SCIENCE IN INTERNATIONAL MEMORY POLITICS: ISOTOPE ANALYSIS AND THE IDENTIFICATION OF THE HUMAN REMAINS OF WORLD WAR II COMBATANTS IN THE BALKANS

By

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To William, my favorite space zookeeper
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By

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Although World War II (WWII) hostilities ended in 1945, the graves and remains of both combatants and civilians continue to be discovered, especially in Eastern Europe. The massive scale of military causalities incurred during World War II made it impractical and, in certain cases impossible, for the material remains of combatants to be repatriated to their home nations. These individuals were often buried in makeshift graves and forgotten. However, once unearthed, the uncertain identities of these individuals may allow groups with certain political or ideological motivations to utilize their remains to advance their own agendas.

This study concerns a group of these unknown combatants (MNI = 26) who perished in WWII Yugoslavia and were buried in Bosnia and Herzegovina (BiH). Associated artifact evidence, such as German identification tags and coins, suggests the remains are of German origin. However, after the former Yugoslavia was overpowered by the Germans and their allies in 1941, various Axis-affiliated military and paramilitary organizations controlled different areas of Yugoslavia. Modern BiH was mostly under the control of the newly formed, Ushaše-led, Independent State of Croatia
(NDH) and the Axis military units present in BiH were, for the most part, composed of German, Austrian, Croatian and Bosniak Muslim combatants. The fact that local ethnic groups allied themselves with the Axis invaders and slaughtered their own countrymen has been an enduring source of animosity in former Yugoslav nations. Therefore, the origins of unknown combatants can be utilized to reinforce narratives of suffering at the hands of one’s neighbors. Additionally, the suggestion of foreign bodies on the landscape may prompt foreign nations to address their own culpability.

To investigate the origins of these individuals, samples of these combatant’s molar teeth (n = 24) were subjected to lead, strontium, oxygen and carbon isotope analysis. Isotopes reflect the local geology and environment of an individual’s place of origin. It was hoped that the isotope analysis would provide a regional identity for these combatants. However, the results were equivocal, suggesting that these combatants could either be claimed by any nation with a stake in their identity or disavowed by every interested European party due to their political nature.
In May of 2015, I found myself in a dusty, old-fashioned autopsy suit at the Sutina Mortuary, just outside of Mostar, the capital of Herzegovina, Bosnia and Herzegovina’s (BiH) southern-most canton. A shrunken, kindly, old Bosnian man who spoke no English had just brought up a large, white body bag from the basement of the mortuary so that I could examine its contents. This helpful mortuary worker would appear without fail every day that I worked at Sutina to, as best I can understand, chain-smoke, supervise me and make sure I did not do anything inappropriate.

BiH is a country filled with bones. The country’s involvement in the First World War, Second World War and the Bosnian War (1992-1995) had created a countryside festooned with corpses and clandestine mass graves. As such, widespread searches for the remains of individuals who went missing during the Balkans conflicts in the 1990s sometimes turn up remains from earlier conflicts. I was interested in conducting isotope sampling on the remains of Axis combatants who had been buried in Bosnia during or directly after World War II (WWII). With the help of the International Commission on Missing Persons, I had been negotiating with the Bosnian prosecutorial authorities—the Missing Persons Institute (MPI), the State Prosecutor’s Office and the Mostar Prosecutor’s Office—for the better part of two months to get access to this particular skeletal assemblage at Sutina in order to determine whether isotope analysis could be used to identify the remains.

As I opened the first body bag and began to take stock of the contents, it became abundantly clear that certain forensic terms have a different meaning in the Balkans than what I was used to in the United States. I had been told that there were nine cases
that fit my requirements in Sutina. I had been envisioning the remains of nine men, carefully stored in body bags or crates. However, as I pulled out the third right femur from the first body bag, I realized my mistake. Just because there might be nine cases, did not mean there were going to be only nine individuals. By the conclusion of my research in Sutina, I had discovered that there were a minimum number of 26 individuals dispersed throughout nine body bags. The commingled nature of the remains and their fragmented and distorted nature made it difficult, and often impossible, to conduct portions of the standard biological profile, reinforcing why the isotope studies were so valuable in the first place.

