Death on the Imperial Frontier:
an Osteobiography of Roman Burial from Oğlanqala, Azerbaijan

THESIS

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Abstract

In 2011, excavations at the Iron Age archaeological site of Oğlanqala in Naxçıvan, Azerbaijan uncovered unexpected human remains dating to the early Roman period (2 B.C. - c. 14 A.D.). At Oğlanqala, numerous post-Iron Age interments from the early 20th century have been recovered. However, the early Roman burial represents the only Roman interment discovered at the site as well as in the South Caucasus. Burial WWE.1 was situated at the base of the Oğlanqala Iron Age citadel and consisted of a single individual (Individual 21) placed in a seated position inside a large pithos, or urn. While urn burial is a common practice in the Caucasus, the individual was accompanied by a large quantity of fine Roman material objects rarely found in this region, including Augustan denarii, glass unguentaria, gold inlaid intaglio rings on the fingers, a ceramic round bottom vessel, and a large glass bead. This paper presents a detailed analysis of the bioarchaeological identity of Individual 21, focusing on age, stress, status, and mobility and how these factors relate to the unusual burial style. Osteological and oxygen ($^{18}$O/$^{16}$O) stable isotope analysis, archaeological context of the burial, and the historical record provide the basis to identify the individual. The result is a detailed osteobiography of the individual that reflects aspects of their life history, and how death in foreign territories alters traditional mortuary conventions. Furthermore, the individual’s relationship with the broader historical context of Rome and the Caucasus reflects the
lesser-known aspects of imperial interaction and life in the eastern frontier.
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# Table of Contents

Abstract ................................................................................................................................. ii

Acknowledgments ................................................................................................................ iv

Vita ........................................................................................................................................ v

List of Figures ....................................................................................................................... viii

Chapter 1: Introduction ........................................................................................................ 1

Chapter 2: Archaeological Context ...................................................................................... 5

  Ceramics ............................................................................................................................... 6

  Coins ................................................................................................................................ 7

  Finger Rings ....................................................................................................................... 9

  Glassware .......................................................................................................................... 10

Chapter 3: Historical Context ............................................................................................... 53

Chapter 4: Materials and Methods ..................................................................................... 16

  Recovery and analysis of human remains at Oğlanqala .................................................. 16

  Osteobiographical analysis and assessment of identity .................................................. 17

  Oxygen isotope ($^{18}$O/$^{16}$O) analysis ........................................................................ 18
<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sample selection</td>
<td>19</td>
</tr>
<tr>
<td>Sample preparation</td>
<td>20</td>
</tr>
<tr>
<td>Chapter 5: Results</td>
<td>22</td>
</tr>
<tr>
<td>Age Analysis</td>
<td>22</td>
</tr>
<tr>
<td>Stress, Pathology, and Trauma Analysis</td>
<td>23</td>
</tr>
<tr>
<td>Oxygen isotope ($^{18}$O/$^{16}$O) analysis</td>
<td>23</td>
</tr>
<tr>
<td>Chapter 6: Discussion</td>
<td>28</td>
</tr>
<tr>
<td>Chapter 7: Conclusion and Future Directions</td>
<td>34</td>
</tr>
<tr>
<td>References</td>
<td>37</td>
</tr>
</tbody>
</table>
List of Figures

Figure 1. Map of the Caucasus and Oğlanqala ................................................................. 5
Figure 2. WWE.1 Pithos and accompanying round-bottomed vessel against the western fortification wall of the Oğlanqala citadel ........................................................................ 7
Figure 3. Obverse and reverse view of Augustan silver denarii ......................................... 8
Figure 4. Photograph and illustration of the Ring 1 glasspaste intaglio depicting Isis and Serapis in profile ........................................................................................................ 9
Figure 5. Ring 2 carnelian intaglio depicting bull in profile ................................................ 10
Figure 6. Blown-glass unganteria ...................................................................................... 11
Figure 7. Glass, Phoenician-style horned bead .................................................................. 12
Figure 8. Severe wear on right mandibular 2nd molar compared to no wear on left mandibular 2nd molar ..................................................................................................... 24
Figure 9. Comparison of δ18O values Error ± 2) between Individual 21 and local rodents (N=2) .................................................................................................................... 26
Chapter 1: Introduction

Understanding empire in historical ancient societies, such as the Roman Empire, is a topic easily examined and analyzed through the study of epigraphic texts: records of ancient life and events written by well-known ancient historians and writers. However, the histories of imperial interaction in regions at the edge of the Roman Empire, far from these writers, lack elaboration or accuracy afforded to regions closer to the center of Rome and are far more difficult to study without bias (Dommelen, 2011; Woolf, 1997). In the Caucasus, which never fully incorporated into the Roman Empire and remained affiliated with the Parthian Empire to the east, much of the interpretations of imperial interaction have largely relied on vague histories from Roman epigraphic texts and limited archaeological remains (Kennedy, 1996). Despite limitations of these texts, scholars have developed a detailed chronology of battles, campaigns, and diplomatic affairs involving Rome and the Caucasus from the early Republic onward (Khatchadourian, 2008; Ristvet, 2012). However, the nature of Roman campaigning and interaction in the region remains less understood.

To better understand the nuances of imperial interaction in frontier regions where epigraphic texts from a single perspective may be insufficient, many lines of evidence must be integrated to produce a detailed portrait of empire as lived experience. This paper presents the osteobiography of a single individual excavated at the archaeological site of
Oğlanqala in Naxçivan, Azerbaijan, whose burial represents aspects of both Roman and Parthian culture during early 1st century A.D. Osteobiography involves the fine-grained and multi-dimensional analysis of osteological and archaeological evidence to interpret life history on an individual scale. Osteobiography synthesizes empirical data (on age, sex, ancestry, health, occupation, mobility, and diet) from biological markers on the skeleton and its mortuary context to structure the narrative of an individual’s life and death (Mayes and Barber, 2008; Stodder and Palkovich, 2012).

