010, p. 21). When confronted with Free Burghers who were expanding their territories and adapting a system of migration for their cattle, the San and some displaced Khoikhoi showed resistance, mainly through guerilla attacks. This led to the mobilisation of coloniser commandos with the intention to eradicate the indigenous societies, creating a long-lasting frontier conflict. Most of the San people were massacred during the eighteenth and nineteenth centuries, culminating in the San as a society being almost entirely annihilated (Adhikari, 2010). At first, the relationship between the Khoi people and the settlers could be interpreted as primarily business-like where the Khoi would provide the Dutch with meat from their cattle herding (Van der Ross, 2005, p. 24). It did not last long, however, before these people were also put into a labour system that did not benefit them. The San were strong the military department and therefore, the colonists tended to target the Khoi more often (Adhikari, 2010, p. 25). Initially, they were hired by the Dutch for their knowledge on the land and cattle farming. For this, they were being paid for their expertise, working alongside the enslaved individuals (Adhikari, 2010, p. 24; Ross, 1983, p. 42). This arrangement shifted in the eighteenth century, and instead they became forced labourers in conditions that were comparable to those of the enslaved people in Cape Town (Adhikari, 2010, p. 24). In the seventeenth and eighteenth centuries, the Khoi were prominent parts of the population throughout the entire Cape region, such as Stellenbosch, Swellendam, and Graaff-Reinet, where they worked together with the enslaved population. These settlements were located more land inward than Cape Town, where the Khoi were absent (Fouri & Green, 2015, p. 205).

The only people in the Cape population that could be considered free were the Free Burghers and the Free Blacks. The latter was a relatively small group of people that had been freed from slavery, either by themselves through purchase or by their owners. This process of becoming free from slavery is called manumission. People wanting to be manumitted could either apply for Free Burgher-ship, for example when they themselves were the descendants of a white, settler father, or for becoming a freed person. In case of the latter, one would not have the same rights as full citizens such as the Free Burghers. Free Burgher-ship was the least practiced option in the Cape region (Shell, 1994, pp. 372-374). Manumitting, however, only happened rarely in the Cape Colony, and when it did, it was often a woman that was manumitted (Groenewald, 2010, p. 971). In 1731, Free Blacks made up six per cent of Cape Town's population (Groenewald, 2010, p. 966). The term has been used loosely and sometimes also includes convicts or exiles, but the general consensus is that Free Blacks includes only

the people freed from slavery. This group never grew significantly, as their descendants would be considered Free Burghers instead (Groenewald, pp. 970-971).

2.3.3 | Inter-class relationships

In the Cape, people from different backgrounds and social statuses did not stay within the boundaries of their class. Relationships were recorded inside the enslaved community, but also between enslaved people and Free Burghers or Free Blacks. This was partly because there were significantly less women present in the Cape's society compared to men, both in the enslaved and free population. Free men, including bypassing sailors and *knegten*, would visit the Slave Lodge of the Dutch East India Company for sexual exploitation, socially transforming the Lodge into a site of prostitution (Groenewald, 2010, p. 972; Ross, 1983, p. 46; Van der Ross, 2005, p. 35). There were also romantic relationships between enslaved and free people, often a combination of an enslaved woman and a free man. In case the free person wanted to commit to marriage, the enslaved individual first had to be bought from the respective owner and then be set free, through the process of manumission. If the interested free person was the owner, the step of purchasing was not necessary (Van der Ross, 2005, p. 67). Roman-Dutch Law, which was followed in all Dutch settlements, allowed two enslaved people to live together as a couple and have children. Before the nineteenth century, however, marital status between an enslaved couple was not recognised by the state (Van der Ross, 2005, pp. 66-67). In addition, the indigenous peoples working for the Company after the eighteenth century, would stay in the same area and buildings as the enslaved people. This also led to sexual and romantic relationships between the Khoi (mostly men) and the enslaved (oftentimes female) individuals (Ross, 1983, p. 46).

Whether these relationships were solely for pleasure (of the men involved) or also included love, they often resulted in the birthing of children. When this was the case, the status of the mother would determine whether the child would be born in slavery or not. Children bore by enslaved women added to the enslaved population. Owners did therefore not discourage their enslaved individuals from entering relationships with each other, as it would allow for their number of enslaved people to grow. If, however, their father was a white Free Burgher, the mother would generally insist on baptising the child so that it would not be allowed to be separated from her. Baptising also allowed for the child to become a freed person more easily in adulthood (Van der Ross, 2005, p. 35). Due to the intermingling of people from many different backgrounds, the locally born descendants from enslaved people formed a heterogenous group, named 'the coloured people' (Van der Ross, 2005, 96). Their heritage stems from enslaved individuals from the Indian Ocean basin, the Free Burghers, the Free Blacks, free Asian people, the San and the Khoikhoi, and more (Van der Ross, 2005, pp. 96-99). By the end of the eighteenth century, more than half of the enslaved population in the Cape was locally born (Worden, 2016, p. 1372).

2.3.4 | Cultural influences

The intermingling of different social groups in the Cape Colony had a great impact on its society. The variety of cultures changed the ways of living, starting with the language. Afrikaans developed as a means of communication between enslaved and indentured people and Dutch colonists. Especially the enslaved individuals performing labour in domestic spheres contributed to this language changing process, and in many cases, these were Malay women (Van der Ross, 2005, pp. 103-104). The term Malay refers to the enslaved Muslim people of the Cape's population, and most of these individuals came from Southeast Asia (Worden, 2016, p. 1391). However, Islam was not solely practiced by enslaved individuals that came from this region. Conversion happened often, either to Islam or Christianity.

Believing in a God, regardless of which one, was important in creating a sense of belonging and community for the displaced enslaved individuals. It also prevented them from resorting to violence, trying to escape, or displaying unwanted behaviour. While Christianity was practiced in the Cape by the white settlers, the Free Burghers would rather see their enslaved individuals adapt Islamic faith instead. Christianity prohibited owners to sell a baptised individual during their lifetime, which was impractical for the owner and thus not encouraged (Van der Ross, 2005, p. 71). Islam, on the other hand, did not provide such privileges. A marriage blessed by Islam was not legally binding and could thus be disregarded by the Cape's governors. Islam became a large part of the Cape's enslaved communities (Van der Ross, 2005, pp. 67-71). The impact of religion on Cape Town can also be observed in the burial positions of religious individuals. Muslims were buried facing Signal Hill, a sacred location according to their faith, and they were positioned on their sides (Kootker et al., 2016, p. 15). Christians were buried lying on their back, facing the sky, often with their arms crossed over their torso or other body parts (Olszewski et al., 2023, p. 6). Individuals from both groups can be found in the same cemeteries, although it is improbable that white settlers of high social status, often Christian, were buried in the same place as (formerly) enslaved people.

Other influences include that of fashion style, food, and the way of raising children (Van der Ross, 2005, p. 100). Another important element is music. In the Cape Colony, enslaved individuals were generally held in small numbers by private owners, where they were kept close to the domestic spheres. This allowed them better opportunities to form a bond with the head of the household and their family, and be influenced by their ways of living. The music of enslaved people in the Cape therefore shows European characteristics, and the songs are often uplifting (Van der Ross, 2005, pp. 126-127). This is in contrast with music from slavery in the Atlantic Ocean. In the Americas, enslaved individuals were kept in significantly larger numbers per site than in Cape Town. Many of them shared geographical backgrounds, as they were all imported through large-scale shipments from Africa. The fact that all of them were displaced and African in a foreign surrounding, created a close sense of community and belonging. The music they created was that of resistance and sorrow, meant as a protest while working on the plantations (Van der Ross, 2005, pp. 126-127).

Another consequence is the introduction of intentional dental modification in the region, where previously there had been no such practices.

2.4 | Dental modification

2.4.1 | The practice of intentional dental modification

Throughout this thesis, terms such as maxillae (the upper jaw); mandible (lower jaw); distally (away from the centre of the body); and mesially (towards the centre of the body) will be used. Besides this, M1, M2 and M3 refer to the first, second and third molar respectively. The anatomy of the teeth and their elements are displayed and named in *Fig. 2.2* below.

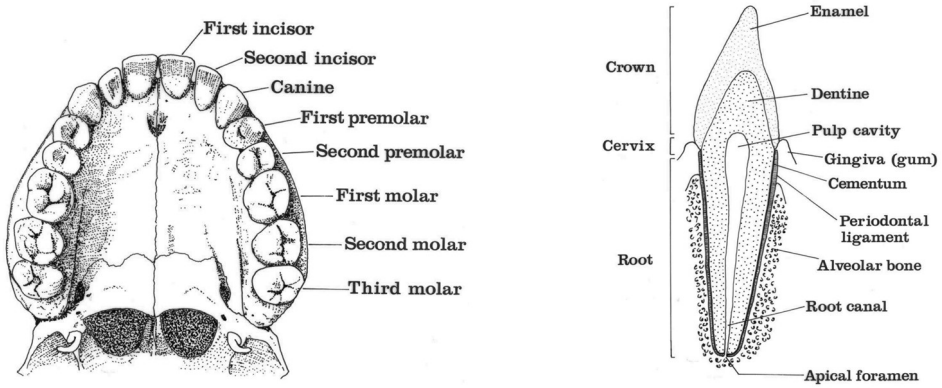

Figure 2.2. The anatomy of human teeth. On the left, the maxillae (upper jaw) is displayed. The order of teeth and their names are the same for both the left and right halves. On the right, the different elements comprising a tooth are listed. Samples from enamel are taken when conducting strontium isotope analysis (Mays, 2021, p. 12, Figures 1.10 and 1.11).

Permanently altering the human body is a concept known among many cultures around the world. These practices include modifications such as piercing, tattooing, and dental modification. These types of intentional alterations often occur as a combination rather than as a single practice (De Saint-Aubert et al., 2023; Schneider, 1973). Intentional dental modification has been part of cultural traditions for millennia on a global scale, and it presents itself in a great variety of styles that are distinctive for each culture. Some forms of dental modifications include ablation, in which the teeth are removed in their entirety; altering the colour of teeth through dyeing, painting or bleaching; and the use of inlays, where small pieces of stone or minerals are drilled into the teeth (for examples, see *Appendix A*) (Burnett et al., 2023, pp. 3-10). By far the most occurring type of modification in African societies, however, is the shaping of teeth by notching and chipping in order to create particular patterns.

A frequently practiced example of this would be the creation of an inverted V-shape at the mesial line of the front incisors, by notching the outside corners of these teeth (see *Fig. 2.3*). Filing is also a recurring method, used for example to create saw-patterns or pointy teeth (see *Fig. 2.3*). The shaping of the teeth requires tools such as pebbles, small knifes and metal hand-axe-blades. The preference and choice of instrument depends on each individual culture (Asefa, 2022, p. 6; De Saint-Aubert et al., 2023, p. 7).

Dental modification was also practiced in Southeast Asia. Research on prehistoric samples in Indonesia show intentional alteration, mainly through filing and ablation. Variations in patterns and modification styles were observed in different regions. On Bali, where it is still practiced today by Hindus, and on Timor, dental modification often entailed the filing of the upper incisors and canines. In Java, teeth were modified by sharpening. Tooth colouration through blackening was also typically practiced in this part of Asia (Koesbardiati, Murti & Suriyanto, 2015, p. 54), and this was also seen in communities in Madagascar (Zumbroich, 2012).

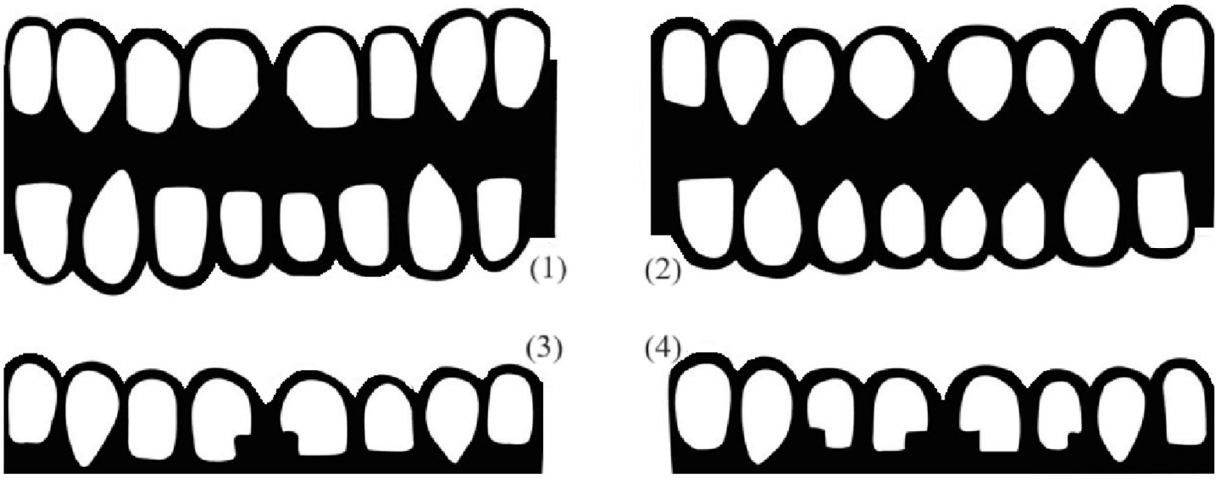

Figure 2.3. An overview of intentional dental modification patterns, (1) inverted V-shape, typical for the Karrayyu Oromo and (2) a saw-shape pattern as common in the Issa Somali, both from Central Ethiopia (based on Asefa, 2022). Other common patterns are variations of (3) and (4), where the upper incisors have been chipped to remove the corner of the tooth (Figure: Annelijn Vermaes).

Intentional dental modification in (past) African societies are generally carried out on the incisors of the maxillae or upper jaw. Evidence for modifications of the molars is hard to come by, and although modification in the teeth of the mandible does occur in some occasions, it is not the norm (e.g. Schneider, 1973, p. 30). In Southeast Asia, ablation has been the most prominent form of dental modification, dating back millennia. Also in these cases, a preference for the modification of maxillary teeth can be observed (Burnett et al., 2023, p. 24). Sporadically, a distinction in modification between female and male individuals can be observed on a global scale. In such cases, either sex-specific styles can be identified, or only one of the sexes shows signs of dental modification. Evidence of this has been found in Italy during the Neolithic period, where modification was only found in women, and in Holocene Australia, where tooth alteration mainly occurred in men (Burnett et al., 2023, pp. 24-25).

When practiced in a community, dental modification is of great importance on several levels. There are multiple reasons for an individual to participate in the tradition of modification of the culture they are part of. It can create a sense of belonging and identity, and deepen the bond with other members of the community who have also undergone the operation and who carry the same type of traditional decoration. Besides this, it is used for rites of passages, to emphasise ‘the entering a new phase of life’

(De Saint-Aubert et al., 2023, p. 4). This often includes the transition from child or teenager to adult, or the moment someone becomes ready for marriage. The modification of teeth is also considered to be aesthetically pleasing and therefore, it is also carried out to enhance beauty standards (De Saint-Aubert et al., 2023, p. 6; Friedling, 2017, pp. 70-72; Schneider, 1973, p. 30). Most dental modification is carried out while a person is still in their late teens, before adulthood. While very few instances are known worldwide (only two examples have been found in the study of Burnett et al. (2023)), the lack of alteration on deciduous teeth suggests that dental modification takes place after one has already acquired their permanent teeth (Burnett et al., 2023, p. 2).

2.4.2 | Dental modification in the Cape region

Dental modification practices in Africa date back to the Late Pleistocene period, particularly the practice of ablation. Over time, new styles were created and a larger variety in modification became evident across the continent (Burnett et al., 2023, pp. 21-22). The number of individuals with dental modification has been decreasing in the past decades. There are, however, still some societies that do practice it nowadays, such as the indigenous communities of the Karrayyu Oromo and the Issa Somali in central Ethiopia (Asefa, 2022, p. 3). Both still have their traditional styles which allows for a differentiation between the two groups, namely filing a reversed V-shape in the upper incisors for the Karrayyu Oromo, and the creating of a serrulate pattern through filing and notching for the Issa Somali (Asefa, 2022). Other examples include the Makonde from Mozambique, who combine this practice with other body modifications such as tattooing and piercing. For these people, dental modification serves as a rite of passage, for both aesthetic reasons and proving bravery to the community. The traditional decoration pattern is that of incisors chipped into points, in most cases only for the maxillary teeth. This is done either from the base of the tooth or the middle of the crown, depending on the size of the teeth (Schneider, 1973, p. 30).