Even if there had only been nine sets of perfectly preserved remains, trying to discover these men’s individual identities and return them back to where they belonged—the long-term goal of my work—would have necessitated a method, such as bone chemistry or DNA analysis, alongside more traditional biological profile work. I suggest this because, although these individuals’ country of origin was unknown, the skeletal assemblage was likely to contain individuals with a rather similar biological profile. Combatants who fought for the Axis in WWII were likely to be young, male, healthy and European. Their statures might vary, but they were likely to represent a homogeneous skeletal population. Additionally, there was not sufficient information about the nature of their excavation or their military division to identify them individually. Isotope analysis, on the other hand, has the potential to tell the researcher something about both the individual and larger trends in feeding regimes or place of origin.

The Bosnia authorities who recommended I examine the Sutina remains were fairly certain that the remains were those of German combatants and some of the
artifacts associated with the skeletal assemblage(s), such as a German helmet and the aforementioned identification tags, did seem to bear this out. However, due to ongoing research into the historical partitioning of Yugoslavia during the war, I knew that it was possible that the remains in Sutina might have originated elsewhere. When Yugoslavia was apportioned by the Third Reich in 1941, the area of Herzegovina where these individuals had been recovered fell under the purview of the Independent State of Croatia (NDH), a Nazi puppet state run by the Ustaše, a Croat paramilitary organization. There were also Croat divisions of the Wehrmacht and a majority Bosniak division of SS to consider, as well as military divisions that were comprised of Austrian or German commanders and local Yugoslav troops (Shepherd, 2012). Partitioning Yugoslavia also bisected the country into two zones: an interior German zone and a coastal Italian zone. The territory under the direction of the NDH straddled both the Italian and the German zones. Thus, there was the possibility that the men in the body bags could also be Croats, Bosniaks, Italians, Germans or Austrians. Therefore, there were more countries with a stake in the identification of these men than previously thought, potentially entangling the remains in international memory politics.

The possibility that these individuals were not solely of German origin raised questions about which organizations and national communities would be interested in their identification and how variable ideological and political positions related to each stakeholder would influence their approach to claiming these remains, if they did lay claim to them at all. To be clear my work offers no definitive concrete answers about how these stakeholders will react, it merely seeks to consider which institutions or national governments could be affected by the identification of these remains via
isotope analysis and other methods and what their past actions related to their roles in WWII might say about their political and ideological position when it comes to the identification of WWII Axis combatants.

Thus my research seeks not to just utilize carbon and oxygen light isotope ratios and strontium and lead heavy isotope ratios to narrow down these individuals’ potential place(s) of origin so that they may be closer to being identified at the individual level, but also to examine the stakeholders with potential interest in the remains of the men in these body bags. Furthermore, it also considers how human remains, in both their material and representational capacities, have been utilized in the past, particularly in the Balkans, to create or reinforce political and ideological differences between communities.

**Human Remains, Mass Violence and the “Forensic Turn”**

The identification of this relatively small mass grave (or potentially graves), falls within the purview of what has been labeled the “forensic turn,” a term devised by historian Robert Jan van Pelt in 2012 (Anstett and Dreyfus, 2015). The forensic turn is characterized by the widespread involvement of forensic anthropologists and pathologists in situations involving the search for and exhumation of human remains from scenes of mass violence and genocide (Anstett and Dreyfus, 2015).