In recent studies, the osteobiographical approach has become an increasingly important way of understanding how broader issues of health, status, and behavior affect archaeological populations on an individual scale (Boutin, 2008; Knüsel, et al., 2010; Mayes and Barber, 2008). Mayes and Barber (2008) highlight how the observable effect of physical labor and health disparities on the skeletons of individuals compared the rest of the population reflect the nuances of status beyond wealth associated with burial goods. Also, Knüsel et al. (2010) show that a multi-analysis osteobiographical approach, using osteological and isotope analysis can reveal aspects of health, diet, mobility, and status that would otherwise be overlooked in a population approach. Such a detailed analysis will be a significant contribution to the study of empire in the periphery where fine-grained interactions have received little consideration outside of epigraphic studies.

This study assesses Roman imperial interaction by drawing upon the unique case of Burial WWE.1-Individual 21, found outside the Iron Age fortification of the Oğlanqala hill, located in the Sharur Valley in the Naxçivan Province of Azerbaijan. The burial dates to 2 B.C. - c. 14 A.D., corresponding the early Roman Period, a time during which
the Caucasus were of near-continuous interest for conquest by Rome and its enemy, Parthia. Individual 21 was buried in a large *pithos*, or urn, outside of the hilled fortification complex and buried with a wide variety of fine Roman artifacts such as gold-inlaid rings, coins, glassware, and ceramics. Burial WVE.1- Individual 21 represents the only burial from this time period at the site and the uniformly Roman assemblage of burial goods are a unique discovery in the documented archaeology of the Caucasus. Individual 21 is thus an ideal foundational archaeological case to elaborate on epigraphic text-based histories and to begin considering the nature of imperial interaction in the Caucasus in regards to who travelled to the Caucasus from Rome and how Romans interacted with local landscape and traditions. These questions will be addressed in two-fold hypotheses. First, Individual 21 is hypothesized to represent a non-local Roman, possibly affiliated with the military campaign of Gaius Caesar who occupied the Caucasus during the early 1st century A.D. Second, Individual 21’s burial at the Öğlanqala citadel reflects that, contrary to epigraphic records suggesting Roman campaign strategies followed conventions of low-land camp building established in the Western frontier, the Roman military, mimicked local occupation practices through the reuse of mountainous Iron Age citadels in the region.

The osteobiography of Individual 21 is developed by first establishing biological identity through osteological analysis for age, stress and diet as well as oxygen ($^{18}$O/$^{16}$O) isotope analysis for mobility. This is further elaborated by archaeological context of the burial, and epigraphic texts, which establish the relationship of Individual 21 with the social and historical context of the period. The result is a detailed osteobiography of the
individual that reflects aspect of their life history, broaden the perspective on this complex and significant period in Roman imperial interaction, and contributes to an expanding post-colonial tradition of drawing upon archaeology to reshape the perceived reality of empire.
Chapter 2: Archaeological Context

Oğlanqala is the focus of the Naxçivan Archaeological Project, the first American-Azerbaijani cooperative program of archaeological survey and excavation in Azerbaijan. Oğlanqala is located on a large hill adjacent to the Arpaçay River in the Sharur plain of Naxçivan province, an exclave bordered by Turkey to the west, Armenia to the east and Iran to the south (Figure 1). Encompassing an area of 12 hectares, initial excavations at Oğlanqala by an Azerbaijani team began in 1988 and were later continued with the Naxçivan Archaeological Project from 2008 through 2011 (Ristvet et al., 2012).

![Figure 1. Map of the Caucasus and Oğlanqala](image)

Oğlanqala has four phases of occupation. Period IV (c. 800-600 B.C.) consists primarily of a large Urartian-period fortress. Period III (c. 400-200 B.C.) comprises an
Achaemenid or Post-Achaemenid rebuilding of this citadel. Period II (c. 100 B.C.-100CE) consists of several feasting pits at the center of the citadel complex. The pits were filled with charred sheep and goat bone fragments, broken ceramic eating and drinking vessels, and $^{14}$C dated to between the 1st century B.C. and 1st century A.D. However, there is no evidence of permanent local residence beyond a simple single roomed structure at the southeastern edge of the citadel. Period I is a 20th c. occupation primarily associated with WWI activity.

The Roman pithos burial was discovered in 2011, just outside of the outermost western wall of the Oğlanqala Iron Age citadel. Excavations in this area focused on clearing away soil accumulation and exposing the wall face. There were no initial indications that the area had a mortuary function. Rather, much of the area contained mixed ceramic sherds that may have washed down the slopes of the citadel or were thrown outside of the wall as refuse. The 14 artifacts, particularly coins and finger rings, associated with the pithos burial place it firmly in Period II.

Ceramics

The pithos holding the skeleton was found on its side with the opening facing west (Figure 2). It is made of course pink clay painted with a coat of plaster on the exterior. Although the vessel was shattered, the fragments were pieced together to reveal an approximate height of 1m. The rim had a scalloped pattern. An additional rim fragment was found adjacent to the true rim with a similar scalloped pattern, but thicker and composed of a different ware. The body has multiple thin twisted rope-like rings and the bottom is flat. Similar pithoi were found in the Germi region of Iranian Azerbaijan.
(Abdi, 2001; Fard, 1995; Zardarian and Akopian 1995). These pithoi were found in multiples with similar dimensions and with nearly identical exterior decoration (Abdi, 2001).