Intentional dental modification was practiced very little by the indigenous peoples living in the Cape region during the arrival of Dutch colonists in the seventeenth century (Friedling, 2017). The influx of enslaved people in the Cape Colony introduced many different backgrounds and cultural believes. It is believed that the enslaved people, in particular the individuals fleeing from slavery into the hinterlands, started the practice of dental modification in this area of the Cape (Friedling, 2017, pp. 62-72). The practice continues until today, and it is especially present among people of lower social economic status, regardless of colour (Friedling & Morris, 2007, p. 106). Reasons for undergoing dental operations in the western Cape region are mostly related to peer pressure for men and fashion for women, and not so much to medical causes or gangsterism (Friedling & Morris, 2007, pp. 109-110), although it also testifies as a rite of passage to adulthood (Friedling, 2017, p. 70). The decoration patterns in this group can be divided into six categories, the most common one being the ablation of

the four maxillary incisor teeth. Other categories include the filing and ablation of the upper and lower incisors (Friedling, 2017, p. 65; Friedling & Morris, 2007, p. 110)

The Company and individual traders kept supplying Cape Town with more enslaved people from varying regional backgrounds. A considerable number of these individuals had undergone dental modification operations before their enslavement, which led to the presence of different types of modification characteristic for different ethnic groups in the Cape. It is thought, however, that the tradition of dental modification was discontinued among the descendants of enslaved people who were born at the Cape, in case of easy identification after escaping (e.g. Kootker et al., 2017, p. 14).

2.4.3 | Impact of religion

It could be hypothesised that the practice of dental modification died out in the Cape Colony because of enslaved people converting to Abrahamic religions, but there is no evidence or previously conducted research to support this claim. According to interpretations of the Holy Bible in Christianity, bodily modifications such as tattoos could be transferred to the post-mortem body in Heaven (Mavropoulus, 2024). Depending on whether tattoos would be considered bodily mutilation or beautification, the Christian God would disapprove of intentional modification of its creations purely for aesthetic reasons: “While what is corrupted could never be beautiful to the eyes of God even if it is considered delightful and stunning to human eyes” (Mavropoulus, 2024, p. 70). This sentiment would, in that case, then also be true for piercings and intentional dental modification. In the case of Islam, the Holy Quran prohibits the practice of bodily modification such as tattoos and piercings. This could also possibly be extended to intentional tooth alterations for beautification. It could be that instead of, or in addition to, the theory of runaways, the modification of teeth was no longer seen as something that would be permitted by their newly found God. However, practicing religion expresses itself differently in everyone, and in contemporary times, there are people who identify as Christian or Muslim that do have body modifications for aesthetic purposes. It can therefore not be argued that all religious enslaved people in the Cape region ceased the practice because of their faith.

2.5 | Isotope analysis

2.5.1 | Strontium isotope analysis

Strontium isotope values in bone or teeth of human individuals correspond with signature values of specific geological areas worldwide. The strontium isotopes used for this type of analysis are ^{87}Sr and ^{86}Sr (Wathen, Isaksson & Lidén, 2022, p. 2). Strontium values are dependent on the $^{87}Sr/^{86}Sr$-ratios in groundwater (Renfrew & Bahn, 2016, p. 359), which in turn is influenced by the strontium values found in the rocks and soil. Differences in geology therefore lead to a distinct range of strontium values, which allows for determination of estimated origins. A human’s life history can be deduced

from isotopic studies on the dental enamel. In contrast to bone, tooth enamel stays the same throughout life and does not regenerate (Mays, 2021, p. 10). This means that the strontium values present in the enamel of a tooth are congruent with the geological area the person was in when this tooth erupted. By analysing the molars, which appear in different stages of childhood (see *Appendix B*), it is possible to determine whether someone migrated during their lives, if they did so more than once, and the region(s) they migrated to. In addition, strontium isotope analysis can be used to determine large-scale trading systems in organic materials (Renfrew & Bahn, 2017, p. 365).

One must keep in mind, however, that the use of this isotope analysis to determine origins is not flawless. There are areas in the world that share a local strontium signature due to similar geology, meaning individuals from such areas could be deemed local to a place they are not originally from.

2.5.2 | Carbon and nitrogen isotope analysis

The stable isotopic values of carbon ($^{13}C/^{12}C$) and nitrogen ($^{15}N/^{14}N$) in teeth and bone indicate the type of foods a person ate during their life. Stable carbon isotopes can show whether someone followed a diet mainly based on temperate land plants, tropical land plants, or marine plants (Renfrew & Bahn, 2016, p. 312). This can then be subdivided into marine plants, which have a high ^{13}C ratio from the sea water; C3 plants that are richer in ^{12}C, such as trees; and C4 plants, in which ^{13}C is more prevalent, such as savanna grasses (Renfrew & Bahn, 2016, p. 312). Additionally, the analysis of nitrogen isotopes allows for an indication of one's trophic level in the food chain. The $^{15}N/^{14}N$-ratio in herbivores favours ^{14}N, while the predators at the highest trophic level will show higher ^{15}N values. In humans, a distinction can then be made between a diet based on marine food sources or agricultural products, as the ^{15}N -and ^{14}N-values will be close to equal in case of the latter and more disproportional when consuming fish (Renfrew & Bahn, 2016, p. 313).

Although it is not indicative of the region of origin, carbon and nitrogen do indicate diet preferences during life, which can be used determine whether someone followed a local diet or not. If it is observed that they did not, it could be argued that this person was non-local to that specific region. This is, however, not a reliable method for determining origins when used on its own, and should therefore be viewed as a complementary analysis method in determining an individual's provenance (Kootker et al., 2016, p. 13). Likewise, strontium isotopes can be used as an indicator for diet when compared to the calcium ratios, which may determine whether a vegetarian or carnivorous diet was followed during life. This, however, should also be done in combination with carbon or nitrogen studies, and not as a sole approach (Renfrew & Bahn, 2016, p. 314).

3. MATERIALS AND METHODS

3.1 | Introduction

The research of this thesis is conducted through the analysis of both quantitative and qualitative data, which have been collected through literature review. The choice for this specific research method lies in the aim to compare different burial sites from Cape Town and the surrounding area with each other and to create a broader sense of understanding of slavery and the origins of enslaved people in this part of South Africa. In addition, the use of literature as the main source of data allows for analysis of both archaeological and historical data. An important part of this research project is to humanise the numbers that represent people. Therefore, I wanted to include a cultural aspect that shows that aside from enslaved individuals, these people were something else first, namely their own person with their own past, identity and culture. To include these aspects, dental modifications will be studied, although information on the traditions and practices of this concept is limited due to a lack of research and writing. For the sources, then, it would be important for them to cover either research of human remains including strontium isotope analysis, to answer the research question where the people originated from, or of dental modifications, both in analyses of human remains and as background information.

3.2 | Historical and archaeological data

The use of historical information for contextualising and providing a background required the collecting of data on the history of the trade in enslaved people in Cape Town and their place in society, such as how they were treated and the cultural aspects they did or did not continue to show during their captivity and enslavement. This data has been obtained through articles, books and studies, both online and at the Leiden University Library. Additionally, the data on burials of enslaved people has been obtained by looking for relevant articles on Google Scholar, JSTOR and Academia.edu in particular. The key terms that were used to find studies related to the area of research include variations of: ‘slave trade Cape Town’, ‘burial grounds Cape Town’, ‘burials enslaved people Cape Town’, ‘slave burials Cape Town’, ‘burials colonial period Cape Town’, ‘isotope analysis burials Cape Town’, ‘strontium isotope analysis Cape Town’, ‘dental modification burials Cape Town’, and ‘dental modification practices continental Africa’.

3.2.1 | The database

Through studies of literature, four main studies were selected to comprise the dataset of this thesis (see *Fig. 3.1; Table 3.1*; *Appendix C*). Three studies regarding human remains of (formerly) enslaved people were used. This includes the analysis of two burial grounds by Kootker et al. (2016), with 35 individuals, and Mbeki et al. (2017), with 27 individuals. The number of individuals in this case is not

reflective of the total amount of burials uncovered at certain sites, but rather of the individuals that were selected for strontium isotope analysis. Kootker et al. (2016) focusses on the burials located in Cobern Street, dating from 1750 to 1827, where six individuals had modified teeth. Mbeki et al. (2017) studies the V&A Waterfront Marina cemetery at Green Point, which dates between 1750 and 1850 (henceforth referred to as Green Point). Besides this, Cox and Sealy (1997) covers the analysis of a shipwreck named *Pacquet Real* located to the north of Cape Town, determined to be a slave ship in which eight captured people perished. Five of these individuals showed signs of tooth modification. In addition, a burial site will be included that was determined to belong to VOC-personnel in Simon's Town. This is done in an attempt to discover and emphasise the contrast in treatment between the different peoples that are part of the Cape population and how this can even be seen in death, and to compare the use of dental modifications in these two groups. This burial ground was excavated by Olszewski et al. (2023) and covers 43 individuals selected for strontium isotope analyses. This makes the total number of individuals in the database of this thesis 113.

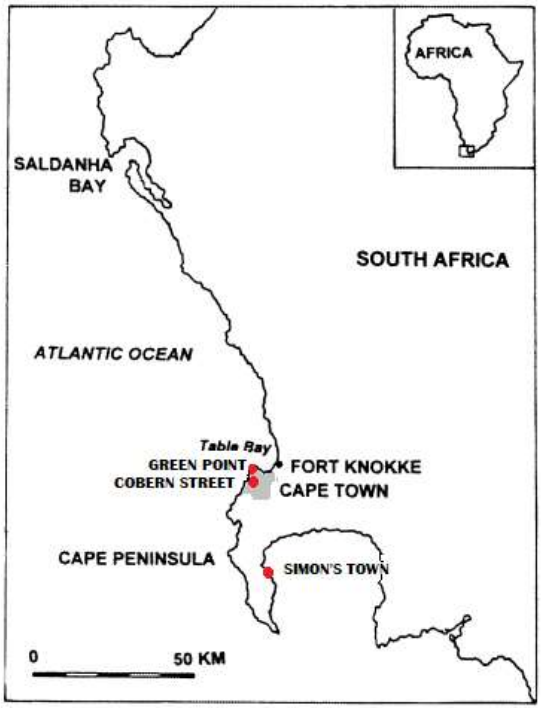

Figure 3.1. An overview of the location of the sites that will be used in this thesis. This encompasses Fort Knokke (Cox & Sealy, 1997), Cobern Street (Kootker et al., 2016), Green Point (Mbeki et al., 2017), and Simon's Town (Olszewski et al., 2023) (Adapted from Cox & Sealy, 1997, p. 208, Figure 1).

Author	Article title	Individuals present on site	Individuals selected for Sr-isotope and osteological analysis	Individuals with intentional dental modifications	Site and time period
Cox and Sealy (1997)	Investigating identity and life histories: Isotopic analysis and historical documentation of slave skeletons found on the Cape Town foreshore, South Africa.	8	8 (osteology) / 5 (strontium)	5	Fort Knokke 18 May 1818

Kootker et al. (2016)	Dynamics of Indian ocean slavery revealed through isotopic data from the colonial era Cobern Street burial site, Cape Town, South Africa (1750-1827).	63	35	6	Cobern Street 1750-1827
Mbeki et al. (2017)	Sickly slaves, soldiers and sailors. Contextualising the Cape's 18th–19th century Green Point burials through isotope investigation.	57	27	2	Green Point 1750-1850
Olszewski et al. (2023)	Osteological, multi-isotope and proteomic analysis of poorly-preserved human remains from a Dutch East India Company burial ground in South Africa.	184	43	-	Simon's Town, 1765-1795

Table 3.1. Overview of the authors, article titles, numbers of individuals present and analysed, and the names and time periods of the (burial) sites.

3.2.2 | Clarifications

Three things need to be mentioned before continuing. Firstly, there is an incorrect entry into the database of Kootker et al. (2016) regarding the age categorisation of one individual (UCT 521), namely "40-15" (p. 7). For the purposes of this study, it is assumed that the correct age lies between forty and fifty years of age, and therefore, this individual has been placed in the 26 to 50 years of age category for this burial site in the Results chapter.

Secondly, the burial assemblage of V&A Waterfront Marina in Green Point, studied by Mbeki et al. (2017), is not limited to enslaved people. The cemetery is located near the Slave Lodge and the hospital of the Dutch East India Company. The deceased included individuals that were either enslaved, employed in the lower ranks of the Company, or crew members of vessels that had just arrived in Cape Town and had to be treated for their poor conditions in the Company's hospital (Mbeki et al., 2017, p. 481). The analysed individuals from this study thus also include European and free people.

Lastly, the study by Cox and Sealy (1997) requires additional information as to why it has been included in the database. The Cape was not a final destination for the *Pacquet Real,* but merely a provision stop in a journey towards the Americas (Cox & Sealy, 1997, p. 219). The enslaved individuals on board were part of the Trans-Atlantic slave trade and they were not meant to be sold at the Cape. Therefore, it could be argued that these people and their origins are not representative of the Cape Colony's enslaved population. This would imply that the results of the study by Cox and Sealy (1997) cannot be used for this research, which focusses on the origins of individuals that were actually part of the Cape's population and not of those that were only passing by and passed in the area on accident. However, while Cape Town was considered a 'slave society', there were generally no auctions of enslaved people being held and most enslaved individuals were acquired through private

trade, which is in contrast with the other European territories in the Indian Ocean and entailed that individuals from many different geological backgrounds were imported into the Cape (Groenewald, 2010, p. 966).

Additionally, slave vessels such as the *Pacquet Real* would dock for a relatively short period of time to rest and obtain supplies, and sometimes would sell some of the individuals that were deemed unfit to travel further to the Americas (Harries, 2016, p. 410). Although this was often practiced before the Act of Abolition by the British, slave traders were still able to avoid these rules to a certain extent afterwards. Besides this, only a small number of individuals drowned when the *Pacquet Real* sank – among them those who have been analysed by Cox and Sealy (1997). The majority of people on board survived, among whom 133 enslaved individuals, and they were taken into the Cape to be apprenticed under masters for fourteen years (Cox & Sealy, 1997, p. 219). These individuals thus became part of the enslaved population at the Cape and as this is not the only sunken ship in the region during this time, it can be argued that the individuals analysed by Cox and Sealy (1997) do reflect the Cape's enslaved population. Therefore, they may be compared with the other three burial sites that do reflect the enslaved population at the Cape.

3.3 | Skeletal data and analysis

For this research, I will be looking at the results of the strontium isotope analysis on dental enamel from the previously cited sources, and on intentional dental modification practices. Through strontium isotope analysis, it can be determined whether individuals were local to the Cape area or non-local. This will been noted as 'non-local'/'local'. Non-local individuals will be further elaborated on in regard to possible origins, and also in comparison to other individuals that were not born in Cape Town. In line with this, sex is to be described as either 'female'/'male' and grave goods as 'present'/'absent'. Different age categories were created. The age ranges were based on the average age for enslaved people in the private networks of the Dutch East India Company, namely 13 for boys and 16 for girls (Mbeki & Van Rossum, 2017, p. 111). In Olszewski et al. (2023), however, age has only been described as either 'adult' or 'child', so this specific case will be noted differently. Another factor is burial positions, which is only covered by Kootker et al. (2016) and to some extent in Olszewski et al. (2023). This will be notated in a detailed, numeral way.

Dental modification has been found and analysed in the studies of Kootker et al. (2016), Mbeki et al. (2017) and Cox and Sealy (1997), describing multiple types of modification. This is especially elaborated on in the latter, in which they also indicate possible areas of origins within Africa for these modification techniques. It is important, however, to note that dental modification also used to be a custom in some regions in Southeast Asia, where a significant number of enslaved people located at the Cape were taken captive. The qualitative data on dental modification will be used, and it will be described in detail.