If one views the forensic turn as a paradigm of “objective truth” meant to counter the claims of perpetrators and fight against the disbelief of the public in a legal context, then human remains, unlike eyewitness testimony, can serve as “substantial evidence” of a crime (Colaert, 2016:340). Thus, while earlier studies may have focused on historiography and eyewitness accounts and testimony, here an effort is being made to situate the body—the actual physical remains—squarely back in the center of the
research being conducted with respect to situations of extreme violence (Anstett and Dreyfus, 2014). According to Anstett and Dreyfus (2015:2), the forensic turn was inspired by the “tremendous resurgence of corpses produced by the extreme violence of the twentieth century: tens and sometimes hundreds of thousands in many countries.” Indeed, Gonzáles-Ruibal (2008) has argued that the technological capacity for massive destruction created by 20th century supermodernity is unique to human history and therefore deserving of study. The forensic researchers engaged in the forensic turn address questions related to the agents and agencies that recover and/or identify the bodies of the dead, the practices and techniques employed in these kinds of identifications, and the motives and interests that provide an explanation of the rise of mass exhumations (Anstett and Dreyfus, 2015).

The forensic turn also focuses on skeletal remains as bodies of evidence that allow for the reconstruction of past crimes in order to get to the truth and to understand the events of these atrocities as they really happened (Colaert, 2016). Thus the body serves as an act of witnessing, of speaking about its own history, and that witnessing binds the body up as an agent in a set of complex relations that may include archaeologists, the deceased’s loved ones, forensic experts (anthropologists, dentists, DNA technicians, etc.), law enforcement, the judicial system, and, of course, the perpetrators of the crime (Crossland, 2009).

Archaeological Uncovering and Making the Absent Present

Thus, the materials themselves, rather than the memories or written discourse on a mass fatality event, are meant to be the center of this kind of research. Here archaeology, particularly as it relates to forensic exhumation, is in a unique position to bring real evidence of that which is unsayable or abject to light, which makes it
potentially more powerful than traditional narratives (González-Ruibal, 2008). Thus archaeological work can be a “critical, progressive force” that highlights the subaltern, the oppressed, the marginalized and the victimized, which allows for other narratives of the past that push back against dominant historical, political or ideological discourse (González-Ruibal, 2011:4). A dead body is worth a thousand words.

Borrowing from contemporary archaeological theory, the archaeological uncovering of human remains makes the absent present and the invisible visible (Buchli and Lucas 2001). Buchli and Lucas (2001) suggest that contemporary archaeological work, meaning work that focuses on the last hundred years or so, gives a voice to the dispossessed because discourse belongs to those who are enfranchised. It makes the world of those who have been shunted to the margins visible again and sometimes it quite literally brings that which was absent to the surface and into the light. This type of archaeological, bioarchaeological or forensic anthropological uncovering is “more immediate, socially relevant, tense and painful” than in traditional archaeological contexts (Buchli and Lucas 2001:15). This is not to suggest that contemporary archaeological work cannot work to supplement or reinforce discursive historical evidence, ideological positions or political narrative, but rather to point out that it also has the ability to subvert these dominant hegemonic social, historical, ideological and political constructions as well (Doretti and Fondebrider, 2001; Dawdy, 2010; González-Ruibal, 2008; Harrison and Schofield, 2010; Shepherd, 2013).

For example, a 1989 Dozor excavation of the military hospital outside of Novgorod in the Soviet Union revealed that all of the skulls of the patients displayed evidence of gunshot trauma (Tumarkin, 1994). The bullets associated with the remains
were Soviet, indicating that, in accordance with Stalin’s scorched earth policy, their own fellow citizens had shot the patients prior to the arrival of German troops (Tumarkin, 1994). The truth of mass executions of one’s own sick and wounded was not something the Communist party would have admitted to if left to its own devices. Governments seldom make public the mistreatment of their own citizenry.

**The Excavated Body, Memory Politics and Potential Stakeholders Involved with the Sutina Remains**

However, as Colaert (2016:341) suggests, when the concept of truth is embedded in the “investigative paradigm of positivist science and law” it is “often reduced to judicial, seemingly unmediated, factual and individual truth, leaving little room for historical explanation or political analysis.” The remains discussed here are, at minimum 72 years old and unlikely to become the subject of judicial proceedings. Thus, their identification, though subject to a number of the same relations as a body that will be used as evidence in an international tribunal, is more likely to be subject to memory politics than the judicial system. The remains of Axis-affiliated soldiers may engage with complex networks of remembering and forgetting aspects of WWII, depending on which stakeholder is being confronted with the remains.