A smaller ceramic vessel was found directly adjacent to the southern side of the pithos. This vessel was approximately 23 cm wide and 22 cm high and made of light red clay. It has a round bottom, two small handles on the body and a short neck. The rim is broken. The vessel is an accessory to the pithos and possibly held a liquid offering to the deceased. The contents of the vessel were floated and analyzed, but only contained the exoskeletons of insects and the bones of a juvenile rodent.

Coins

Four silver Roman denarii were recovered at the bottom of the pithos (Figure 3). All four were identical, but three appeared to have been intentionally halved prior to
burial. The obverse depicts a laureate Caesar Augustus with the title *pater patriae*. The reverse depicts the standing togate figures of Gaius and Lucius Caesars holding spears and round shields. By Gaius floats the *simpulum*, a vessel that symbolized the office of the *pontifex*. Gaius received the title of pontifex in 6 B.C. By Lucius floats the *lituus*, a spiral staff representative of an *augur*, a title bestowed upon him in 2 B.C. (Cooley, 200; Mousheghian and Depeyrot 1999). The legend is written in abbreviations and reads **C L CAESARES AVGVSTI F COS DESIG PRINC IVVENT** (Gaius and Lucius Caesars, sons of Augustus, consuls designate, leaders of youth).

At the earliest, minting began around 2 B.C. to celebrate the priesthoods bestowed upon both Gaius and Lucius who received their titles in 6 and 2 B.C. respectively. The title of “leader of youths” was also given to them both in 5 B.C. (Cooley, 2009; Romer, 1979; Davies and Swain, 2010). The dates that minting ceased are not agreed upon and range from A.D. 2 and 14, reflecting the years Gaius and Augustus died, respectively.

![Figure 3. Obverse (left) and reverse (right) view of four Augustan silver *denarii* found with Individual 21](image)
Mousheghian and Depeyrot (1999) suggest that Gaius may have ordered the use of the Artaxata mint to produce coins to pay his soldiers while on campaign (Mousheghian and Depeyrot, 1999). Evidence of Roman adaptation of the mint has not been found, but the high volume of the *denarii* in the region as well as the corresponding campaign of Gaius in the region support the hypothesis.

Finger Rings

Ring 1 is bronze band set with a circular glass paste intaglio. The profiles of Isis and Serapis are carved into the glass paste and inlaid with gold (Figure 4). Serapis is in the foreground and is recognizable by the *modius* hat on his head, his long beard and long, wavy locks pulled back (Alvar, 2008). Barely recognizable in the background is the profile of Isis who is identifiable by her softer feminine features and the partial remains of her feather-like headdress. Similar rings have been found across Europe, including:

Figure 4. Image (right) and illustration (left) of the Ring 1 glasspaste intaglio depicting Isis and Serapis in profile
Britain, France, Croatia and Turkey (Önal, 2010; Tomorad, 2005).

Ring 2 is a highly corroded iron band set with a scaraboid carnelian intaglio. The intaglio depicts the profile of a bull inlaid with gold (Figure 5). The bull’s full abdomen and thin, stylized legs combined with the scaraboid shape suggest the gem is Graeco-Persian from the 3rd–4th c. B.C. (Spier, 1992). It is likely the gem was removed from its original setting and reset in a Roman band (pers.com. Dr. Jasper Gaunt). The remaining 5 rings are similar bronze bands set with intaglio carnelian and glass paste stones, but were not preserved well enough for identification.

Figure 5. Ring 2 carnelian intaglio depicting bull in profile

Glassware

Three Roman glass unguentaria, small perfume or oil containing vessels, were discovered near the location of the pelvis at the bottom of the pithos (Figure 6). The location and clustering of the unguentaria suggests that they may have been tied to the
waist, a common way of carrying the vessels. All three *unguentaria* are thinly blown blue glass shaped into a pomegranate-like form with vertical ribs on the body, a long narrow neck and a lipped rim. The largest is 5 cm in width in the body and 7.5 cm in height. The second *unguentarium* has a 3.5cm wide body and is 5cm in height. The third *unguentarium* was severely fractured, but appeared to have been the size of second vessel.

![Blown-glass unguentaria](image)

Figure 6. Blown-glass *unguentaria*

A single glass bead was also found near the *unguentaria* (Figure 7). The bead is approximately 1.5 cm wide. It is mostly dark teal and has 10 raised eyes made with alternating white and dark teal glass. This form closely resembles Phoenician crafted horned beads (Moscati and Palazzo Grassi, 2001). It may have been produced in the Levant or it may have been made elsewhere in imitation of Phoenician style. In the Roman period Mediterranean and Near East, the horned bead was a popular for personal
adornment and a similar example was also found in a Parthian pithos burial at the site of Germi in Iranian Azerbaijan (Abdi, 2001; Fard, 1995).

Figure 7. Glass, Phoenician-style horned bead

The characteristics and history of each artifact contributes to the narrative of the Individual 21’s life. The skeleton itself suffered greatly from destructive taphonomic processes. However, the individual’s well-preserved dentition was appropriate for the age estimation and biogeochemical analysis for mobility and geographical origins. The artifacts, archaeological context and skeletal remains provide further contextual evidence for where Individual 21 originated and how he or she moved through the ancient world.
Chapter 3: Historical Context

Literary sources from Parthia and the Caucasus are rare. Therefore, regional histories are primarily established through the works of notable historians such as Plutarch, Strabo, and Cassius Dio. While these are invaluable sources that provide detailed descriptions of historical events and personalities, they are discourses that do not exist in isolation. Rather, these authors who played important social roles in Roman society often legitimized and underwrote the reality of empire (Boehmer, 1995; Dirlik, 1994; Dommelen, 2011). Consequently, the Roman perspective in the multi-sided issue of imperial interactions must be dealt with critically.