Factor	Notation of data
Individuals	‘Local’/‘Non-local’
Sex	‘Female’/‘Male’/‘Undetermined’
Age	‘0-9’ | ‘10-17’ | ‘18-25’ | ‘26-50’ | ‘>50’
Burial position	Detailed, numeral
Grave goods	‘Present’/‘Absent’
Dental modification	Detailed, qualitative

The processing of the data includes several aspects. The sex of individuals will be taken into account, especially in relation to their age. This is done to determine the ratio of males and females on a site, which can then be compared to the other sites with enslaved individuals, but also the VOC-personnel burial place in Simon’s Town. In this analysis, the attributes are male, female, non-adult (<18 years) and adult (18+ years). The results of the strontium isotope analysis from all sites will be compared – how many non-local people were present, how often have they migrated throughout their lives and an indication of their places of origin -, to establish whether or not there is a pattern in where the people were taken captive before being brought to the Cape. In terms of dental modification, the different techniques applied will be taken into account, as well as the form of decoration (e.g. pointy, rounded or diamond-shaped). In the case of Cox and Sealy (1997), it could be easier to determine where the ship originated from and therefore also the people on board. This could be compared to the results of Kootker et al. (2016). Besides this, the data on dental modification in enslaved people from Kootker et al. (2016), Mbeki et al. (2017) and Cox and Sealy (1997) will be combined to compare it to the individuals buried in Simon’s Town and their dental information. Finally, I will look at the distribution of dental modifications for the different sexes and ages (female/male and child/adult).

After analysis of and reflection on the results, the obtained data will be compared to historical sources regarding slave trade and slavery in Cape Town. The aim is to conclude whether or not the estimated origins of the (formerly) enslaved individuals align with what is known from historical documentation about the composition of the enslaved population in the Cape regarding differences in culture and provenance. This will be the case for both the results from the strontium isotope analysis in all four burial assemblages and the dental modification patterns present, to confirm whether or not these individuals were non-local to the Cape region.

4. RESULTS.

This chapter presents a general overview of the results of the archaeo-osteological analyses carried out for all four sites. This will first be done per site, followed by an intra-site analysis. The osteological analysis covers the factors sex, age and dental modification. The collected information on burial position, grave goods and the general state of preservation of the human remains will also be included in the overview of each site. Before presenting the results, it is important to note that some individuals were determined to be an age range that overlapped between two different categories (i.e. the age categories presented in *3. Methods and Materials*). In these cases, the age category was chosen with regard to the ratios already known for a specific site, and based on this the most overlapping category was chosen. For example, an individual between 40 and 55 years of age would be placed in the 26-50 age category, but a 45 to 60 year old individual would be considered '>50'.Strontium analysis was carried out on a selection of excavated burials for each site, ranging from 5 to 43 individuals. Additionally, intentional dental modification was described and analysed for a total of twelve individuals from all of the sites.

4.1 | Fort Knokke

4.1.1 | General assemblage

The site of Fort Knokke (Cox & Sealy, 1997) covers eight non-local individuals who drowned in the shipwreck. None of the skeletons were still fully intact and therefore the skeletal elements selected for analyses are not the same for each individual. Through osteoarchaeological analysis it was determined that five individuals (62.5%) were between 10 and 17 years old; two (25%) between 18 and 21 years old; and one (12.5%) was of adult age. It is assumed that 'young adult' as described in the results of Cox and Sealy (1997) is between 18 and 21 years of age based on the statement "seven are juvenile, younger than 21, and the eight is an adult male" (Cox & Sealy, 1997, p. 213). Additionally, five people showed clear signs of intentional dental modification, three of whom were also subjected to strontium isotope analysis (individuals 4773, 4774 and 4872). The ages of these individuals range from 12 to adulthood. Sex could not be determined for any of the individuals except for the adult individual 4872, of male sex. As Fort Knokke is not a burial ground but rather an site of accidental deaths, burial positions and grave goods are both absent (Cox & Sealy, 1997).

4.1.2 | Strontium isotope analysis

The shipwreck of Fort Knokke was that of the capsized *Pacquet Real*, which was on its way from Mozambique to St. Salvador. It can therefore be assumed that none of the individuals were local to the Cape region. There is, however, a great difference in provenance between the analysed people. Analyses related to strontium isotopic research were carried out on five individuals (SAM AP 4773,

4774, 4872, 4765 and 4788), using bone mineral, tooth enamel and dentine (p. 213). No standard deviation was mentioned. The lowest strontium ratio recovered was 0.70957 for SAM AP 4788, which indicates origins related to a marine or coastal environment. The highest value is 0.71910 for individual SAM AP 4773. This is a range of 0.00953 and this allows the conclusion that the enslaved people on board on this ship came from varying areas, although all strontium values resonate with the larger region of Mozambique (Cox & Sealy, 1997, p. 221).

4.1.3 | Dental modification

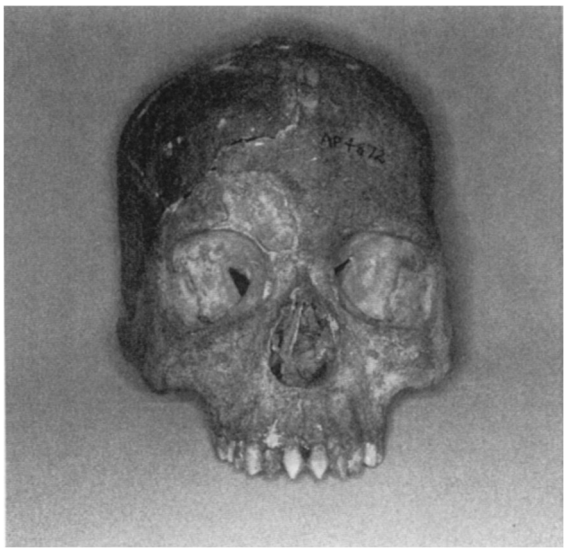

Figure 4.1. Intentional dental modification in individual SAM AP 4872 from Fort Knokke, consisting of the four maxillary incisors being filed to points (Cox & Sealy, 1997, p. 209, Figure 2).

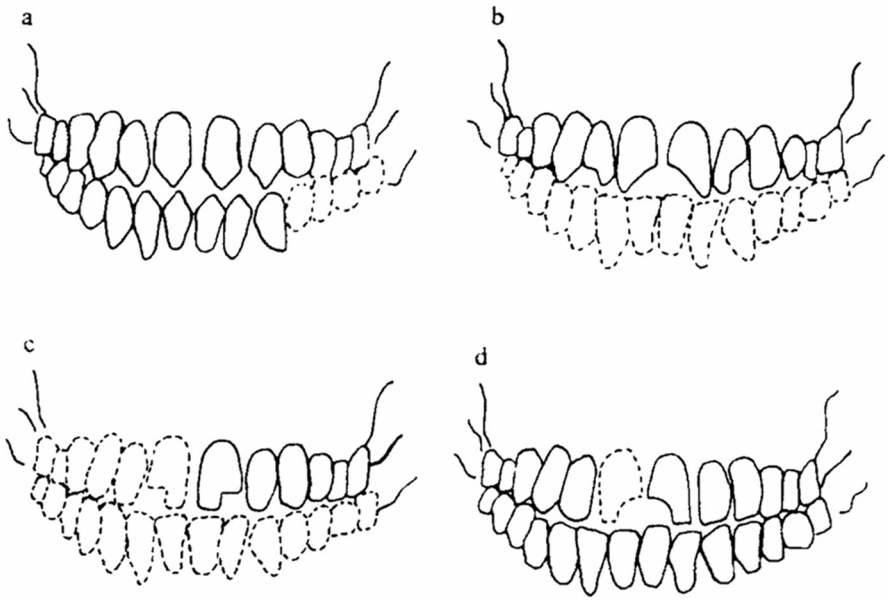

Figure 4.2. Overview of intentional dental modification patterns observed in Fort Knokke (Cox & Sealy), with dotted lines indicating assumed patterns of missing teeth: (a) incisors filed to a point in the upper jaw for individual SAM AP 4872 and the lower jaw for individual SAM AP 4773; (b) individual SAM AP 4774 showing notches in the central maxillary incisors and chipping in the second incisors; (c) notched lateral corner of first maxillary incisor present in individual SAM AP 4776C; (d) rounded removal of medial side first incisor of individual SAM AP 4764 (Cox & Sealy, 1997, p. 210, Figure 3).

At the Fort Knokke site, five individuals displayed signs of intentional dental modification (individuals 4773, 4774, 4776C, 4872 and 4764). Individual 4773 (see lower teeth in *Fig. 4.2a*) had filed points for three of the incisors of the mandible (R11, R12 and L11). The filing to points is also the case for the decorations of individual 4872 (see *Fig. 4.1* and upper teeth in *Fig. 4.2a*), which comprise modification to both the upper and lower incisors. Another case of filing can be observed in the anterior teeth of individual 4776C (see *Fig. 4.2c*), for whom a rectangular shaped piece of the left-corner has been removed. The tooth modifications of individual 4774 (*Fig. 4.2b*) consist of alteration on the two first maxillary incisors, filed in such a way that the points of the teeth are on the outside instead of centred in the middle, as was the case for individuals 4872 and 4776C. In addition the second incisors have been chipped on the lateral side, to create a notch without pointed ends. Finally, individual 4764 showed a circular or rounded notch in the corners of the first maxillary tooth, pointed towards the other first incisor (see *Fig. 4.2d*). In cases of teeth absence, it has been assumed that the dental modification of the missing specimen was mirrored and identical to that of the opposite tooth (Cox & Sealy, 1997, p 210).

Several styles of tooth decoration were established to be present in this group of analysed people. This includes the chipping and filing of teeth to points and creating notches in various shapes such as rectangular or curved and circular, all of which was present in the anterior teeth (Cox & Sealy, 1997, p. 218).

4.2 | Cobern Street

4.2.1 | General assemblage

For Cobern Street (Kootker et al., 2016), a total of 63 intact primary burials were documented, that were relatively well-preserved and displayed signs of burying with care. 35 of these were subjected to strontium isotope analysis and osteoarchaeological studies (p. 5). The ages of this group of people ranged from 1,5-2 years old to over fifty years of age. The majority of people (60%) fell in the 26 to 50-age category, while five (14.3%) were between 10 and 17 years old, and four (11.4%) between 18 and 25 years old. An additional four people were determined to be fifty years or older. One individual (2.9%) was under the age of two. In regard to sex, an evenly distributed ratio has been observed. Seventeen individuals (48.6%) were considered to be female, with the same number (48.6%) of males. For UCT 512, the 1,5 to 2 year old-child, sex could not be determined (pp. 10-11). The burial position of individuals was also taken into account and documented. Of the 35 individuals, thirty were placed in a supine position and possibly UCT 550 too, making the total 31. Four others (UCT 526, 555, 557 and 563) were buried facing the Signal Hill, an important location for Muslims in the Cape (Kootker et al., 2016, p. 15). Grave goods were absent in all cases. One distinctive burial includes three individuals, who were buried in the same coffin. The individuals were a 25- to 30-year-old male, (UCT

510), a sixteen year old girl (UCT 511) and the toddler-aged child (UCT 512). Individuals UCT 510 and UCT 511 were both determined to be non-local, though they did not come from the same geographical area. The child did show local strontium values (Kootker et al., 2016, p. 14).

4.2.2 | Strontium isotope analysis

According to Kootker et al. (2016), the strontium ratios indicating an origin in the southwestern Cape region, which includes Cape Town, lie between 0.7086 and 0.7167. This is based on the strontium values from faunal remains from this specific area (p. 11). The strontium isotope analysis for the Cobern Street assemblage has been carried out on the first molars and deciduous teeth and has a standard deviation of 0.00001. It was determined through the results of the strontium isotope analysis that the individuals had origins in varying geological areas, without any ratios indicating grouping or an inclination towards a specific locality (Kootker et al., 2016, p. 9). At least ten individuals were determined to be of non-local descent based on these results: three female (UCT 542, 544 and 558), while six were male (UCT 510, 521, 536, 548, and 557), and one child who was also of female sex (UCT 535). The strontium values did not vary greatly between the two sexes. The individuals buried facing Signal Hill had origins in different regions, with strontium values between 0.70600 (UCT 557) and 0.71225 (individual UCT 526). The low strontium ratio of individual UCT 557 indicates provenance from a young volcanic region, which would include the Indonesian Archipelago, the Deccan traps region of India or volcanic islands in the Indian Ocean (p. 15).

A few cases showcase an indication of migrations before coming to the Cape area or allow for estimated origins, such as coming from a more radiogenic area. This was the case for individual UCT 558, who originated from a more radiogenic area initially until she was at least 16 years old, and UCT 510, who, in addition, had notably moved more than once, around 8 years-old and again after age 16. Individual UCT 542 also experienced multiple migrations during her life, and went to live in more radiogenic areas at the age of 3 and later migrated again after being 7. In contrast, individual UCT 548 (with $^{87}Sr/^{86}Sr$ values between 0.70603 and 0.71017) came from a lesser radiogenic region. The 12-year-old female UCT 535 did both have indicative intentional dental modification and a strontium isotopic value (0.72803) that indicated origins outside of the Cape region, in specific the Phanerozoic and Precambrian bedrocks in Mozambique (Kootker et al., 2016, p. 13).

4.2.3 | Dental modification

Six individuals (UCT 510, 511, 535, 548, 550 and 558) displayed signs of intentional tooth modification (all through the use of chipping), in all cases including the maxillary central incisors. Individuals UCT 510 and 511, who were buried together, displayed the same type of dental modification. Their central incisors in the upper jaw had been chipped mesially. Besides this, triangular-shaped notches were recorded in both of the second maxillary incisors. For the upper teeth

of individual UCT 548, a 35 to 50 year old male, the first incisors had been distally chipped, while the second incisors had been chipped mesially. The twelve-year-old female child UCT 535 had her first incisors in the maxilla chipped mesially, which is a type of intentional dental modification characteristic of people of Mozambican descent. The anterior teeth of individual UCT 558, a 30-year-old female, had been chipped into points. This was also the case for individual UCT 550, a female between the ages of 25 and 35 with chipped points for all four maxillary incisors (Kootker et al., 2016, pp. 7-8). This person and UCT 511 were determined to not originally be from the Cape region based on the presence of dental modification. Their strontium values, however, did indicate a provenance from the Cape. None of the individuals with intentional dental modification were buried facing Signal Hill (Kootker et al., 2016, pp. 10-11).

4.3 | Green Point

4.3.1 | General assemblage

The burial ground of V&A Waterfront Marina, Green Point, lies in the vicinity of the Slave Lodge, indicating a buried population of lower social economic status. In this cemetery, 57 intact primary burials and between twelve and fourteen secondary burials were recorded (Mbeki et al., 2017, p. 481). The 27 analysed individuals from Green Point were buried with a lack of care, visible through the "unmarked and haphazardly arranged graves, the lack of coffins, the presence of prone burials and the fact that the burial ground was not officially recorded on maps […] These individuals could have been newcomers to the Cape, in a weakened state from long sea journeys and the associated malnourishment" (Mbeki et al., 2017, p. 481). The majority of the people (40.7%) were between 26 and 50 years old, and at least nine individuals (33.3%) were over fifty years of age. Five people (18.5%) were between 18 and 25 years old and thus considered young adults. No one was found to be under eighteen, although for one individual age could not be determined. The sex distribution was as follows: eight individuals were female (29.6%), eighteen male (66.7%) and one undetermined (3.7%). Grave goods were absent and burial positions could not be determined (Mbeki et al., 2017).