**Bosnia and Herzegovina**

In the case of BiH, the curatorial institutions that handle human remains from conflict—the MPI, the State Prosecutor’s Office, the local Prosecutor’s Offices—and the international agencies that aid them, such as the International Commission on Missing Persons (ICMP) are primarily focused on identifying the remains of individuals who perished in conflicts in the 1990s rather than the Second World War. It is not that they are unconcerned with World War II bodies; it is more that the memory of the Bosnian
War (1992-1995) is more immediate and judicially relevant. Remains recovered from the 1990s conflicts still have the potential to be utilized by prosecutorial authorities in a court of law and there are also the wishes of the families who desire to properly bury the remains of their loved ones to consider. Remains from WWII and other older conflicts take up space and divert resources, which could be spent identifying men, women and children who perished only two decades ago and are still quite clearly remembered by their families and the community at large.

However, the legacy of mass violence and killing from World War II contributed to the brutality that erupted in the Balkans in the 1990s. While it might seem odd that World War II soldiers who died three-quarters of a century ago would have the ability to bring painful memories or embarrassing truths to light, the fact is that the material remains of those who died in the Balkans during World War II have been utilized to reinforce political and ideological narratives valorizing the memory of one’s own dead, while denigrating the dead of other ethnic and religious communities. In what Denic (1994; 2000) has termed competitive victimization, Serb and Croat ultranationalist forces in the early 1990s utilized the human remains of individuals who had been discarded in ravines, unceremoniously deposited in caves and buried in unmarked graves during WWII to provide evidence of the inhuman cruelty of other ethnic and religious groups. This included televised exhumations of the bodies of those murdered during the war and, in Serbia, a burial procession for the dead that stretched on for 1.5 kilometers (Denich, 1994; 2000; Skinner et al., 2001). During the Bosnian War, Croat forces also destroyed the memorial and museum at Jasenovac, the most well-known of the Croat Ushaše-run death camps (Bax 1997). In the case of Croatia, victimized bodies
included the remains of Croatian soldiers who fought for the Axis during WWII, who may have murdered their own fellow citizens.

Treating the memory of atrocities in this manor overshadows the lives lead by individual bodies and allows human remains to become collectively politicized in order to serve larger historical or ideological aims. Widespread exhumations of nameless individuals killed by the Ushaše, Partisans and Chetniks promoted competitive victimization among the former Yugoslavia's ethnic communities (Denich 1994; 2000). Thus, anonymous skeletons are transfigured into martyrs by whichever group (Croat, Serb, Muslim, etc.) is utilizing the presence of the remains as a means of serving their own political and ideological ideals (Verdery, 1999). Similar to Communist monuments and WWII memorials dedicated to anonymous “victims of fascism,” Verdery (1999:101) argues that massive state funerals for individuals murdered in WWII “collectivized and nationalized the dead bodies hitherto mourned by families as their individual dead.”

Notions of a shared past and the memory of collective suffering, as exhibited by human remains, may also help define a population’s idea of nationalism. For example, Kaiser (1995) has argued that within a region that retains ethnic fluidity, such as the Western Balkans, categories such as religion and dialect are less useful in terms of distinguishing identity than the idea that groups are created through a past that they regard as shared. Thus, people whose families suffered atrocities at the hands of the Ushaše, “become Serbs,” while those whose loved ones were murdered by the Chetniks are related to people who would currently be considered Bosniak Muslims (Kaiser, 1995:116).
These acts of remembering one’s own dead have also necessitated a certain amount of forgetting (Lucas 1997; Starzmann, 2016). Sometimes this kind of forgetting does not entail complete erasure or repression, but often fragmentation instead, where one memory is substituted for another (Starzmann, 2016). Thus, Serb communities remember their own suffering and the heroism of the Partisan Resistance, while forgetting or minimizing the fact that Tito and the Partisans murdered approximately 100,000 local collaborators, many of them Croats and Slovenes, at the conclusion of the war (Bell-Fialkoff, 1993). This type of forgetting also erases the mass killings of Muslims in which the Partisans also participated (Bergholz, 2010). On the other hand, the culpability of the Croats for the atrocities the committed during the war is completely obscured by the fact that they had been murdered by Communist (and by implication Serb) Partisans at the conclusion of WWII hostilities.