The history of Roman interaction with the Caucasus during the temporal context of the Roman burial at Oğlanqala is characterized by mounting political and military tensions between Rome and Parthia. From Pompey’s act of making Armenia a client kingdom of Rome in 67 B.C. until Antony’s defeat against Parthians in Armenia in 20 B.C., Roman presence was characterized by heavy military confrontations in the Araxes and Euphrates river valleys (Plu. Pom 33. 1; Plu. Ant 27.4). These rivers frequently set the scene for the generals such as Crassus and Antony who conducted campaigns of conquest. Only local Armenian forces and inhabitants were documented as utilizing the mountainous landscape of the Caucasus (Plu. Cras. 31.3; Res Gestae 32.1). It is uncertain whether these landscapes symbolically set the scene in which the conquering the Araxes
and Euphrates equated to conquering Armenia or if they represent true tactical divisions in the Caucasian landscape.

As Augustus claimed the imperial throne in 14 B.C., the Roman public insisted on vigorous retaliation against and capture of Armenia. The reputation of Rome rested in reasserting its power over the frontier regions. In the Res Gestae divi Augusti, Augustus attempts to appeal to the public’s wishes by claiming that capture would have been a simple act (Res Gestae 27.2). However, Augustus was faced with an excessively large military that Rome could no longer fund or maintain. He set efficiency as the new goal for the Roman military and dramatically discharged the majority of forces (Benario, 1999). Diplomacy with foreign rulers also became a valid alternative to military engagement (Cooley, 2009). However, textual histories maintain the same highly militaristic and divisive rhetoric attributable to previous imperial interactions in the Caucasus in which Romans occupy the banks of the symbolically important Araxes and Euphrates rivers against the mountain dwelling Armenians.

Contemporaneous to the Roman pithos burial at Oğlanqala, Augustus’ campaign led by Gaius Caesar is described in the violent, militaristic narrative characteristic of previous Roman engagements in the Caucasus, but with a unique moment of diplomacy in which both Armenians and Romans meet on the riverbank. Gaius engaged in diplomacy when he met with King Phraataces of Parthia on an island situated in the middle of the Euphrates and established a treaty that would ensure peace in the Caucasus (Vell. Pat 2. 101). However, the same rhetoric is reestablished when in 3 A.D., Gaius’ troops violently engaged the hill fort at Artageira and captured it in an effort to suppress
an Armenian revolt against Roman presence (Strabo 24.1). This apparent contradiction may reflect attempts at coming to terms with less palpable realities of imperialism.

In each situation, the juxtaposition of Romans on the plain and Armenians in the mountains generally persists. The ancient authors remain unclear whether these were true archetypes or merely imagery that sets a vivid scene for an important historical event. Authors hint that large forts atop mountains offered strategic advantage to local Armenian forces (Plu. Pom 33. 1). The question remains as to whether Augustus’ aim at efficiency, lower costs, and avoidance of violence may have also manifested in changing Roman tactical landscapes by mimicking these effective mountain campaigning of Armenians in the Caucasus.

As new archaeological evidence, such as the burial of Individual 21, is discovered, it will be important to integrate multiples lines of archaeological evidence to understand how individuals and their life histories fit with the established epigraphic histories of Roman presence in the Caucasus. These additional sources of evidence offer new, local perspective of Roman campaigns that may not have been readily apparent to the ancient authors or were lost in history.
Chapter 4: Materials and Methods

Recovery and analysis of human remains at Oğlanqala

Preservation of human remains at Oğlanqala is consistently poor across all occupation periods, likely due to high clay composition of the soil. The cyclopean stone walls of the Iron Age fortress were originally covered by layers of mudbrick. The erosion of these layers overtime has incorporated the thick, compact clay of the bricks into the soils in and around the citadel. This soil damages archaeological bone by incorporating into the bone matrix, crystalizing, and thus cracking the bone structure into small (<5mm) fragments.

The taphonomy at the Oğlanqala fortress posed a particular challenge in the study of Individual 21. The poor preservation of the pithos burial, in particular, is the result of its location at the base of the fortification wall, the collapse of which was likely responsible for breaking the pithos, allowing for water and clay to enter and destroy the bone. In order to prevent further damage to the bone through exposure to light and air, skeletal elements were removed through block-lifting and excavation completed in the field laboratory.

While the utmost attention was given for preservation of the skeletal remains, only the elements in good to excellent condition with identifiable features were chosen for analysis. A total of 12 identifiable bones were studied including, the hyoid, a
fragment of the ischium of the right innominate, and 10 phalanges of the right hand (2 distal, 4 intermediate, and 4 proximal). The dentition was in better condition and serve as a significant indicator of the individual’s life history. All the teeth remain with the exception of the four third molars, the upper left first incisor, and the lower left first incisor.

Osteobiographical Analysis and Assessment of Identity

The interpretation of Individual 21’s life history and identity derives from the intersection of osteological, archaeological, and historical lines of evidence. While many aspects of an individual’s life contribute to the development of personal and social identity and while many of these aspects are lost in the archaeological record, this study will draw upon as many resources as are available to reconstruct features of Individual 21’s life and death in an osteobiography.

Osteological analysis of the individual’s skeletal remains forms the basis of reconstructing biological identity, focusing on age, stress, status, and $^{18}$O/$^{16}$O isotopic indicators for mobility, and is then elaborated through archaeological and historical context of the burial, site, and region. Sex could not be determined due to poor preservation of the pelvic and cranial elements.