4.3.2 | Strontium isotope analysis

For the Cape's local signature of the strontium isotope, Mbeki et al. (2017) have assumed the range to be between 0.7086 and 0.7179 (p. 483). The isotopic analysis of strontium was carried out on the dental enamel from all three molars if possible, with an SD of 0.0001. Based on the results from this analysis, it was deduced that male individuals showed a wider range of strontium values than those identified as female (p. 485). A total of eight people, of which six male (individuals MR 10, 25, 26, 33, 39, and 51) and two female (MR 20 and 45), were not native to the Cape region based on their strontium ratios. A few individuals (MR 20, 33, 39 and 51) experienced multiple migrations during their lifetime, and for individual MR 51, a 30 to 40 year old male, it could be determined that he

arrived at the Cape after the age of 7, while also having moved to a more radiogenic region around the age of 3. It is plausible that individual MR 4, a female over the age of 50, was born in the Cape, left the region when she was three years of age, and then came back after turning eight. This is based on the strontium values taken from the first two molars, with M1 being local and M2 non-local. Indications for estimated origins were present in individuals MR 33 (a 25 to 40 year old male), and MR 10 (a male between 18 and 35 years old), who were both likely from Mozambique based on their extremely high strontium values. Individual MR 10 ($^{87}Sr/^{86}Sr$ ratio of 0.7354) moved to the Cape region after the age of 18, and did not experience any migration before that. In all probability, individual MR 33 arrived from Mozambique in the Cape while still fairly young. Furthermore, the strontium value of ten individuals (3, 21, 28, 29, 34, 43B, 46, 49, 56, 58) were consistent with the local values of the Cape region and they may therefore be the descendants of the enslaved people that were taken to the Cape during their lives (Mbeki et al., 2017, pp. 485-486).

4.3.3 | Dental modification

In the assemblage of the Green Point burial site, only two individuals had gone through the process of dental modification. Among them is a 25 to 40-year-old male (MR 33), who displays signs of intentional dental modification that is characteristic for Mozambique, with maxillary incisors having been filed into points. The other person is individual MR 48, a 35 to 45-year old male, who also underwent filing as a modification method, in his case into a diamond shape. Even though the strontium isotopic values of this individual indicate local origins, the tooth modification is associated with and points to non-local provenance (Mbeki et al., 2017, p. 486).

4.4 | Simon's Town

4.4.1 | General assemblage

The site of Simon's Town (Olszewski et al., 2023) comprises the excavation of 184 individuals whose remains had been very poorly preserved. This burial site is characterised by a lack of female individuals and, despite the poor preservation, a great variation and presence of burial styles that could be determined for most of the burials. Variations of supine (laid on the back) burial positions were most popular, with arms being crossed in different ways (123 individuals, 66.8%), while ten people (5.4%) were buried in another manner. Due to disarticulation and being unable to determinate, 51 individuals (27.8%) were not assigned a burial style (Olszewski et al., 2023, p. 5). Tooth enamel from 25 individuals was taken and analysed through mass-spectrometry based peptide analysis to determine sex – this was not done for the entire database -, and the entire sample group was determined to be male (Olszewski et al., 2023, p. 3).

Of the 184 individuals, 43 people were subjected for further examination, including strontium isotope analysis, based on random selection. Based on this collective, a clear distinction in age and sex distribution can be observed in Simon's Town in comparison to the three other sites. Of the 43 analysed individuals, all were found to be adults except for one child and one adolescent. No females were identified, with all people being either male (58.1%) or unidentified (41.9%). Seven individuals had been buried with grave goods, the majority of which buttons (individuals 59, 72, 97A or 97B, 121 and 122A), but also a bead necklace (individual 97B, of male sex), leather (individual 27) and two wooden coffins (individuals 27 and 72). The necklace of individual 97B consisted of 41 beads made of glass: 36 striped and green and white of colour, and 5 black ones. The grave goods were dated to the colonial period (Olszewski et al., 2023, pp. 4-5). Based on all analysis, Simon's Town was determined to be a Dutch East India Company-personnel burial site (Olszewski et al., 2023, p. 10).

4.4.2 | Strontium isotope analysis

As with the study of Green Point, strontium values between 0.7091 and 0.7179 were taken as the local signature for the Cape region in Olszewski et al. (2023). The isotopic analysis was conducted on the first and second molars and all specimen underwent pretreatment, with an SD of 0.00001 or lower. Out of the 43 individuals, 39 were determined to be of local origins. Individuals 42B, the other two were deemed non-local. While sex could not be determined for 42B, 43A and 43B are male and all three of them are of adult age. A relatively small range in strontium values was detected, with 0.707409 (individual 43B) being the lowest, and 0.715812 (individual 66) being the highest value. Low strontium values such as for individuals 43A ($^{87}Sr/^{86}Sr$ value 0.708839) and 43B indicate a provenance in areas "with younger geology or with increased influences from marine derived strontium" (Olszewski et al., 2023, p. 9). Values above 0.7280 were not detected, meaning there are no indications that any of the people in this assemblage were of Mozambican origin. Places of provenance did include South Africa, Europe and regions in the young volcanic Indian Ocean basin (Olszewski et al., 2023, p. 8).

4.4.3 | Dental modification

No signs of intentional dental modification were observed in the burial assemblage from Simon's Town. A total of four individuals, however, displayed unintentional alteration in their denture on the anterior teeth and premolars, namely "distinctly notched grooves", which was determined to be formed during life through the smoking of clay pipes (Olszewski et al., 2023, pp. 8-9).

4.5 | Intra-site comparison

4.5.1 | Age and sex ratios complete database

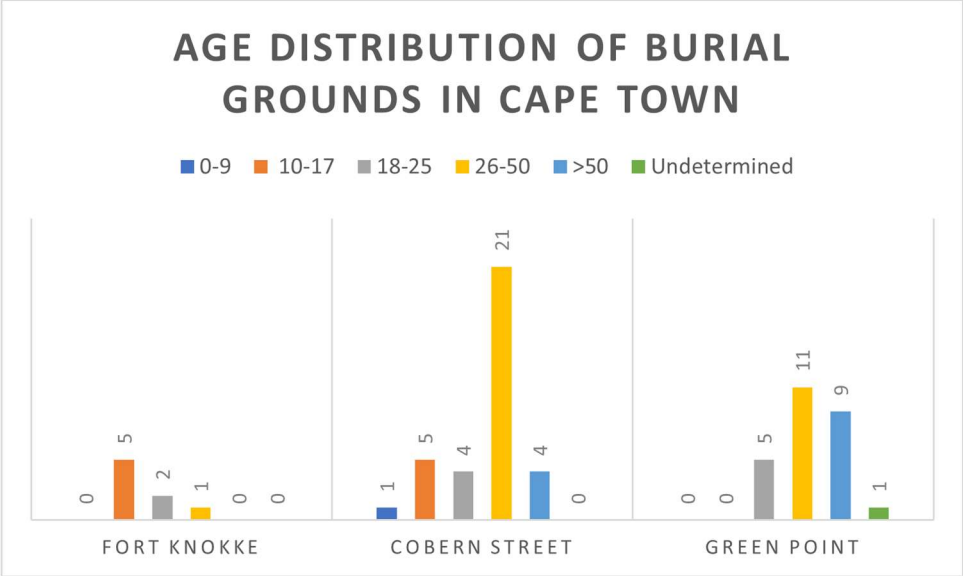

Figure 4.3. Age distribution for the burial grounds of enslaved people in Cape Town, for the sites Fort Knokke (Cox & Sealy, 1997), Cobern Street (Kootker et al., 2016), and Green Point (Mbeki et al., 2017). Simon's Town (Olszewski et al., 2023) not included.

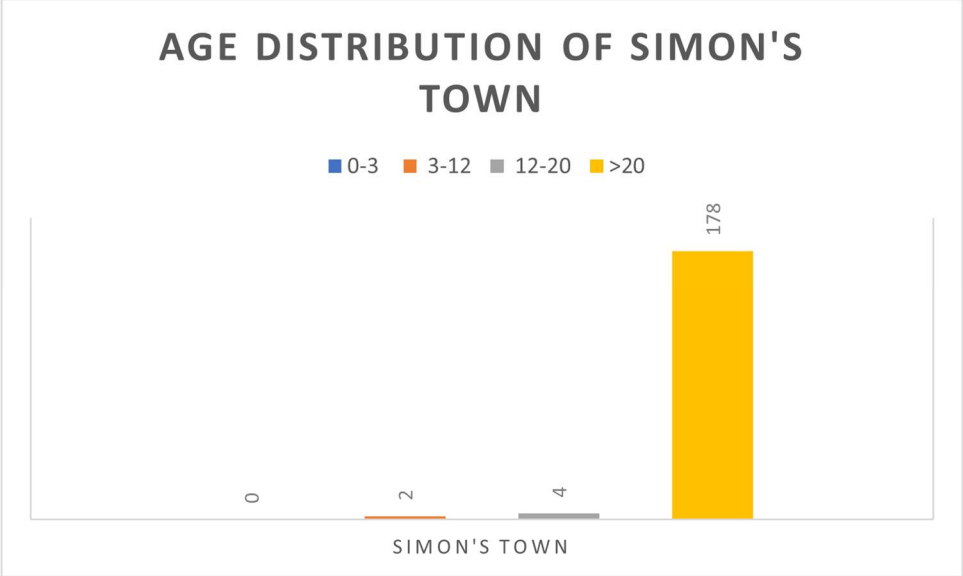

Figure 4.4. Age distribution of the 184 individuals of the VOC-personnel burial ground in Simon's Town (based on Olszewski et al., 2023).

The age distribution for each individual site do differ from each other to a certain extent. An overview has been presented in *Fig. 4.3* for the sites Fort Knokke (Cox & Sealy, 1997), Cobern Street (Kootker et al., 2016) and Green Point (Mbeki et al., 2017), while *Fig. 4.4* represents the age ratios for Simon's Town (Olszewski et al., 2023), as the categories of this study differed from the other three. The majority of the analysed individuals of Fort Knokke were young, with only one individual above the age of 21, while the average age for Cobern Street lies between 26 and 50. Even though the majority in Green Point also falls in this category, a larger proportion of individuals were likely older than fifty

years old compared to Cobern Street (only four individuals) and Fort Knokke (none), and its age ratios compare most closely to Simon's Town. Additionally, Green Point is the only burial site that does not have any underaged individuals. A clear distinction can be made between the three burial grounds where enslaved people were buried and the burial site in Simon's Town, which was dedicated to VOC-personnel. Of the 184 excavated individuals there, only six (3.3%) were under the age of twenty (Cox & Sealy, 1997; Kootker et al., 2016; Mbeki et al., 2017; Olszewski et al., 2023).

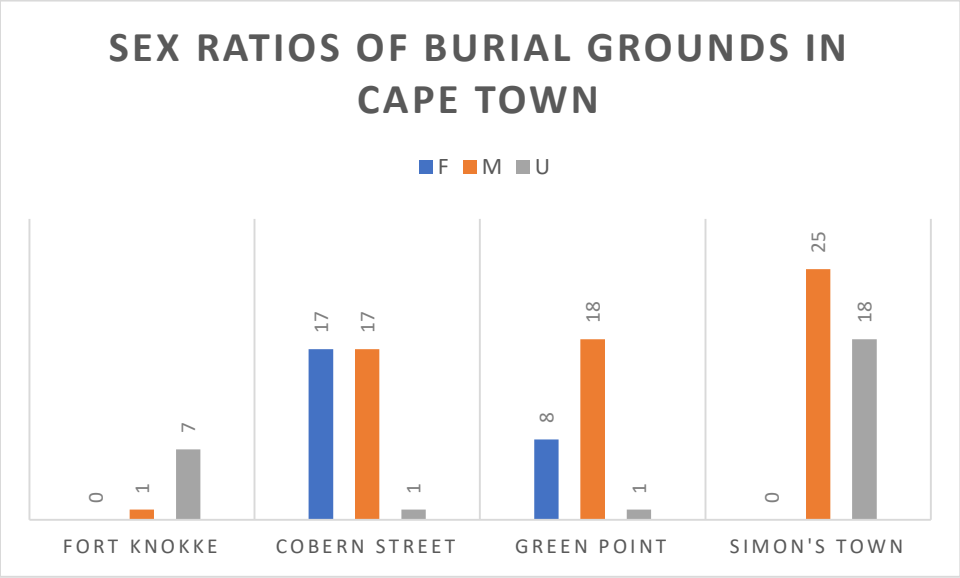

Figure 4.5. Sex ratios of burial grounds in Cape Town, for the sites Fort Knokke (Cox & Sealy, 1997), Cobern Street (Kootker et al., 2016), Green Point (Mbeki et al., 2017), and Simon's Town (Olszewski et al., 2023).

In regard to the sex distribution of all four burial sites (see *Fig. 4.5*), a sharp distinction is observed between the burial sites of enslaved people and Simon's Town, excluding Fort Knokke as none could be assigned a certain sex except for the adult male. While both Cobern Street and Green Point have a certain number of female individuals (between 29.6% and 48.6%), Simon's Town does not have a single determined female person in its burial assemblage (Cox & Sealy, 1997; Kootker et al., 2016; Mbeki et al., 2017; Olszewski et al., 2023).

4.5.2 | Strontium isotope analysis

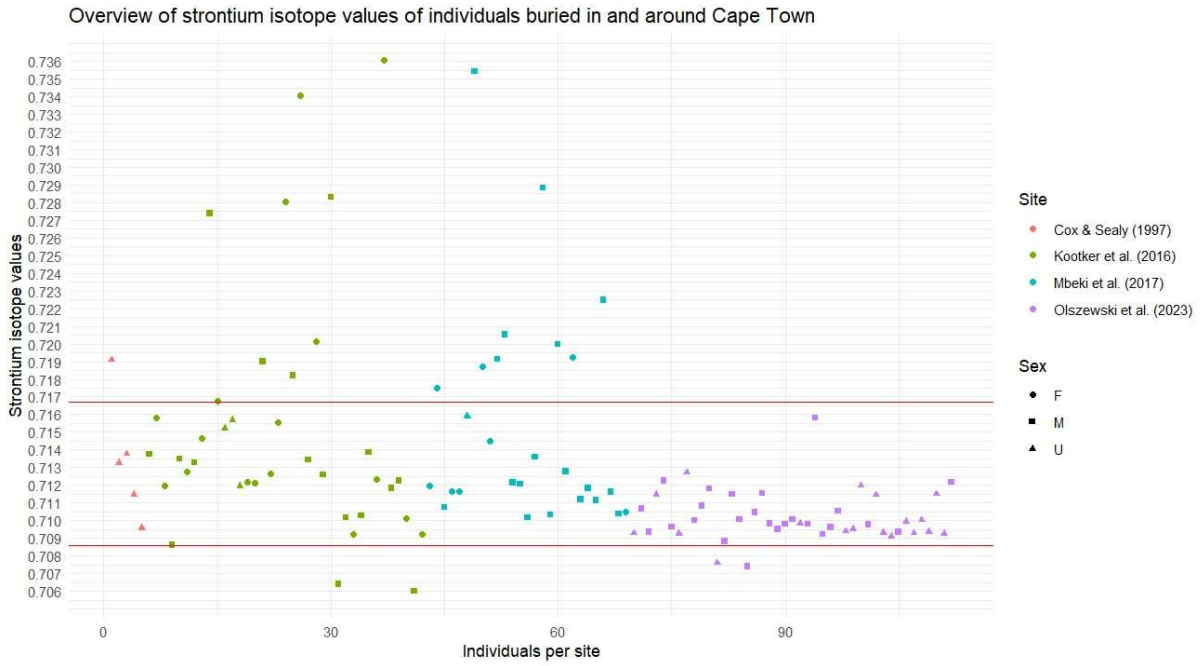

Figure 4.6. A scatterplot of all strontium isotope values per individual, for the sites Fort Knokke (Cox & Sealy, 1997), Cobern Street (Kootker et al., 2016), Green Point (Mbeki et al., 2017), and Simon's Town (Olszewski et al., 2023). The two horizontal red lines mark the borders of the local strontium signature of the Cape region. Sex abbreviations are F (female), M (male) and U (undetermined).

Site	Sex	Total individuals	Total individuals (%)	Non-local individuals (#)	Non-local individuals female/male (%)	Non-local individuals entire assemblage (%)
Fort Knokke	**Total**	**5**	**100%**	**5**	**100%**	**100%**
	F	0	0%	0	0%	0%
	M	1	20%	1	20%	20%
	U	4	80%	4	80%	80%
Cobern Street	**Total**	**35**	**100%**	**10**	**100%**	**28.6%**
	F	17	48.6%	3	30%	8.6%
	M	17	48.6%	7	70%	20%
	U	1	2.9%	0	0%	0%
Green Point	**Total**	**27**	**100%**	**8**	**100%**	**29.6%**
	F	8	29.6%	2	25%	7.4%
	M	18	66.7%	6	75%	22.2%
	U	1	3.7%	0	0%	0%
Simon's Town	**Total**	**43**	**100%**	**3**	**100%**	**7.0%**
	F	0	0%	0	0%	0%
	M	25	58.1%	2	66.7%	4.7%
	U	18	41.9%	1	33.3%	2.3%

Table 4.1. Overview of individuals non-local to the Cape region subjected to strontium isotope analysis, for the sites Fort Knokke (Cox & Sealy, 1997), Cobern Street (Kootker et al., 2016), Green Point (Mbeki et al., 2017), and Simon's Town (Olszewski et al., 2023). Sex abbreviations are F (female), M (male) and U (undetermined).