Alternatively, one could look at this not as an act of forgetting, but rather prioritizing one memory over another. For example, Denich (2000) proposes that by making another national group the Other, it allows Serbs or Croats feel an uncomplicated sense of victimization in which all atrocities committed by their own group are justified and those committed by Others are part of a larger plan of annihilation or subjugation. In this way one’s own group is the always the victim and the Other is always the threat. In this manner, the memories of Serb or Croat violence are not excised, but instead memories of violence from other groups are magnified and serve as a *post hoc* justification for the genocide committed by one’s own ethnic and/or religious group.
Moreover, the practice of using the dead to enhance one’s victim status and vilify others did not end with the conclusion of hostilities in the mid-1990s. For example, the “Young Muslim” martyrs memorial dedicated to members of a Muslim political group that were killed by the Partisans at the conclusion of WWII is located inside the Kovači military martyrs cemetery, which is a Bosnian war cemetery. This creates a link between WWII martyrs—including military martyrs—and martyrs from the 1990s conflict that reinforces the victim status of Bosniaks. Moreover, the most cursory glance at the internet—a virtual world where anyone can speak for the past and all opinions in print are of equal weight no matter how dubious (see Shermer and Grobman, 2009)—reveals that though the Bosnian War ended over 20 years ago, the images of the bones or bodies of those murdered in the former Yugoslavia during WWII is still being utilized to argue for justice against the Communist Partisans or Croatian Fascists.

**Germany**

Memory politics among stakeholders in Germany may be cast in a different light. German culpability for wartime atrocities is not in doubt and German institutions do not question memories of wartime suffering (Wüstenberg and Art, 2008). Rather the chief purpose of the *Volksbund Deutsche Kriegsgräberfürsorge* (the German War Graves Commission, henceforth referred to as the *Volksbund*), the German institution responsible for locating, excavating and commemorating the remains of German combatants who die in foreign wars, utilizes the presence of their dead on the landscape as a way to build bridges with communities who were victimized by the Nazi regime. Their motto, “reconciliation over the graves,” suggests that the remains of their servicemen can serve as an olive branch between the German people and the countries that they brutalized (Livingstone, 2009). The idea here is that the human remains and
the memorials built around the remains can be utilized to acknowledge and atone for the suffering German troops caused to other nations (Livingstone, 2009). By burying German combatants in the nations where they fell—nations that were often invaded by the Reich—the Volksbund acknowledges the negative memories of the host nation and hopes to foster a spirit of cooperation between the victim and the perpetrator that will promote reconciliation. The Volksbund also continues the important German tradition of grave tending, while teaching younger generations to remember and learn about the consequences of German totalitarianism by sending German teenage volunteers on exchange trips to tend to the soldiers graves all over Europe.

However, the desire to provide their own dead with a dignified burial, has, at times, placed the Volksbund at odds with local populations with whom they claim to wish to reconcile. Local people may perceive building a cemetery to honor German dead as a denigration of their memories of wartime atrocities, particularly if the Volksbund has not given proper consideration to the individuals buried in the cemetery. For example, the Volksbund has found itself in problematic situations in the past because it commemorated the remains of known perpetrators of atrocities, such as death camp commandant Christian Wirth and several SS Auschwitz guards, built memorials to murdered Nazi functionaries at locations where thousands of people had been previously murdered by the Nazi State and erected cemeteries too close to Partisan martyrs monuments in eastern Europe (Livingstone, 2009). When I enquired about this disconnect between building cemeteries in foreign nations in service to reconciliation and past acts of offending the local populace (and sometimes people in
Germany as well), I was told by a *Volksbund* official that the dead are dead, that they cannot hurt people anymore and that they deserve the dignity of a grave.