Age was assessed according to expected patterns of dental eruption described by Hillson (2005) as well as expected stages of epiphyseal fusion in the hand bones described by Baker et al. (2005) and Scheuer and Black (2004). Dental stress and wear was assessed using the macrowear analysis on severity and pattern of surface wear.
according the methods described by Smith (1984), Lovejoy (1985), and Rose and Ungar (1998). Mortuary analysis of the positioning and artifacts associated with the burial was conducted through comparisons with sites across the Caucasus, Mediterranean, and Europe with the assistance of specialist Jennifer Swerida at Johns Hopkins University.

Oxygen Isotope ($^{18}\text{O}/^{16}\text{O}$) Analysis

Complementing osteological and archaeological indicators of identity, oxygen isotope ($^{18}\text{O}/^{16}\text{O}$) analysis was also conducted on the dental enamel of Individual 21 to assess whether the individual was local or not local to the Sharur Valley region and to discuss possible geographic regions of origin.

The oxygen isotopes $^{18}\text{O}$ and $^{16}\text{O}$ occur naturally in water and the ratio of their relative abundance varies in different water sources according to affects of different hydrological, geographical, and climatic factors (Keenleyside, 2011). During the development and growth of the human body, the mineral composition of water consumed will be incorporated and reflected in the mineral composition of tissues. As oxygen isotopes are a component of water, they are then absorbed into the bodily tissues through the consumption of food and drinking water as well through inhalation of water molecules in the air (Pollard and Pellegrini, 2011). Of interest to this study is that the isotopic ratios of these sources of water are then incorporated into the hydroxyapatite, or mineral component, of the bones and teeth during formation. Therefore, $^{18}\text{O}/^{16}\text{O}$ isotopic analysis of archaeological human bones and teeth will reflect the oxygen isotope values of water consumed in the geographical location where skeletal and dental development
occurred. These values can then be compared to those of the area of burial to determine local or non-local status (Budd, 2004; Koch, 2007; Hedges et al., 2006). Inter-regional comparison of oxygen isotope ratios may also reveal possible non-local areas of geographical origin (Knudson, 2009; Buzon, 2010). This principle makes oxygen isotope analysis a valuable proxy for human mobility and migration and has been revealed detailed patterns of mobility in archaeological populations around the world (see Budd, 2004; Knudson, 2009; Dupras and Schwarcz 2001).

Sample Selection

Samples for isotope analysis of Individual 21 were collected from dental enamel using the left and right permanent upper first molars (M1). The tightly knit crystalline structure of dental enamel of teeth is less prone to diagenesis than bone. Furthermore, dental enamel formed during childhood, is not replaced, and does not take in minerals during the lifetime. Each tooth develops at a different age, ranging from 3–4 months old for incisors to 10 years old for third molars (Hillson, 2005; Keenleyside, 2011). The M1 begins formation around birth and the crown is complete around 3 years of age (Hillson, 2005). Consequently, oxygen isotope ratios obtained from dental enamel of an M1 will reflect the ratios of water consumed at a geographical location from birth to 3 years of age. Samples were taken from both the left and right M1 to ensure results were not affected by diagenesis.

Local bioavailability of $^{18}\text{O}/^{16}\text{O}$ was established through archaeological faunal comparison. Archaeological rats were chosen as the best candidates to represent local
values of the Sharur Valley. Rats, like many rodent species, have a small range of mobility and generally do not venture further than 2 miles from their burrow. This behavior makes them good representatives of their local inhabitation site’s oxygen isotope values. Also, rats living in human settlements, such as the Oğlanqala citadel, tend to eat similar foods and drink from similar water sources as humans (Turner et al., 2012). Isotopic values are thus expected to more closely reflect human values than other faunal comparisons in the region such as sheep, goats, and cattle. Dental enamel from the molars of two rats (*Rattus rattus*) were collected in the Oğlanqala citadel from the same archaeological horizon as Individual 21.

**Sample preparation**

Sample collection and preparation for oxygen isotope analysis was based on the methodology established by Knudson and Price (2007) and Turner et al. (2012). Human and rat teeth were treated identically during sample preparation. The human and rat teeth were first cleaned and lightly abraded with a Dremel tool to remove the outermost diagenically-prone layers that could possibly contaminate the enamel sample. Then, approximately 10 mg of enamel was removed from the lingual cusps using a diamond-tipped Dremel tool. The enamel was then soaked in a 2% sodium hypochlorite (bleach) solution for approximately 24 hours. Samples were then rinsed with distilled water and placed in a centrifuge to eliminate the sodium hypochlorite. This process was repeated multiple times until the samples were visibly clean. Then, the samples were set in a 0.1 M acetic acid bath (CH$_3$COOH) for 8 hours. The samples were then rinsed with distilled
water and placed in a centrifuge. This process was repeated multiple times to remove all residual acetic acid. The samples were then placed in a fume hood to dry for 3 days and also placed in a drying oven at 30°C overnight to further ensure all moisture had been removed. Once the preparation of the samples was complete, they were sent to Dr. George Kamenov at Light Stable Isotope Mass Spectrometry Lab in the Department of Geological Sciences at the University of Florida to be analyzed in an Element 2 (Thermo-Finnigan) multiresolution Inductively Coupled Plasma Mass Spectrometer (ICP-MS). Precision of results is estimated at 0.1%. The ICP-MS analytical technique heats processed enamel samples to convert atoms to ions, which are separated magnetically and detected/analyzed by the mass spectrometer.
Chapter 5: Results

Despite the disintegration of much of Individual 21’s skeleton, the dense quality of the eroded mudbrick soil that entered the pithos also held together the small fractured pieces of bone in their original burial position. The result was a thin layer of bone matrix that preserved the visible outline of Individual 21’s skeleton as it was situated in the pithos. This fortunate taphonomic phenomenon revealed that the individual was seated at the base of the pithos. The skeleton was in a crouched position in which the lower limbs were highly flexed and pressed tightly against the abdomen. The head, facing downward, rested atop the lower limbs. The arms were wrapped tightly around the head and grasped the lower limbs.