An overview of the strontium isotope values of each analysed individual in the database is displayed in the scatterplot of *Fig. 4.6*. Strontium isotope analysis was carried out on more than one specimen for the majority of individuals in Cobern Street, Green Point and Fort Knokke, resulting in multiple values per individual. The strontium values shown in *Fig. 4.6* have been selected based on the tooth the sample was extracted from, with a preference for the first molar, dating from birth to 2.9 years in the maxillae or to 3.0 years in the mandible (Kootker et al., 2016, p. 8). Exceptions are individual UCT

556 from Cobern Street with a sample from the lateral mandibular incisor, dating between five months and 3.8 years; samples from the second molar in three individuals from Green Point (MR 9, 10, and 28), dating between 3 and 6.4 years; and all individuals from Fort Knokke, whose teeth were in some cases too decayed to be analysed and instead bone samples were used. The results from the strontium isotope analysis show a difference between the burial sites of the enslaved people, where more than a quarter of the analysed individuals were of foreign origins, and the burial ground in Simon's Town, with only 7% being non-local. For sex ratios in non-local individuals, see *Table 4.1*. The strontium values that differed significantly from the local Cape region ratios indicated origins in Mozambique for all three of the burial sites of the enslaved, but also specific regions in the Indian Ocean. In Simon's Town, the foreigners were determined to be from other regions in South Africa, Europe and the young volcanic Indian Ocean basin (Cox & Sealy, 1997; Kootker et al., 2016; Mbeki et al., 2017; Olszewski et al., 2023).

4.5.3 | Intentional dental modification

Site	ID	Age	Sex (M/F)	Dental modification
Fort Knokke	4773	< 16	?	R11, R12, L11. Filed to points.
Fort Knokke	4774	12	?	Maxillary left canine: notch between central incisors and pointed lateral incisors.
Fort Knokke	4872	> 21	M	Upper and lower incisors filed to points.
Fort Knokke	4764	18-21	?	Chipped L11.
Cobern Street	20A	25-30	M	The maxillary central incisors were chipped mesially at the midline, and the lateral maxillary incisors were chipped distally to form inverted 'V' shapes.
Cobern Street	20B	16	F	The maxillary central incisors were chipped mesially at the midline, and the lateral maxillary incisors were chipped distally to form inverted 'V' shapes.
Cobern Street	40	12	F	The maxillary central incisors were chipped mesially at the midline.
Cobern Street	50	35-50	M	The central maxillary incisors were chipped distally, and the lateral maxillary incisors were chipped mesially.
Cobern Street	52	25-35	F	The chipping of the maxillary central and lateral incisors to points.
Cobern Street	60	30	F	The central and lateral maxillary incisors are sharpened to points, by chipping the incisors both mesially and distally.
Green Point	33	25-40	M	Aesthetic modifications to the maxillary medial incisors (filed to a point).
Green Point	48	35-45	M	Teeth filed into a diamond shape.

Table 4.2. Overview of intentional dental modification per individual, for the sites Fort Knokke (Cox & Sealy, 1997), Cobern Street (Kootker et al., 2016), and Green Point (Mbeki et al., 2017). No intentional dental modification was registered for Simon's Town (Olszewski et al., 2023).

All sites combined, twelve individuals displayed signs of intentional dental modification, none of whom still had their deciduous teeth (see *Table 4.2*). All twelve individuals with intentional modification were determined to be non-local to the Cape region. Modification styles include chipping and filing. An equal distribution of male and female sex is visible (both 33.3%), alas the majority of human remains of the four individuals from Fort Knokke were too much decayed to affirm sex. Different ratios can be observed in regard to age. The individuals of Fort Knokke are younger than the individuals from other sites, though two underaged individuals with dental modification were also present in the Cobern Street assemblage. None of the people from these two sites are aged older than

thirty, which is in contrast with possibly both individuals from Green Point. For some of the individuals, namely MR 33 from Green Point and UCT 535 from Cobern Street, the pattern of decoration indicates Mozambican origin. Fort Knokke allows a more specific indication for estimated regions, with the individuals being from several indigenous groups in southeastern Africa (Cox & Sealy, 1997; Kootker et al., 2016; Mbeki et al., 2017; Olszewski et al., 2023).

5. DISCUSSION.

This chapter is dedicated to contextualising the results in an attempt to provide answers to what the origins are of the enslaved individuals buried at the cemeteries of Cape Town; how these results relate to the historical information available on the possible origins of enslaved people in the Cape region; how strontium isotopes assist in determining their origins and possible patterns regarding the places of origin; and how dental modification present in the human remains relates to the culture and origins of these people. Below, the four sites of Fort Knokke, Cobern Street, Green Point, and Simon's Town, comprising the main research of this thesis, will be discussed. An individual reflection will be made first for each site, after which they will be compared to each other. This will then be collated to the historical data available and lastly, a reflection will be provided on the research process.

5.1 | Intra-site analysis

All four burial sites date to the period of the eighteenth and nineteenth centuries: from 1750 to 1827 for Cobern Street (Kootker et al., 2016); 1750 to 1850 for Green Point (Mbeki et al., 2017); and 1765 to 1795 for Simon's Town (Olszewski et al., 2023). The shipwreck from Cox and Sealy (1997) stranded in Fort Knokke on the 18th of May 1818. Thus, the oldest sites are Green Point and Cobern Street, and Simon's Town is the youngest. Green Point and Simon's Town do overlap in time.

5.1.1 | Fort Knokke

The analysed group of individuals of Fort Knokke is young, with all but one being younger than twenty-one years old at death. This is in accordance with the practice of slave traders searching for young individuals to sell and buy. According to the preferences for import by the Dutch East India Company during the seventeenth and eighteenth centuries, the ideal age for men was thirteen years, and for women sixteen (Mbeki & Van Rossum, 2016, p. 111). This sentiment reflects the general want for young individuals who would most likely have more energy and power to carry out labour. Thus, while this specific ship was not sailing for the Dutch East India Company, it is conform the norm to carry a young group of people. However, the ages of the enslaved individuals who survived are unknown and it is possible that these people were older than those analysed by Cox and Sealy (1997). Perhaps the young individuals were located in a hard to reach part of the ship and that is why rescue came too late to save them. As the human remains were not well-preserved, sex could not be determined for any of the individuals but one. This is a recurring phenomenon for the other burial sites too, though not to this extent.

Five of the individuals had their teeth intentionally modified during life. The patterns were not the same in each individual and could be categorised as follows: the filing and notching to points, in both the upper and the lower jaw; removing corners of the first incisors; and reverted, rounded V-shape

diastemas in the upper first incisors. According to the studies of Alpers (1975), Hambly (1930), Waller (1880) and Werner (1906) as cited in Cox and Sealy (1997), these patterns of tooth modification correspond with the traditional types of dental modification in the cultures of the Makua, Maravi and Yao, who resided in regions in southeast Africa such as Mozambique and Malawi (p. 218). Based on strontium, carbon and nitrogen isotopic analyses of the eight individuals from, and the types of dental modification, it can be concluded that these individuals came from different geological regions in Africa (Cox & Sealy, 1997, p. 218).

5.1.2 | Cobern Street

The Cobern Street assemblage showed an almost evenly distributed ratio in male and female sex. In case of the ten individuals deemed non-local based on strontium values, the ratio shifted to 2:3, with more male individuals having foreign origins. Some individuals had experienced multiple migrations in their youth before coming to the Cape, which could be related to the private trade in enslaved individuals in the Indian Ocean basin, especially because one of the individuals moved away from the Cape to later come back again. People involved in the slave trade, such as VOC personnel, would bring their own enslaved individuals with them when moving, to for example Cape Town, and in some cases they would sell these people to others once arrived (Worden, 2016, p. 1382). The majority of the individuals were between 26 and 50 years old, with the second biggest group being teenagers between 10 and 17 years of age. It can therefore be concluded that the buried population in Cobern Street was relatively young. Grave goods were absent in this burial site, which could indicate a poorer population of buried people. All evidence points towards Cobern Street being a burial site for poor people, and specifically the enslaved population of Cape Town.

Four individuals (UCT 526, UCT 555, UCT 557, UCT 563) and possibly one other individual (UCT 550) were buried differently from the supine position present in other graves. They were positioned facing Signal Hill, which lies a few kilometres to the north of Table Mountain. These individuals range vastly in age, origins and sex, and thus this behaviour does not belong to a singular demographic group. These people were most likely Muslim, as Signal Hill has been considered a holy place of Islam in Cape Town (Kootker et al., 2016, p. 15). There was a large number of enslaved Muslims present in the Cape's society, who had either converted or were born Muslims. These individuals were referred to as 'Malays', as many of the Muslim individuals in the Cape originated from this region in the Indian Ocean (though not exclusively) (Worden, 2016, p. 1391). Through strontium isotope analysis, it was concluded that at least one individual (UCT 557, a 40-year-old male) showed values from a volcanically active region like the Indonesian archipelago, which does align with the main regions of provenance for Muslim-born individuals. The locally born individuals could either be second-generation enslaved people or be reverted after having arrived at the Cape.

Strontium isotope values for ten individuals indicated non-local origins. However, an additional nine individuals were estimated to be from foreign origins to the Cape based on the carbon and nitrogen isotope analyses that were carried out on the same group of individuals as the strontium isotope analysis, while their strontium values were local. The individuals with deviating nitrogen values were not classified as non-local, as there are multiple local factors that could lead to alteration of the isotopic values (Kootker et al., 2016, p. 6). The local diet of the western Cape region was determined by Kootker et al. (2016) by observing the carbon values of individuals throughout their lives. While in early life there was a large variety in diet, this changed to a more restricted diversity during adulthood. This corresponds with the average ages of enslaved individuals being transported to the Cape Colony. These later values are therefore deemed local to the Cape, and this is "a diet consisting of predominantly C3 foods with a contribution from C4 and/or marine food resources" (Kootker et al., 2016, p. 9). Diets rich in ^{13}C, such as those mainly based on C4 or marine plants, would presumably be considered non-local to the Cape.

The main focus of Kootker et al. (2016) was to conduct isotopic analysis on skeletons from the Cobern Street burial assemblage that were deemed suitable for analysis. In their description of the individuals and specimen, dental modification is also touched upon. However, a previous study conducted by Manyaapelo (2007) focussing solely on dental anthropology, indicates that some of the data provided by Kootker et al. (2016) is incomplete or incorrect. Kootker et al. (2016) were aware of the study by Manyaapelo (2007), although it seems like they did not use the results in their own study and they only refer to an illustration from the thesis (Kootker et al., 2016, p. 6). With his analysis, Manyaapelo (2007) determined that a number of individuals who did not show signs of tooth modification according to Kootker et al. (2016) had in fact undergone intentional dental modification (see *Appendix D*). This is the case for seven individuals, of which one person is not included in the isotopic study (UCT 562), a 37.5-year-old male. Individual UCT 547, a 30- to 35-year-old male that was not locally born based on his strontium isotope values, had multiple of his teeth filed to a point. This was also not documented by Kootker et al. (2016).

The remaining six individuals (UCT 563, UCT 504, UCT 500, UCT 544, UCT 526, UCT 562) had a different type of dental modification compared to that described for the other individuals in Kootker et al. (2016), namely 'buccal filing' (see *Fig. 5.1*). This type of modification is done on the buccal surface of the teeth, instead of the sides as is the case with mesial and distal filing. This was observed in three male and two female individuals, and one of undetermined sex. Thus, two different types of intentional modification were present in the Cobern Street burial assemblage: mesial and distal filing, and buccal filing. In addition, a female individual over fifty years of age (UCT 508), had an altered shape to some of her teeth, but this was unintentional and due to pipe smoking. This was also not included in the study of Kootker et al. (2016). She was determined to be non-local to the Cape

based on the carbon and nitrogen isotopic values, though the strontium values did fall in the local range of the Cape.

Figure 5.1: Intentional dental modification in individual UCT 562, who was not included in the study of Kootker et al. (2016), presented as buccal filing on the upper teeth (Manyaapelo, 2007, p. 106, Figure 30).

Now that intentional dental modification has been observed in an additional six individuals of the original database of Kootker et al. (2016), a remarkable notion can be made about the origins of these people, especially of those with buccal filing. Where most individuals with mesial and distal filing were determined to be non-local based on either their strontium values or the carbon/nitrogen-isotope values, all but one individual with buccal filing (UCT 544) showed strontium values designated to the Cape's local signature. This has important implications for the existence of dental modification in the enslaved population of Cape Town. In their research, Kootker et al. (2016) presented the hypothesis that enslaved individuals abandoned the dental modification practices after becoming enslaved (p. 14). It could be suggested that instead of halting the practice entirely, an adapted version of modification was introduced to still be able to continue a practice of great importance in many of the cultures. Additionally, it would allow for a faint connection to their community back home and keep a sense of self or the agency to determine one's own identity, perhaps also as a sign of resistance. Buccal removal, as also observed in these six individuals, can be done in such a way that it is almost unnoticeable, which could be the reason why Kootker et al. (2016) did not observe it when they conducted their analyses. It must be noted in this case that this theory is based on only six individuals found in the burial grounds of Cobern Street, a number that is too small to base a formal conclusion on.

Most of the individuals showed local strontium values and were therefore assumed to have been born in the Cape region, although there is a possibility that other areas globally may yield the same results based on geology. The ten individuals that were born somewhere else showed values that corresponded with those of Mozambique and young volcanic regions in the Indian Ocean basin, such as the Indonesian archipelago or regions with similar geographical characteristics. While more male individuals were of non-local origins, the strontium values of both males and females did not indicate certain groupings or differences regarding the regions of origin (Kootker et al., 2016, p. 9).

5.1.3 | Green Point

At least eight individuals from the Green Point burial ground were deemed not local to the Cape region based on their strontium values. A ratio of 1:3 shows most non-locals were male, which is similar to the total assemblage and not a significant difference. Mbeki et al. (2017) argue that a wider range of strontium values can be observed for the male individuals, but there are only two female persons to compare the values to. This conclusion might thus not be based on a sufficient foundation. Individual MR 48, whose teeth were filed to points, was determined to be non-local based on the dental modification by Mbeki et al. (2017). Remarkably, the strontium values of this person are local. This might indicate dental modification practices were carried out on an individual whose parents were non-local to the Cape, though it is argued that this practice was halted by studies such as Kootker et al. (2016). It could also be that this individual came from a region outside of the Cape with a similar local signature. Based on the results of the strontium isotope analysis and osteological analysis, estimated origins include Mozambique and more radiogenic regions than the Cape. Some individuals also experienced multiple migrations in their early life before coming (back) to the Cape region.

The remains of the individuals selected for strontium isotope analysis by Mbeki et al. (2017) have also been subjected to carbon and nitrogen isotope analyses. Through this, it was discovered that an additional three individuals (MR 5, 31 and 32), all male, were of non-local origins based on their diet, while their strontium values were local. Additionally, individual MR 48, a 35- to 45-year-old male, did not originally come from the Cape region based on his dental modification, despite all isotopic analyses indicating local origins.

The Green Point burials have also been analysed by Manyaapelo (2007). Mbeki et al. (2017) were aware of this previous study and referenced relevant information three times in their article. The documented intentional modification in this burial assemblage by Mbeki et al. (2017) correspond with the findings of Manyaapelo (2007). Both have described patterns of filing in individuals MR 33 and MR 48. Buccal filing is completely absent in this burial site. What is not documented in Mbeki et al. (2017), however, is the unintentional dental modification in five of the analysed individuals, and additionally another individual (MR 38) that was not included in this study (see *Appendix D*). These people (MR 25, MR26, MR 33, MR 38, MR 43B and MR 61) all showed signs of pipe wear. Four out of six were determined to be of male sex. Individual MR 33 had both intentional modification in the form of diamond-shaped filing, and unintentional modification through pipe smoking (see *Fig. 5.2* and *Fig. 5.3*). Strontium isotope analysis on the five individuals indicates three males to be non-local (MR 25, MR 26 and MR 33), and one female (MR 61) and one male (MR 43B), both above forty years of age, to be born in the Cape.

Figure 5.2. Signs of pipe smoking presented as a rounded modification in individual MR 33 from Green Point (Manyaapelo, 2007, p. 106, Figure 29).

Figure 5.3. Intentional dental modification in individual MR 33 from Green Point, with filed points in the incisors of the upper jaw (Manyaapelo, 2007, p. 105, Figure 27).

5.1.4 | Simon's Town

In Simon's Town, the enslaved population was similar to that in Cape Town. Southeast Asian people were also preferred here, although the background of these individuals varied widely, as also the case for Cape Town (Young, 2013, pp. 151-152). However, it was determined by Olszewski et al. (2023) that the analysed burial ground in Simon's Town was not the resting place for enslaved people. Instead, it was dedicated to personnel of the Dutch East India Company hospital that was located near the site. This has been concluded based on the lack of female individuals present on the site and the provenance of the buried individuals. This burial site had a more extensive and a larger assemblage of grave goods, which included a glass bead necklace that belonged to a local adult male. Glass beads were present in South Africa and especially the Cape after the region came into contact with merchants from Arabia and Europe, but they would have been very expensive in the time Simon's Town's burial ground was in use (Iziko Museums of South Africa, n.d.). This indicates that this specific individual likely acquired some wealth during his lifetime. Notably, grave goods were only present in individuals that were deemed local after isotopic analysis.

Many of the human remains were in poor shape due to bad preservation, and strontium isotope analysis was only conducted on 43 out of the 184 individuals in the assemblage. It was determined that most individuals were local to the Cape region, and only three came from places outside the Cape,

namely another part of South Africa, Europe and volcanic regions in the Indian Ocean basin. This aligns with the expected origins of people working for the Dutch India Company, who would either be from settler communities in Asia such as the Dutch Indies, which does have young volcanic regions, or countries in Europe from where the first settlers came. Additionally, individuals 42B, 72, 105 and 138 were determined to be non-local based on carbon isotope analysis, and one (individual 48) based on his ^{18}O-values, which indicated a region far from the equator or on a higher altitude.

While the teeth of the buried population in Simon's Town were very poorly preserved, it could be determined that the only form of dental modification was unintentional. These were in all cases grooves that had been worn out by the usage of wooden or clay pipes. This corresponds with the habits of pipe smoking during the colonial era in South Africa, and also the remains of clay pipes found on the site.

5.2 | Inter-site comparisons

5.2.1 | General findings

The conclusions of the studies found that Cobern Street and Green Point are burial sites dedicated to burials of enslaved people, and the burial population of Simon's Town is that of Dutch East India Company-personnel, which is reflected by the lack of female individuals, the provenance of individuals and their average age at death. Grave goods are absent in Cobern Street and Green Point, while 16.3% of the human remains in Simon's Town were accompanied by grave gifts such as buttons, leather and necklaces. Coffins were present for two individuals in Simon's Town and one for a three-person-burial in Cobern Street. As Fort Knokke is not a burial ground, grave goods are absent because there was no intention of laying people to rest on this site. The absence of grave goods in the actual burial grounds might indicate a population that was poor. This is supported by the state of burials in Green Point, which were created hastily and without too much care.

Results from the strontium isotope analysis determined a notable part of the buried population was foreign to the Cape. This burial ground was used for paupers, which included enslaved individuals as well as people from the lowest ranks of social status that would work for the Dutch East India Company or had just arrived by ship (Mbeki et al., 2017, p. 481). Cobern Street also had a buried population existing of enslaved individuals, but the people in this cemetery were buried with care, indicating that they had been part of an already established community. In addition, some individuals with a local strontium isotopic value from both Cobern Street and Green Point were determined to be non-local based on the diet they followed during their lives, which was observed through the carbon isotopes. On all four sites, however, the human remains were poorly preserved. Because this is the case for Simon's Town as well, it can be concluded that the state of preservation of the human remains is not indicative of enslaved or very poor populations.

5.2.2 | Age and sex

At both the burial sites of enslaved people, Cobern Street and Green Point, and the VOC-personnel burial ground in Simon's Town, the average age is notably higher than that of Fort Knokke. This might have to do with the fact that the individuals on the other sites had been living there for at least a number of years already, in some cases decades, while the people in Fort Knokke had just been taken captive and were on their way to being sold. Presumably, the individuals buried in Cobern Street and Green Point also arrived at the Cape at a young age, as it is likely that part of these individuals were owned or transported by the Dutch East India Company (Mbeki et al., 2017, p. 481), which imported individuals meant for enslavement at a young age (Mbeki & Van Rossum, 2016, p. 111).

Regarding sex, a division can be made between Simon's Town and the other three sites. No female individuals were identified in the former, while the ratios of female:male in Cobern Street and Green Point were more or less equal. Except for one person, an adult male, sex could not be determined for the individuals present in Fort Knokke. It is evident that the non-local enslaved people were either mostly male in case of Green Point or came from more diverse regions than their female counterparts in Cobern Street. It can be argued that more male individuals were brought to the Cape, especially from across the Indian Ocean in regions such as southeast Asia, which corresponds with the lack of women in both the general and the enslaved population of Cape Town. According to Groenewald (2010), women only made up about twenty to thirty per cent of the Cape's enslaved population during the period between 1652 and 1795 (p. 972). This is not completely congruent with the findings of the studies by Kootker et al. (2016) and Mbeki et al. (2017), but these two burial grounds were also in use until 1827 and 1850 respectively. Other studies argue that women were an important part of the enslaved population, as they were able to bear children and thereby increase the number of enslaved people a master had (Van der Ross, 2005, p. 39). Additionally, it could also be the case that, because men were expected to do the hard labour, the male individuals tended to live more in the rural areas for agricultural purposes, which would shift the ratio of the sex distribution within urban areas. This, however, is merely a hypothesis.

5.2.3 | Dental modification

Intentional dental modification was present in the sites of Fort Knokke, Cobern Street and Green Point, and absent in all individuals buried in Simon's Town. Analysis of the teeth of the buried population at Cobern Street and Green Point showed a division between the enslaved individuals born at the Cape and those that spent their childhood somewhere else or were born from freed enslaved parents. The former group tended to not experience as many hardships during their childhood based on the state of their teeth (Manyaapelo, 2007, p. 137). Besides this, dental modification is not as present in the locally born individuals as it is in the non-local individuals. Sex and age do not seem to be a factor in deciding who underwent dental modifications, except that all dental modification was present

on adult teeth and none on deciduous teeth, for both intentional modification and unintentional alteration through pipe smoking. The main type of intentional dental modification present in the enslaved individuals is the mesial and distal filing or chipping of the teeth, either to points or to create an inverted V-shape in the front incisors of the maxillae. Buccal filing based on the analysis of Manyaapelo (2007) was only observed in the population of Cobern Street, and not in that of Green Point. Perhaps this practice faded over time as Green Point continued to exist for an additional thirty years after Cobern Street, after the practice of very visible types of modification had already declined, but this cannot be said for certain.

Based on the data from Kootker et al. (2016) and Mbeki et al. (2017), it can be observed that signs of pipe usage are only present in the assemblage of Olszewski et al. (2023) in Simon's Town. This could indicate that smoking pipes was only practiced by people that were in specific ranks of society at the time, such as the free people. However, the dental analyses of Manyaapelo (2007) on both Cobern Street and Green Point determined that there were in fact individuals in the enslaved burial grounds that showed signs of pipe use. This included both female and male individuals, all of adult age, at an almost equal ratio. This was thus not exclusive for the richer or free part of the population in Cape Town during the seventeenth and eighteenth centuries or specific for one of the sexes.

5.2.4 | Estimated origins

The shipwreck at Fort Knokke originated from Mozambique, and sunk at the Cape while on its way to Brazil. The individuals from Simon's Town have been identified as VOC-personnel and come from South Africa, Europe and places in the Indian Ocean that align with the background of people working for the Dutch India Company. For Cobern Street and Green Point, the enslaved individuals determined to be non-local all came from regions within the Indian Ocean basin, which supports the historical data about Cape Town's position in global trading affairs and especially that of the Indian Ocean slave trade. In the Green Point assemblage, a wider range in strontium values was detected in the male individuals than was the case for the females, which Mbeki et al. (2017) argues is also the case for Cobern Street (p. 485). None came from other regions in continental Africa, which is congruent with the knowledge that only the very first enslaved individuals arriving at the Cape, in 1658, came from regions adjacent to the Atlantic Ocean, something that was never registered again (Groenewald, 2010, p. 865).

Most of the enslaved individuals, however, showed strontium values that were local to the Cape region. During the early nineteenth century, which overlaps with the period in which Cobern Street and Green Point were in use, more than seventy per cent of the enslaved population was second-generation enslaved and born in the Cape (Worden, 2016, p. 1380). These burial grounds therefore

reflect the enslaved population of Cape Town and matches the way this part of the Cape's society has also been documented in historical records.

5.3 | Comparison with historical data

Manyaapelo (2007) suggests that at two individuals from Cobern Street (UCT 510 and UCT 548) came to the Cape as enslaved individuals, based on both isotopic analysis and the type of dental modification resonates with that of certain regions in West Africa at the time (pp. 128-129). Additionally, dental modification for three individuals (UCT 547, UCT 558, and MR 33) that is suggested to corresponds with that practiced in Central and Western Africa (Manyaapelo, 2007, pp. 128-129). However, according to the studies cited earlier in the Background chapter, the only group of enslaved people being transported to the Cape from West Africa was the very first ship which came from Angola. After this transport, no other evidence has been found for a continuation of West Africa as a source for enslaved individuals. This evokes hypotheses such as that the catchment area of slave-raiders from eastern Africa could have extended as far as Central Africa or that transportation also happened over land. However, results from the strontium isotope analysis on individuals from Fort Knokke, Cobern Street and Green Point indicate possible origins in the Indonesian Archipelago, regions in India and eastern Africa, but not western Africa. Thus, while the dental modification might be characteristic for that of people from the Gold Coast and surroundings, it could also very well be from ethnic groups elsewhere in Africa whose traditional practices have not been documented. In addition, the mesial and distal notching present in the assemblages of both Cobern Street and Green Point have been concluded to be from Mozambican origin by Mbeki et al. (2017).

The intentional dental modifications that could be traced back all relate to East Africa, especially Mozambique and Malawi. None of the studies mention origins from South or Southeast Asia based on modification patterns. It is unknown whether there were any individuals from these regions in the Indian Ocean present in the assemblages that showed signs of dental modification. However, cultural tooth alteration has been practiced in many Southeast Asian and Pacific Island communities for a long time, and continues to be practiced up until today, especially by Hindus (Koesbardiati et al., 2015). It is therefore be possible that there were indeed enslaved Asian individuals with dental modification present in the enslaved population at the Cape. As many of the enslaved individuals from Asia were considered Malay and thus Muslim, however, it is not likely that dental modification was very prominent in this part of the population (see *2.4.5 Impact of religion*).

In general, four main regions of provenance can be distinguished in the enslaved population of the western Cape region. According to Shell (1994), these areas consist of India (25.9%); Indonesia (22.7%); Madagascar and the Mascarene islands (25.1%); and other parts of Africa (26.4%) (p. 41). This aligns with the estimated numbers in the research of Van der Ross (2005, p. 33) and those of

Groenewald (2010), who concludes that the most prominent origins of enslaved individuals in the period between 1652 and 1808 were India and Ceylon; Indonesia; Madagascar; and Mozambique (p. 965). These numbers shift noticeably when solely focussing on Cape Town, as from 1695 onwards, the population of the settlement consisted of individuals originating from South Asia (41.6%); South-East Asia (40.8%); and Africa (18.4%). This does not include the individuals at the Cape Colony born into enslavement (Worden, 2016, p. 1378).

The larger number of enslaved individuals from Asian descent in Cape Town compared to the western Cape region may be explained by the attitude of the colonisers towards individuals from certain backgrounds. For example, Asian individuals were considered to be more skilful and to be better equipped for creative purposes, while Mozambican and other African people were more quickly viewed as 'poor quality slaves' (Worden, 2016, p. 1385) and inferior (Worden, 2016, 1390). Enslaved individuals from Asian descent would thus not as quickly be selected for hard labour in the rural parts of the region, and therefore be more likely to reside within the borders of Cape Town. Because the Dutch East India Company already imported half of its enslaved individuals from Madagascar and Mozambique during the eighteenth century (Worden, 2016, p. 1385), the presence of enslaved individuals with Mozambican origins grew even larger during the first decade of the nineteenth century under British rule (Harries, 2016, p. 411).

The Dutch East India Company acquired its enslaved individuals through middlemen, meaning they did not participate in raids themselves. The capital Batavia on Java functioned as a centre from where the Company was ruled. Besides the trading contacts of the Dutch East India Company, private trade also took place, often participated in by (former) personnel of the Company. This became the largest source of enslaved individuals in Cape Town. In this private trade, at least in Southeast Asia, one of the possible methods to obtain enslaved individuals was by purchasing them in small numbers together with provisions during a stop. Enslavement happened systematically through a system of bondage, meaning "immobilising or tying down people socially and spatially to their community, polity, ruler or land" (Van Rossum, 2017, p. 218). This also included individuals that were captured and enslaved through conflict or war. The distributing of enslaved individuals for personal purposes was facilitated by connections between local middlemen and employees of the Dutch East India Company (Van Rossum, 2017).

The estimated origins of the assemblages of the three sites involving enslaved individuals (Cobern Street, Green Point and Fort Knokke) correspond with the trading routes documented for the Indian Ocean slave trade during the seventeenth, eighteenth and nineteenth centuries in Cape Town. This is especially true for the East African individuals, whose identification was supported by distinguishing dental modification styles. Through strontium isotope values, it was determined that part of the

enslaved population originated from South and Southeast Asia, in a few cases from geological areas with volcanic activity.

5.4 | Reflection

To date, only four strontium isotopic studies have been conducted on burial sites in and around Cape Town. These studies constitute all studies in the database of this thesis: Cobern Street by Kootker et al. (2016); Green Point by Mbeki et al. (2017); Simon's Town by Olszewski et al. (2023); and Fort Knokke by Cox and Sealy (1997). This entails that the later authors know of the studies published prior to theirs and hence, they refer to them in their own research, even going as far as to compare their own results with those of one of the other burial sites (e.g. in Olszewski et al. (2023)).

One of the downsides of using strontium isotope analysis is that it is difficult to pinpoint exactly what the location related to the strontium values in question is, regardless of how specific and detailed they might be. The problem is that for most regions in the world, not enough research has been conducted on determining the exact strontium values that would be considered local. This means that the resulting values often cover an extensive area. While the isotopic values of strontium have been well-documented in the Cape, values of some individuals could be incorrectly categorised as the local signature. Additionally, during the research for this thesis, it became apparent that the inclusion of carbon and nitrogen isotopic studies would have been of significance in regard to the research questions asked. Based on these two arguments, it can be concluded that the estimated number of non-local individuals in this thesis is therefore higher than proposed.

In addition, it is unknown whether some of the enslaved individuals from Cobern Street and Green Point were owned by the Dutch East India Company. These two burial grounds are located near each other, with a Dutch East India Company-hospital and the Slave Lodge in the same area (Mbeki et al., 2017, p. 481). There is, however, another hospital located even closer to the burial grounds, which could also have made use of these sites to bury their dead. In the case of the burial sites including both privately owned individuals and those from the Company, traces of a difference in treatment during life and in origins could be further investigated. As both burial grounds had only been around halfway through the eighteenth century, it is most likely that at least a large part of these individuals were privately owned. The reason for this is that private slavery became increasingly more established in the Cape during this time, which eventually led to more enslaved individuals being owned by a master compared to the Company (Groenewald, 2010, p. 969).