Age Analysis

Analysis of the epiphyseal fusion of the 10 phalanges of the right hand (2 distal, 4 intermediate, and 4 proximal) served as the first evidence to estimate Individual 21’s age. The epiphyses of all the phalanges were fully fused, showing no sign of the juvenile growth plate. Based on phalangeal epiphyseal fusion standards described in Baker et al. (2005) and Scheuer and Black (2004), distal phalanges complete fusion between 13 and 14 years in females and 15-16 years in males. Middle and distal phalanges complete fusion between 14 and 15 years in females and 15 and 16 years in males (Baker et al., 2005).
2005; Scheuer and Black, 2004). Based on these predictions, Individual 21 is expected to be older than 14-16 years of age.

Individual 21’s dentition served as the second evidence to estimate age. The individual had not completed dental development at the time of death. All permanent teeth had fully erupted with exception of the third molars. Based on predicted ages of eruption for permanent teeth described in Hillson (2005), third molar is the final tooth to erupt between ages 17 and 21. The second molar erupts prior to the third molar between ages 12 and 15 (Hillson, 2005). Since the second molars had fully erupted and the third molars had not erupted at all, Individual 21 is expected to be between 15 and 21 years of age. This value complements age of ≥14-16 years predicted by phalangeal epiphyseal fusion.

Age analysis of the dentition was complicated by high to severe dental wear. While severe wear may be related with increased age, the pattern of wear (discussed in next section) is more closely associated with behavior rather than age.

**Stress, Pathology, and Trauma Analysis**

Individual 21’s dentition shows evidence of high-severe wear. However, unlike the even distribution of wear across the dental arcade that would indicate wear associated with age, Individual 21 had attrition exclusively on the right upper and lower teeth—including incisors, canines, premolars, and molars (Xhonga, 1977). Severity of wear was determined according the standards described in Smith (1984) in which teeth may be characterized on an 8 stage scale (1-8) with 1 representing least wear to 8 representing
most severe wear. Based on this scale, molars are characterized as dentin exposed across the occlusal surface with the enamel rim remaining intact, ranking in a severe range between 6 and 7. Premolars are characterized as nearly full dentin exposed across the occlusal surface with enamel rim intact, ranking in the high range between 5 and 6. Incisors and canines are characterized by large dentin exposure with enamel rim intact, ranking in the moderate range between 4 and 5. The remaining teeth on the left side of the dental arcade are characterized by little to no thinning of the enamel, ranking in the minimal to no wear range between 1 and 2 across all tooth types (Smith, 1984). Figure 8 demonstrates the degree of difference between wear on the left and right sides of the dentition.

Figure 8. Severe wear on right mandibular 2nd molar (top) compared to no wear on left mandibular 2nd molar (bottom)
Due to the pattern of dental wear being uncharacteristic of age-related attrition, Individual 21’s teeth were likely due to other causes such as diet or stress-related grinding. Diets consisting of hard foods, or foods that contain high grit content, masticated on exclusively on one side of the mouth during the lifetime may result in patterns of wear similar to Individual 21. An equally likely candidate is bruxism, a condition involving chronic clenching and grinding of the teeth in response to emotional stressors. Bruxism often results in severe attrition of the occlusal surface of teeth on one or both side of the dental arcade (Xhonga, 1977).

The phalanges were also assessed for evidence of pathology and age and occupation-related degeneration. However, they did not show evidence of either condition.

The hyoid was recovered in good condition, but missing the distal ends of the greater horns. Evidence of trauma on the hyoid may reflect violence, such as strangulation (Larsen, 1999). However, Individual 21 showed no signs of trauma to the hyoid.

Oxygen ($^{18}$O/$^{16}$O) Stable Isotope Analysis

Individual 21’s unusual mortuary context involving local, Parthian burial practice ornamented with abundant and lavish Roman burial artifacts raised many questions regarding whether the individual was a local or a foreigner, where he or she originated, and how his or her burial style reflected identity. Oxygen isotope analysis was performed on Individual 21 to investigate these questions.
Oxygen isotope results of the human dental enamel as well as the local rodent dental enamel are presented in (Figure 9). Results for the rodent molar enamel yielded $-3.72\%$ and $-3.26\%$ VPDB. These results differ by $0.46\%$. The difference likely reflects individual difference, and is not large enough to suggest that either rat travelled a large distance beyond the area around Oğlanqala (Kirsanow and Tuross, 2011). Rather, these values are close enough to suggest that they are representative of the oxygen isotope levels associated water consumed from the Arpaçay River basin. Locals to the Oğlanqala region are expected to be within this range.