6. CONCLUSION.

This chapter will answer the research question: What do the origins of (formerly) enslaved people in cemeteries nearby Cape Town tell us about the slave trade in South Africa?

The Indian Ocean slave trade had a great impact on the formation of Cape Town into the society it is today. The strontium isotope studies and analyses of intentional dental modification in the database of this thesis were carried out on a total of 113 individuals from the burial sites of Fort Knokke, Cobern Street, Green Point, and Simon's Town, located in the Cape Colony. Through the analysis of these studies and their results, it was determined that all people who were not native to the Cape region had their origins somewhere in the Indian Ocean basin. The majority of estimated origins were determined to be from the Mozambique area, overlapping with present-day Malawi. Some of the individuals showed strontium isotope values that were congruent with volcanically active geological areas, possibly indicating Indonesian islands. Intentional dental modification practices allowed for an estimation of origins for a small number of individuals, based on the traditional patterns known to be from certain cultures and regions. All individuals that displayed signs of intentional dental modification were determined to be of non-local origin. Additionally, it was observed that the cultural tradition seemed to either have disappeared or be altered into buccal filing. The historical information on the origins of enslaved people in South Africa show that the four most prominent regions of provenance were India, the Indonesian archipelago, Mozambique and Madagascar. Enslaved individuals were captured from the inland regions by African or Asian middlemen and sold at the coast to European slave traders, either to the Dutch East India Company or through private trade. These trading networks and most prominent capture areas of the Dutch East India Company and private traders between the seventeenth and nineteenth centuries, align with the results of the strontium isotope analyses on enslaved people and their dental modification patterns in Fort Knokke, Cobern Street, and Green Point.

The introduction of slavery in the Cape region created a multiethnic society in the Cape Colony. The enslaved individuals came from a large variety of backgrounds, with their own cultural practices and identities. This included intentional dental modification, which was not widely practiced by the indigenous peoples living in the Cape region (the Khoikhoi and the San) before the arrival of the European settlers. Dental modification was an important practice in many of the ethnic groups enslaved people belonged to, and it helped in the creation of a community, a person's identity, and a sense of belonging with people who shared this identity. The traditional patterns and techniques observed in both the enslaved individuals and present-day indigenous communities are unique for each ethnic group. The enslaved individuals at the Cape, stemming from both Africa and Asia, introduced the concept of dental modification on a large scale, and it created a practice in modification in the Cape hinterlands that still exists to this day.

Slavery in the European territories in South Africa was crucial for these slave societies to exist, specifically Cape Town. The intermingling of African, Asian and European cultural aspects have created a very diverse society, with a multiethnic population and Afrikaans as a language born from many linguistic influences, such as by the Khoikhoi and the Malay from Southeast Asia. It must be acknowledged that the Indian Ocean slave trade and the Trans-Atlantic slave trade, both participated in predominantly by European states, have left a mark on the way African societies have developed and changed in the last centuries.

ABSTRACT.

Cape Town, South Africa, was initially founded by the Dutch as a refreshment station on the long journey to Asia. Soon, this settlement developed into an important participant in the network of the Indian Ocean slave trade. From the seventeenth to the nineteenth centuries, more than 63,000 enslaved individuals were imported by both the Dutch East India Company and private traders. These individuals came from a large variety of areas surrounding the Indian Ocean basin and therefore, many different cultures were introduced to the Cape. The start of the slave trade between Asia and Africa dates back several millennia, and it has subjected an equal amount of people to slavery as the Trans-Atlantic slave trade. Until recently, however, little research has been carried out regarding the Indian Ocean slave trade. The aim of this thesis is to create a better understanding of the impact slavery had on Cape Town's society, both in the past and in contemporary times. Humanising the victims of the slave trade is crucial in this study, which will be emphasized throughout the entire thesis. In order to do so, research will be focused on the origins of enslaved people and the cultural aspects that were part of their identities. This will be accomplished by studying strontium isotope analyses conducted by multiple researchers, on buried human remains from four cemeteries in Cape Town, as well as analysing dental modifications. The results from these two components will be compared to historical data about the Indian Ocean slave trade and the practicing of slavery within the Cape Colony. This will allow for a greater understanding on how these individuals are part of the whole system, and to possibly argue whether there can be patterns observed regarding origins. Slavery in Cape Town had an enormous impact on the way the colony developed itself and in the composition of ethnic groups within its society. This resulted in a multicultural town where the cultural practices of the many enslaved people are still visible today.

Key words: slavery, Indian Ocean basin, Dutch East India Company, Cape Town, dental modification, strontium isotopes.

Kaapstad, gelegen in Zuid-Afrika, werd in eerste instantie gesticht door de Nederlanders als veilige haven op weg naar Azië. Al snel ontwikkelde deze vestiging zich in een belangrijke speler in het netwerk van slavenhandel in de Indische Oceaan. Gedurende de zeventiende, achttiende en negentiende eeuw werden meer dan 63.000 tot slaafgemaakten geïmporteerd door zowel de VOC als particuliere handelaren. Deze mensen kwamen uit vele verschillende gebieden die de Indische Oceaan omringen, en brachten daardoor een grote variatie aan culturele gebruiken met zich mee. De slavenhandel tussen Azië en Afrika is al meerdere millennia oud, en in die tijd zijn een vergelijkbaar aantal mensen onderworpen aan slavernij als het geval was in de Trans-Atlantische slavenhandel. Echter is er tot voor kort maar beperkt onderzoek gedaan naar slavernij in de Indische Oceaan. Het doel van deze scriptie is vastleggen hoe slavernij zich uitte in Kaapstad, en wat voor effect het had op

de maatschappij binnen de kolonie, zowel in het verleden als het heden. Het humaniseren van de slachtoffers van de slavenhandel is cruciaal in dit onderzoek en dit staat dan ook centraal. Daarom zal worden gefocust op de herkomst van tot slaafgemaakten en de culturele aspecten die onderdeel uitmaakten van hun identiteit. In dit geval zal dit worden bereikt door het bestuderen van strontium isotoop analyses die zijn uitgevoerd door verschillende instanties op de menselijke resten in vier begraafplaatsen in Kaapstad. Dit wordt gecomplementeerd met een analyse van tandmodificatie. De resultaten van deze twee onderdelen zullen daarna vergeleken worden met de historische bronnen om de uitkomsten in een groter geheel te kunnen plaatsen en tevens een mogelijk patroon in herkomst te kunnen onderbouwen of weerleggen. De slavenhandel in Kaapstad had een zeer grote invloed in de ontwikkeling van de kolonie en de samenstelling van de maatschappij. Dit uitte zich in een multiculturele samenleving waarvan de gebruiken en effecten tegenwoordig nog steeds zichtbaar zijn.
Trefwoorden: slavernij, Indische Oceaan, VOC, Kaapstad, tandmodificatie, strontium isotopen.

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APPENDICES.

APPENDIX A: TYPES OF INTENTIONAL DENTAL MODIFICATION STYLES

Globally, many different styles of intentional dental modification are known. These include shaping through filing, chipping, and incising; alteration of colour; ablation (the removal of a tooth); and inlays (Burnett et al., 2023, p. 2). In this appendix, each of these categories will be provided with figures that illustrate what the type of modification looks like. All images have been taken from Burtnett et al. (2023).

1. Shaping

Figure A.1. Different shaping patterns in the incisors of the upper jaw, varying from inverted V-shapes to filed corners and buccal filing. These have been created through filing, but incising and chipping is also practiced in creating these patterns (Burnett et al., 2023, p. 3, Figure 1).

2. Alteration of colour

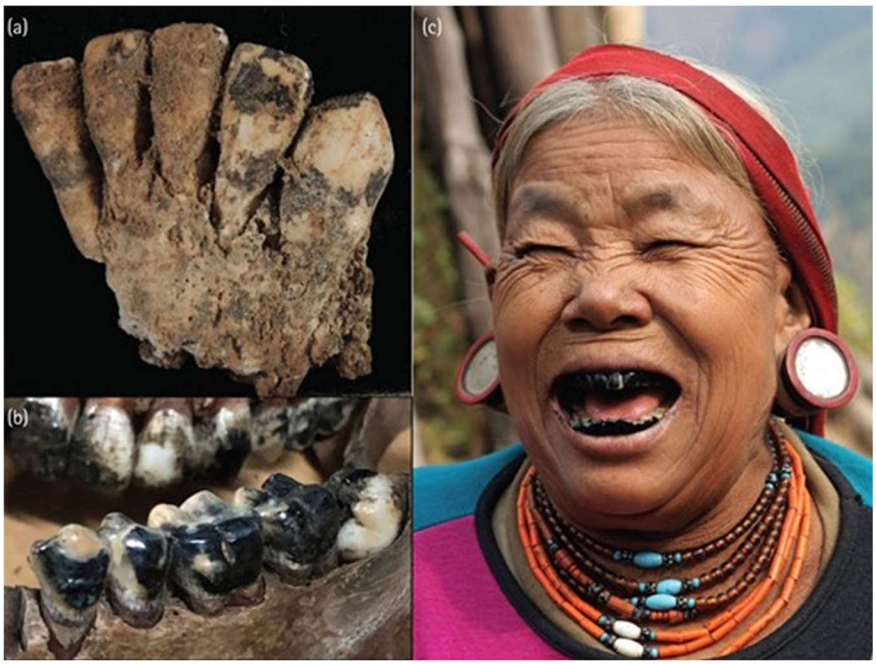

Figure A.2. Tooth colouration present in human remains (a, b) and an Indian woman (c), as a result of intentionally blackening the teeth through painting or dyeing (Burnett et al., 2023, p. 10, Figure 5).

3. Ablation

Figure A.3. Two individuals showing the intentional removal of teeth (through ablation) in the lower jaw (a, b) and the upper jaw (b) (Burnett et al., 2023, p. 6, Figure 3).

4. Inlays

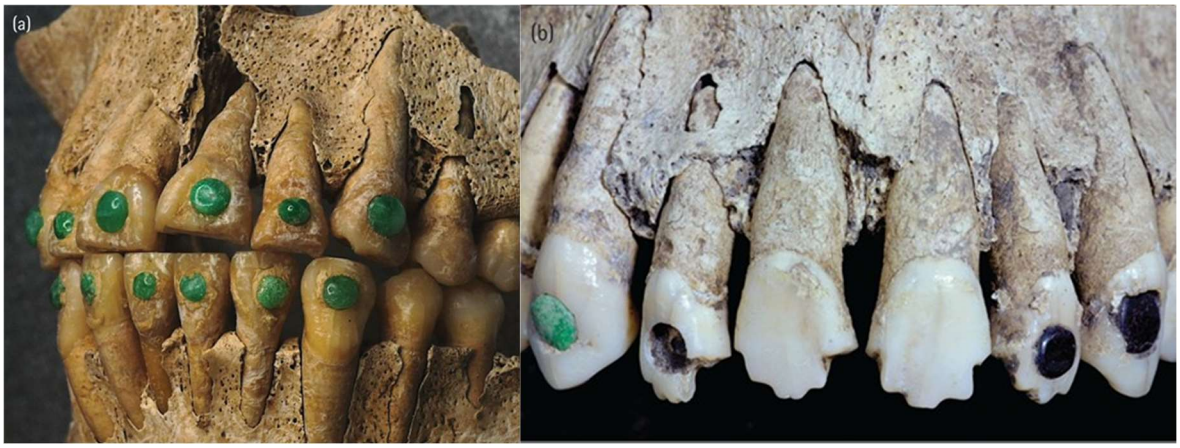

Figure A.4. Inlays in two individuals from Mayan (a) and Guatemalan (b) descent. (a) shows inlays from jade, while different types of material were used in (b). Additionally, shaping patterns can be observed in the incisors of (b) (Burnett et al., 2023, p. 8, Figure 4).

APPENDIX B: ERUPTION OF TEETH DATES

Kootker et al. (2016, p. 8):

Table 2. Chronology of human dentition in South African populations. Average crown formation times from [49].

		FDI notation		Average crown formation times	
Dentition	**Tooth**	**Right quadrant**	**Left quadrant**	**Initiation (C_i)**	**Completion (Cr_c)**
Permanent maxillary teeth	Central incisor	11	21	4 mon.	4.1 yr.
	Lateral incisor	12	22	12.5 mon.	4.8 yr.
	Canine	13	23	9 mon.	4.8 yr.
	First premolar	14	24	1.5 yr.*	6 yr.*
	Second premolar	15	25	2 yr.*	7 yr.*
	First molar	16	26	Birth	2.9 yr.
	Second molar	17	27	3 yr.	6.4 yr.
	Third molar	18	28	8 yr.	11.3–16 yr.**
Permanent mandibular teeth	Central incisor	41	31	3 mon.	3.4 yr.
	Lateral incisor	42	32	5 mon.	3.8 yr.
	Canine	43	33	6.5 mon.	5.2 yr.
	First premolar	44	34	1.75 yr.*	6 yr.*
	Second premolar	45	35	2.25 yr.*	7 yr.*
	First molar	46	36	Birth	3 yr.
	Second molar	47	37	3 yr.	6.2 yr.
	Third molar	48	38	8 yr.	11.2–16 yr.**

Key: C_i: FDI notation: a two-digit system (ISO 3950) developed by the Feédeération Dentaire Internationale (FDI) to associate information to a specific tooth. Syntax: <quadrant code><tooth code>. Deciduous teeth quadrant codes start with 5 (left quadrant maxilla), followed by 6 (right quadrant maxilla), 7 (right quadrant mandible), and 8 (left quadrant mandible); C_i: cusp initiated; Cr_c: crown completed (developmental stages conform to Moorrees [78]);
*: no data published by Reid and Dean [49]—formation ages adapted from Nelson and Ash [50];
**: formation age extended to 16 due to observed inconsistencies and variations in literature with regards to M3 crown formation times [50, 89].

doi:10.1371/journal.pone.0157750.t002

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APPENDIX C: THE DATABASE

TOTAL ASSEMBLAGE ENSLAVED PEOPLE PER SITE									
COBERN STREET (KOOTKER ET AL., 2016)									
BURIAL TYPE	ID	UCT	AGE	SEX	$^{87}Sr/^{83}Sr$	± 2 S.E.	DENTAL MODIFICATION	LOCAL	NOTES
B	3	460	20	M	0,71375	0,00001			
B	4	458.1	17-18	F	0,71581	0,00001			
B	10	498	35-40	F	0,71195	0,00001			
B	12	500	35-40	M	0,70862	0,00001			
B	13	501	30-40	M	0,7135	0,00001			
B	14	502	45-55	F	0,71274	0,00001		no	Local Sr ratios, deviating 13C-dentine values.
					0,71336	0,00001			
					0,71234	0,00001			
B	15	504	25	M	0,71328	0,00001			
B	18	508	>50	F	0,71465	0,00001		no	Strontium ratios compatible with the Cape, but strong reliance on C4 food resources uncharacteristics of the Cape diet.
					0,71499	0,00001			
					0,71167	0,00001			
B	20A	510	25-30	M	0,72738	0,00001	Yes. The maxillary central incisors were chipped mesially at the midline, and the lateral maxillary incisors were chipped distally to form inverted 'V' shapes.	NO	Lived in more radiogenic areas than the Cape in early life. Seems to have experienced at least two migrations event (one at 8 years old and one after 16).
					0,72858	0,00001			
					0,72278	0,00001			
B	20B	511	16	F	0,71675	0,00001	Yes. The maxillary central incisors were chipped mesially at the midline, and the lateral maxillary incisors were chipped distally to form inverted 'V' shapes.	no	Local Sr ratios, deviating 13C-dentine values.