Figure 9. Comparison of $\delta^{18}O$ values (Standard Error ± 2) between Individual 21 and local rodents (N=2).
Local Individual 21’s right and left upper molars yielded the δ¹⁸O values of -6.12‰ and -6.03‰ VPDB, respectively. These values differ by the small margin of 0.07‰. The difference, though slight, may reflect differences in sample preparation and analysis and/or variation in the formation and development of the left and right first molars.
The skeletal remains of Individual 21 reveal an adolescent with high to severe dental attrition, uncharacteristic of wear for his/her age. Rather than being related to wear due to age, the patterns of wear resemble those made by consumption of hard, or gritty food or those made by bruxism, a condition of grinding or clenching the teeth. Based on analyses of dental wear in Belcastro et al. (2007) and Bonfiglioi et al. (2003), populations in eastern Roman populations during the same time period experienced relatively little wear. The lack of dental wear is attributable an abundance of soft foods in the diet such as wheat, grain-based foods, and cooked vegetables (Belacastro et al., 2007, Bonfiglioi et al., 2003). However, one subset of the populations had higher dental wear. Roman soldiers experience higher rates of attrition attributable to a diet of hard tack, dry bread that preserved bread on long campaigns (Prowse, 2011; Watson, 1985). Roman soldiers were also expected to have experienced bruxism, a response to psychological stress in the field. In modern populations, bruxism is also prevalent among populations in high stress occupation such as police and military personnel (Xhonga, 1977). It is possible the extensive wear on the individual’s right dentition reflects military-based occupation.

The oxygen isotope analysis of Individual 21’s teeth also reveals aspects of his or her mobility that elaborate on the characteristically Roman material context of the burial. Results of $^{18}$O/$^{16}$O values from mass spectrometry of Individual 21 shows much more
depleted $\delta^{18}O$ than those reflected in the local environment from the local archaeological rodent comparison. When $\delta^{18}O$ values from Individual 21 were averaged and compared to the mean of local rodent values, there is a -2.58‰ difference. This suggests that Individual 21 did not originate from this region. Specifically, the ratios suggest that the individual did not live in the area when his or her first molars were developing around the age of 3 years. However, these values are taken with caution. The standard error for $\delta^{18}O$ values was intentionally set at the large range of $\pm 2$‰ in order to accommodate the small sample size used in this study. Based on this standard error, the upper end of rodent samples and the lower end of Individual 21’s samples overlap. While, it is important to consider the likelihood that the individual may have been local, consideration of archaeological evidence further supports the non-local origins. Furthermore, because these standard error values are significantly larger than those used by larger studies, these values support the hypothesis that Individual 21 is not local.

Individual 21’s $\delta^{18}O$ values may also be used to interpret possible regions of origin. Much of the area surrounding the Oğlanqala region in the Caucasus and Northern Mesopotamia have not been analyzed archaeologically for their local oxygen isotopic composition. However, based on the principle that $\delta^{18}O$ values will become more depleted with decreasing temperature, increasing altitude, and increased distance from the sea, the oxygen isotopic composition of the regions surrounding regions Oğlanqala can be estimated in terms of whether they may be depleted or enriched in comparison. Regions directly to the south and east of Oğlanqala have generally warmer and more arid with lower altitude. These areas are expected to have more enriched or higher $\delta^{18}O$
levels equal to or higher than those at Oğlanqala where there is cooler climate, more rain and higher altitude. In contrast, the individual’s $\delta^{18}O$ values are more negative than those at Oğlanqala. Possible locations should thus have a cooler, wetter climate with possibly higher altitude. Values around -6‰ have been documented in western Anatolia, the northwestern Black Sea, coastal and central Italy, Sicily, Sardinia and central France (Bowen and Revenaugh, 2003; Eckardt et al., 2009; Keenleyside et al., 2011; Longinelli et al., 2006). Despite the wide range of possible locations of origin for the individual, it is possible to conclude that his or her childhood was likely spent in the northern Mediterranean, within the boundaries of the Roman Empire.

The results of osteological and isotopic analysis can be further contextualized with archaeological and historical evidence. The individual is buried in seemingly Parthian style in a pithos, which is not characteristic of Roman mortuary practice. However, it is also not similar to other examples of Armenian and Parthian pithos burials beyond the urn itself. Pithoi found in Armenia and Iran all face east whereas the pithos at Oğlanqala faces west (Fard, 1995; Khatchadourian, 2008). Moreover, Fard (1995) attributed the material contents of these burials (textiles, jewelry, and ceramics) to the eastern styles of Armenia, Media Atropatene, and Parthia. The Oğlanqala pithos is unique in this respect.

All grave goods, with exception of the Phoenician-style horned glass bead, are characteristic of Roman manufacture. Moreover, the items are highly valuable, possibly speaking to the social status of the individual. First, it is important to acknowledge that there is the possibility that a person of local origins may have been buried with Roman
currency and adornments, however, the osteological, archaeological, and historical context together strongly suggest the opposite. Four identical *denarii* commissioned in Artaxata solely for Gaius’s campaigning purposes narrow the likelihood of affiliation with this campaign. It was also a fairly large sum for burial as 1 *denarius* was a day’s wage for a common soldier (Romer, 1979). Seven signet rings is also a rare sum for common Roman burials. However, Roman soldiers of higher rank would wear multiple rings that showed affiliation with a certain rank or military division (Kunz, 1917). The Isis and Serapis ring, in particular, has strong military affiliations as the cult of Isis and Serapis began expanding during the period of Augustus as cult that was followed and spread primarily by Roman soldiers. Temples housed workshops for sculptors, potters and jewelry makers who would have sold their cult related products, which may have included such rings, to the visitors as gifts to offer to the gods or for personal adornment to display affiliation with the cult (Alvar, 2008). Finally, aryballoi are meant to carry precious liquids such as perfume or oils. Roman would have generally carried one such vessel. However, this individual bore three intricately blown glass aryballoi on his/her hip, a further sign that the individual possessed wealth, or was well-decorated by mourners. The combination of osteological, isotopic, and archaeological approaches to analysis provides a conclusion that the individual is likely Roman.