					0,71522	0,00001			
					0,7157	0,00001			
B	20C	512	1,5-2	?	0,71194	0,00001			
B	21	514	25-35	F	0,71219	0,00001		no	Local Sr ratios, deviating 13C-dentine values. Strong reliance on C4 food resources uncharacteristics of the Cape diet.
					0,71158	0,00001			
					0,71199	0,00001			
B	23	516	17-19	F	0,71211	0,00001			
					0,71109	0,00001			
					0,71199	0,00001			
B	27B	521	40-15	M	0,719	0,00001		NO	
B	28	522	50	F	0,71267	0,00001			
B	34	528	14-15	F	0,71555	0,00001		no	Local Sr ratios, deviating 13C-dentine values.
B	40	535	12	F	0,72803	0,00001	Yes. The maxillary central incisors were chipped mesially at the midline.	NO	Non-local Sr-isotope values and non-local carbon isotope values. Significantly different diet during life. Displayed a type of intentional dental modification characteristic of people of Mozambique descent. Sr-isotope ratio consistent with provenance from the radiogenic Phanerozoic and Precambrian bedrocks in Mozambique.
B	41	536	35-50	M	0,71822	0,00001		NO	
B	44	542	40-50	F	0,73407	0,00001		NO	Multiple migration events evident. Transhipped to more radiogenic regions after the age of three, and experienced another (forced) migration after the age of 7.
					0,74186	0,00001			
					0,71913	0,00001			
B	45	543	>50	M	0,71343	0,00001			
B	46	544	35-50	F	0,72015	0,00001		NO	
B	47	545	30-40	M	0,7126	0,00001			
B	49	547	30-35	M	0,7283	0,00001		NO	Non-local Sr-isotope values and non-local carbon isotope values. M2 Sr-ratios significantly more radiogenic than M1-ratios, but unable to establish whether the migration took place after the age 7 or 16.
					0,74143	0,00001			

B	50	548	35-50	M	0,70639	0,00001	Yes. The central maxillary incisors were chipped distally, and the lateral maxillary incisors were chipped mesially.	NO	Non-local Sr-isotope values and non-local carbon isotope values. Originated from a geological area with less radiogenetic strontium.
					0,70603	0,00001			
					0,70907	0,00001			
B	51	549	35-40	M	0,71017	0,00001			
B?	52	550	25-35	F	0,70921	0,00001	Yes. The chipping of the maxillary central and lateral incisors to points.	no	Local Sr ratios, deviating 13C-dentine values.
					0,70938	0,00001			
					0,71545	0,00001			
B	54	552	30-35	M	0,71027	0,00001		no	Local Sr ratios, deviating 13C-dentine values.
					0,71044	0,00001			
					0,71221	0,00001			
B	56	554	35	M	0,71387	0,00001			
B	58	556	35-40	F	0,71233	0,00001		no	Strontium ratios compatible with the Cape, but strong reliance on C4 food resources uncharacteristics of the Cape diet.
					0,71182	0,00001			
					0,71378	0,00001			
B	60	558	30	F	0,73605	0,00001	Yes. The central and lateral maxillary incisors are sharpened to points, by chipping the incisors both mesially and distally.	NO	Non-local Sr-isotope values and non-local carbon isotope values. Residential stability until the age of at least 16.
					0,73566	0,00001			
					0,73608	0,00001			
B	61	559	35	M	0,71183	0,00001			
C	32	526	50-60	M	0,71225	0,00001			
					0,71093	0,00001			
					0,70923	0,00001			
C	57	555	20-30	F	0,71011	0,00001		no	Local Sr ratios, deviating 13C-dentine values.

					0,71023	0,00001			
					0,70947	0,00001			
C	59	557	40	M	0,706	0,00001		NO	Plotted outside the Cape strontium range throughout life. Sr-ratios similar to M1 and M2 of individual 50, but with different childhood dietary habits, meaning different geographical origins. Tentative assignment to a region characterised by a young volcanic geology, such as the Indonesian archipelago, the Deccan traps region of India or volcanic islands in the Indian Ocean.
					0,70618	0,00001			
					0,70602	0,00001			
C	65	563	22-25	F	0,70921	0,00001			
					0,70921	0,00001			
					0,7091	0,00001			
GREEN POINT (MBEKI ET AL., 2017)									
BURIAL TYPE	ID	UCT	AGE	SEX	$^{87}Sr/^{83}Sr$	± 2 S.E.	DENTAL MODIFICATION	LOCAL	NOTES
	3		40-50	F	0,71196	0,0001			
					0,71194	0,0001			
					0,71177	0,0001			
	4		>50	F	0,7175	0,0001		NO	M1 compatible with local signal, M2 not. Although she might have been born in the Cape region, she experienced a (forced) migration after the age of three, and subsequently after the age of eight to a region isotopically consistent with the Cape/the region she spent her first years of life in.
					0,7194	0,0001			
					0,71711	0,0001			
	5		35-45	M	0,71075	0,0001		no	Determined non-local through C-13 and N-15 isotope analysis.
					0,70975	0,0001			
					0,70962	0,0001			
	7		18-35	F	0,71166	0,0001			
					0,71164	0,0001			
					0,71188	0,0001			
	8		45-55	F	0,71167	0,0001			

					0,71101	0,0001			
					0,71156	0,0001			
	9		?	?	0,71589	0,0001			
					0,71526	0,0001			
	10		18-35	M	0,73542	0,0001		NO	Origins may be traced to Mozambique. Experienced residential stability at least until the age of circa 18.
					0,73567	0,0001			
	20		?	F	0,71871	0,0001		NO	Multiple migration events in early life.
					0,72006	0,0001			
					0,71853	0,0001			
	21		>50	F	0,71448	0,0001			
	25		25-30	M	0,71913	0,0001		NO	
					0,71536	0,0001			
	26		>50	M	0,72053	0,0001		NO	
					0,71953	0,0001			
	28		30-40	M	0,71216	0,0001			
					0,7118	0,0001			
	29		40-60	M	0,71206	0,0001			
					0,71151	0,0001			
					0,7115	0,0001			
	31		20-30	M	0,71018	0,0001		no	Determined non-local through C-13 and N-15 isotope analysis.
					0,71091	0,0001			
					0,71114	0,0001			
	32		50-60	M	0,71361	0,0001		no	Determined non-local through C-13 and N-15 isotope analysis.
					0,7129	0,0001			
					0,71725	0,0001			
	33+		25-40	M	0,72883	0,0001	Yes. Aesthetic modifications to the maxillary medial incisors (filed to a point)	NO	Multiple migration events in early life. His M1 and M2 Sr-ratios and the type of dental modifications are consistent with Mozambican origins. This also means that this individual most likely moved to the Cape at a very young age.
					0,72972	0,0001			
					0,72057	0,0001			

	34		18-35	M	0,71033	0,0001			
					0,71047	0,0001			
					0,71078	0,0001			
	39		18	M	0,71998	0,0001		NO	Multiple migration events in early life.
					0,72052	0,0001			
					0,72234	0,0001			
	43B		40-60	M	0,71278	0,0001			
					0,71314	0,0001			
					0,71248	0,0001			
	45		40-55	F	0,71926	0,0001		NO	
					0,72004	0,0001			
					0,71905	0,0001			
	46		25-35	M	0,71121	0,0001			
					0,71149	0,0001			
					0,71131	0,0001			
	48+		35-45	M	0,71183	0,0001	Yes. Teeth filed into a diamond shape.	no	Exhibits local strontium, carbon and nitrogen isotope signals, but does display culturally modified teeth associated with foreign origins.
					0,71162	0,0001			
					0,71169	0,0001			
	49		35-50	M	0,71116	0,0001			
					0,71145	0,0001			
					0,71173	0,0001			
	51		30-40	M	0,72249	0,0001		NO	Multiple migration events in early life. Migrated to a more radiogenic region after the age of 3, before a subsequent migration to a location with a Sr isotope signature indistinguisable to the Cape after the age of circa 7.
					0,72847	0,0001			
					0,71858	0,0001			
	56		25-40	M	0,71162	0,0001			
					0,71188	0,0001			
					0,71143	0,0001			
	58		30-40	M	0,71039	0,0001			

	61		40-60	F	0,71051	0,0001			
					0,71074	0,0001			
FORT KNOKKE (COX & SEALY, 1997)									
BURIAL TYPE	ID	UCT	AGE	SEX	$^{87}Sr/^{83}Sr$	± 2 S.E.	DENTAL MODIFICATION	LOCAL	NOTES
	4773	5401	max. 16	?	0,7191	Left mandible	R11, R12, L11. Filed to points.		
	4774	5402	approx. 12	?	0,71328	Maxillary left canine	Notch between central incisors and pointed lateral incisors		
		5403			0,71356	Left femur			
		5404			0,71743	Rib			
		5616				Rib (repeat)			C-13 and N-15 isotope analysis
		5617				Femur-trabecular			C-13 and N-15 isotope analysis
		5618				Palatine			C-13 and N-15 isotope analysis
		5619				Left occipital			C-13 and N-15 isotope analysis
	4776C	5405	Young Adult	?		Root of max. first molar	L11 square chip filed		
		5406				Left parietal			
		5620				Palatine			
	4872	5407	Adult	M	0,71376	Parietal	Upper and lower incisors filed to points		
		5621				Root of max. 3rd molar			
		5622				Sinus			
	4765	5419	15-21	?	0,71148	Canine			
		5420				Parietal			
	4788	5421	10-11 yr	?	0,70957	Premolar			
		5422				Occipital			
		5623				Palatine			
	4768	5626	13-18	?		Femur-shaft			
		5627				Femur-end			
	4764	5628	Young Adult	?		Sinus	Chipped L11		
		5629				Frontal			

SIMON'S TOWN (OLSZEWSKI ET AL., 2023)									
BURIAL TYPE	ID	UCT	AGE	SEX	$^{87}Sr/^{83}Sr$	± 2 S.E.	DENTAL MODIFICATION	LOCAL	NOTES
	6		Adult	?	0,709279	0,000008			
	9		Adult	M	0,710685	0,000006			
	10A		Adult	M	0,709348	0,00001			
	15		Adult	?	0,711473	0,000008			
	18B		Adult	M	0,712245	0,000007			
	18D		Adult	M	0,709654	0,000007			
	20		Adult	?	0,709252	0,000007			
	22C		Adult	?	0,712724	0,00001			
	27		Adult	M	0,710015	0,000008			Buried with leather, wooden coffin.
	33		Adult	M	0,710826	0,000008			
	36A		Adult	M	0,711804	0,000007			
	42B		Adult	?	0,707589	0,00001		no	Strontium isotope ratio representative of regions with younger geology or with increased influences from marine derived strontium, not characteristic of the Cape.
	43A		Adult	M	0,708839	0,00001		no	Strontium isotope ratio representative of regions with younger geology or with increased influences from marine derived strontium, not characteristic of the Cape.
	43B		Adult	M	0,711499	0,000007			
	43C		Adult	M	0,710061	0,000006			
	43D		Adult	M	0,707409	0,000006		no	Strontium isotope ratio representative of regions with younger geology or with increased influences from marine derived strontium, not characteristic of the Cape.
	48		Adult	M	0,710458	0,000009		no	Determined non-local by O-18 values (came either from region far from the equator/high altitudes/further distance from the sea/region with heavy participation).
	49		Child	M	0,711553	0,000009			
	53		Adult	M	0,709828	0,000007			
	58		Adult	M	0,709519	0,000008			

	59		Adult	M	0,709791	0,000008			Buried with buttons.
	60A		Adult	M	0,710057	0,000009			
	61		Adult	?	0,709846	0,000008			
	65		Adult	M	0,709796	0,000007			
	66		Adult	M	0,715812	0,000008			
	67		Adult	M	0,709221	0,000008			
	69		Adult	M	0,709607	0,000008			
	72		Adult	M	0,710528	0,000009		no	Determined non-local by difference in diet. Buried with buttons and wooden coffin.
	75		Adult	?	0,709393	0,000008			
	95		Adult	?	0,709522	0,000009			
	97A		Adult	?	0,711981	0,000006			Buried with button with anchor motif (possibly from 97B).
	97B		Adult	M	0,709785	0,000019			Buried with bead necklace (36 green/white striped, 5 black).
	98		Adult	?	0,711448	0,000008			
	100		Adult	?	0,7093	0,000006			
	105		Adult	?	0,709102	0,000008		no	Determined non-local by difference in diet.
	107		Adult	M	0,709358	0,000006			Buried with buttons and scissors.
	108		Adult	?	0,709957	0,000008			Buried with bone buttons.
	113		Adult	?	0,709282	0,000013			
	115A		Adult	?	0,710019	0,000008			
	118		Adult	?	0,709363	0,000008			
	121		Adult	?	0,711503	0,000009			Buried with 11 buttons.
	122A		Adolescent	?	0,709254	0,000008		Buried with button hook.	
	138		Adult	M	0,712174	0,000008		no	Determined non-local by difference in diet.

Table B.1: Overview of the database, covering the four main studies of this thesis, namely Cox and Sealy (1997), Kootker et al. (2016), Mbeki et al. (2017), and Olszewski et al. (2023). 'NO' under 'Local' indicates non-local based on strontium isotope values, while individuals with a local strontium isotope value but non-local carbon or nitrogen values are indicated with 'no'.

APPENDIX D: ADDITIONAL INFORMATION FROM MANYAAPELO (2007)

The sites of Cobern Street and V&A Waterfront Marina in Green Point have been studied by Kootker et al. (2016) and Mbeki et al. (2017) respectively. During the writing of the Discussion chapter, however, another study came to light. In this master's thesis by Manyaapelo (2007), odontological analysis has been carried out on individuals from three cemeteries, including those of Cobern Street and Green Point. The results from this analysis on some points contradict the findings by Kootker et al. (2016) and Mbeki et al. (2017), and on other fronts complement these studies. This appendix exists of a short overview of the additional information provided by Manyaapelo (2007). All information below, including the figures and their captions, has been taken from Manyaapelo (2007). Relevant data from the studies of Kootker et al. (2016) and Mbeki et al. (2017) have been added where needed.

N.B.
Local: L
Non-local: NL

Sites: Cobern Street and Green Point

Cobern Street
Mesial and distal filing:
Individual 20A (510) **(NL)**
Individual 60 (558) **(NL)**
Individual 50 (548) **(NL)**
(Individuals above included in Kootker et al. (2016).)
Individual 49 (547): file to a point (11, 12, 11, 12)

- **NL, 30-35M, not included in Kootker et al. (2016).**

Buccal filing:
Individual 65 (563): ULC; UL12; UL11; UR11; UR12; URC; LR12; LL11; LL12; C

- **L, 22-25F**

Individual 15 (504): UL12; UL11; UR11; UR12

- **L, 25M**

Individual (562), absent? Male, 37.5 y/o: ULC; UL12; UL11; UR11; UR12; URC

- **ABSENT**

Individual 12 (500): ULC; UL12; UL11; UR11; UR12; URC

- **L, 35-40M**

Individual 36 (544): UL12; UL11; UR11; UR12

- **NL, 35-50F**

Individual 32 (526): ULC; UL12; UL11; UR11; UR12; URC

- **BURIAL C, L, 50-60M**

Figure D.1. Inverted V-shape in the two middle maxillary incisors present in individual UCT 510, modified through mesial filing (Manyaapelo, 2007, p. 104, Figure 25).

Figure D.2. Two inverted V-shapes present in the four maxillary incisors of individual UCT 548, modified through mesial and distal filing (Manyaapelo, 2007, p. 104, Figure 26).

Figure D.3: Filed points in the four maxillary incisors present in individual UCT 558 (Manyaapelo, 2007, p. 105, Figure 28).

Figure D.4: Buccal filing present in individual UCT 562 (not included in Kootker et al. (2016)). The dental modification is present on the maxillary anterior teeth (Manyaapelo, 2007, p. 106, Figure 30).

Green Point

Mesial and distal filing:

MR 33: L11 and R11 filed to a point, **NL**

MR 48: Diamond shaped file: also unintentional modification, NL

- Both male

Buccal filing:

None

Unintentional modification (pipe wear)

MR 25: **NL, 25-30M**

MR 33: NL, 25-40M

MR 38: not included. Female, 42.5 y/o.

MR 61: **L, 40-60F**

MR 43 (B): **L, 40-60M**

MR 26: **NL, >50M**

Figure D.5: Signs of pipe smoking can be observed in individual MR 33 by the rounded shape of the outer incisor and canine (same individual as in Fig. D.6) (Manyaapelo, 2007, p. 106, Figure 29).

Figure D.6: Intentional dental modification present in individual MR 33: the maxillary incisors have been filed to a point (same individual as in Fig. D.5) (Manyaapelo, 2007, p. 105, Figure 27).