Within the broader archaeological context of Oğlanqala, the burial is part of Period II stratigraphy, which dates to c. 100 B.C.- 100CE. Material from this phase represents a period of very brief occupation of the citadel, such as a temporary camp, characterized by a number of pits filled with charred sheep and goat bones and broken
ceramics. This period also includes a simply built small house or building within the citadel in direct association with the pits (Ristvet et al., 2012). Excavations of citadels further north in Armenia have found multiple fasting pits and evidence of locals building small settlements within the walls of Iron Age citadels during same period (Khatchadourian, 2008). However, the pits at Oğlanqala do not appear to be associated with permanent local residence. In fact, little else besides the pits and pithos burial has been associated with the 1st century B.C.- A.D. 1st century activity. While difficult to identify with certainty, the large-scale of these refuse pits and opportunistic use of the citadel has been suggested to be more characteristic of possible Roman or Parthian military camps around the time of Gaius Caesar’s Parthian campaign (pers. com. Dr. Hilary Gopnik).

If this is the case, and Individual 21 represents a Roman, possible military member, then there are important implications for our understanding of Roman military campaigns in the eastern frontier. Archaeologically, Roman military camps have been found across Europe and Britain. These are often ephemeral structures constructed of wood and abandoned for a new camp along the campaigning route. However, no Roman camps have been found in the eastern frontier, leaving archaeologists to rely on epigraphic information to understand campaigning strategies (Kennedy, 1996). Identification as a Roman military camp would be made simpler had there been similar sites to compare to in the region. However, David Kennedy states, “Although we can plot scores of camps across northern/ western Europe from the campaigns of Agricola, Severus and others in Scotland, we cannot in like fashion follow the routes of Lucullus,
Pompey, Antony, Tiberius, Gaius, Corbulo, Trajan and many others in Armenia and Media (Kennedy, 1996).” Yet, Oğlanqala may be evidence for why archaeologists cannot find these camps. Romans may not have constructed camps like they did in Europe and Britain, but reused the abundant existing Iron Age and Hellenistic structures dotted across Northern Mesopotamia, much like the local Armenian and Parthian inhabitants. This contrasts completely with Roman epigraphic accounts that distinguish Roman and Armenian/Parthian campaigning strategies on the use of plain versus mountains, respectively (Plu. Cras. 31.3; Res Gestae 32.1). However, Roman epigraphic sources also reflect on the cost-effective and opportunistic priorities of the Roman military. The defeats of previous campaigns in the region and the newly established Augustan military reforms aimed at low-cost and efficiency may have manifested in the unconventional mimicking of local occupation practices, moving away from the Araxes river and making use of the strong, cyclopean walled citadel at Oğlanqala (Benario, 1999).
Chapter 7: Conclusion and Future Directions

While Individual 21 and Period II from Oğlanqala alone cannot explain Roman campaigning strategy as a whole, the thorough investigation of the burial through multiple lines of evidence begins to provide resolution to vague textual histories of the Caucasus by providing an on-the-ground perspective of Roman presence in the region. Osteological analysis of the skeleton suggests that individual 21 was a young adult (15-21 years) of unknown age with dental wear indicative of a military-related occupation. Isotopic analysis suggests he or she was not local and likely from the Northern Mediterranean. Furthermore, the presence of characteristically Roman artifacts, such as signet rings and Augustan coins, and a temporary encampment archaeological context suggest that Individual 21 may have been Roman and affiliated with the Roman military. The historical record further elaborates, by contributing evidence that Gaius Caesar, depicted on the coins in Individual 21’s burial, campaigned through the Araxes valley at the same time as Individual 21’s inhumation.

Taken as a whole, these many aspects of Individual 21’s burial have important implications for understanding Roman imperial history. While epigraphic histories of campaigns in the region suggest that Roman campaigned primarily in the plains, along the Araxes River, the burial of Individual 21 at Oğlanqala may represent how the Roman military may have followed local Armenian/Parthian traditions and occupied the
mountainous, abandoned Iron Age fortresses in the Caucasus and adopted local funerary customs.

This critical approach to textual histories with osteological and archaeological data is significant to understanding of Roman imperialism in a way that does not simply continue to underwrite the reality of empire as a heterogeneous entity. Rather, this approach provides the opportunity to understand various levels of interaction with locals and the landscape from individuals to empires. The investigation of Burial WWE.1-Individual burial at Oğlanqala is a new approach that not only elaborates on Roman campaigning history in the region, but also begins changing notions of imperialism by casting light on details lost in history.

The Roman burial discovery at Oğlanqala represents how the bioarchaeological record complements the historical record of the Caucasus and highlights aspects of individual lives that would have otherwise been lost in time. By integrating osteological, textual histories and multiple lines of archaeological evidence, a nuanced and intricate narrative emerges of a single individual and how he or she relates to the broader social and historical context of the time. Individual 21 is not only an interesting perspective on the life of an unknown person in history, but also highlights the importance and potential of multidimensional bioarchaeological analysis in the interpretation of the archaeological and historical record.

While this study attempted to study in the burial from multiple dimensions as a foundational representation of Roman campaigning in the Caucasus, there is also room for further investigation. The sample size of this study is too small to make completely
conclusive results. However, because the burial and surrounding archaeological context are unique discoveries in the Caucasus, future excavations will provide more evidence to elaborate on the case at Oğlanqala and broaden our understanding of Roman presence in the Caucasus. This study is aimed at providing a foundational bioarchaeological analysis that will aid in the interpretation and understanding of future Roman period remains found in the Caucasus.
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