Moreover, similar to the manner in which former Yugoslav countries collectivize their dead for the purposes of perpetuating narratives of suffering and victimhood, the *Volksbund*’s use of slain WWII soldiers in service to reconciliation can also lead to collectivization. While the Volksbund does make efforts to identify individuals, they often bury them where they fell rather than returning them to their families and they may bury them in unindividuated graves simply marked “*ein deutscher Soldat.*” Thus, the soldier’s individual identity is relegated to the background so that an attempt may be made to employ these dead bodies toward a higher reconciliatory purpose.

Additionally, should these men in the nine white body bags turn out to be German combatants, the memory of German suffering during the war also warrants attention. The tremendous loss of German life at the hands of the advancing Russians, as well as the massive civilian casualties related to the bombings of cities, such as Dresden and Hamburg, has led some, particularly those on the far right, to the proposition that Hitler’s first real victims were the Germans themselves (Herf, 1997; Niven, 2002). Indeed in the last days of the war, there were so many corpses and so few resources, that people in Berlin ran out of coffins with which to bury the dead (Black, 2010). As German soldiers and expellees returned from the East, bringing with them terrible tales of Soviet brutality, West Germans began to craft a narrative in which ordinary Germans were the victims of Hitler and the Nazi party (Moeller, 2006a; Wittlinger, 2006; Salzborn, 2007). If we count the number of soldiers, civilians and death camp victims, the number of Germans killed during the war totals around 7 million
people (Boyes and Horsley, 1995). The number of Germans who were evicted from their homes in Central and Eastern Germany in the period following the war totals around another 11.5 million (Boyes and Horsley, 1995). Boyes and Horsley (1995) have argued that the idea of the Germans as victims was instrumental to the lobbying position of the Sudeten Germans who claimed they were entitled to restitution for the loss of their property and lands in the former Czechoslovakia.

While claims of German victimhood were much more common directly after the war, the idea that German soldiers and officers were Hitler's victims is still a popular conceit among far right groups particularly in what was the German Democratic Republic (GDR) (Wüstenburg and Art, 2008). Memories of the atrocities committed against the Germans by the Communist Partisans and the Red Army specifically have served as a justification for portraying the German people as victims of the Nazi state or recharacterization of the Communists as the true perpetrators of crime (Herf, 1997; Niven, 2002; Wüstenburg and Art, 2008). I have even seen internet sites and blogs that utilize the remains of Croat and Slovenian troops who were murdered by the Partisans at the end of WWII to minimize atrocities committed by the Germans during the war or to deny the Holocaust outright.

**Austria and Italy**

The revelation of men in the body bags in Herzegovina as Austrian or Italian could also be potentially problematic, but for different reasons. Austria, unfortunately, does not have a particularly good record of accomplishment of recognizing the role its citizens played in the Nazi program of genocide. Part of this has to do with the idea, official codified by the Allies in the Moscow Declaration of 1943 that the annexation of Austria made the Austrians the Nazi’s first victims (Judt, 1992; Keyserlingk, 1988). This
reasoning has allowed Austria to eschew responsibility for genocidal activities, including the entire Austrian concentration camp system. Thus, the disclosure of these remains as Austrians would subvert the historically dominant narrative in Austria that remembers itself as a victim of Hitler and seeks to minimize or erase the memory of the many instances of Austrian collusion.

Italian memories of the war are also complicated because even though the Italians were part of the Tripartite Pact, they switched sides during the war and spent 1944 in incredibly trying conditions. Their defection has allowed the Italians prioritize their Partisan memories and the accompanying suffering and deprivation to also claim victim status (Higgins, 2013). When confronted with evidence of their collusion in atrocities, the Italians often characterize themselves as unwilling participants who attempted to minimize acts of German barbarism against civilians in southeast Europe (Focardi and Klinkhammer, 2004). However, though they did participate in actions that saved the lives of Yugoslav Serbs, there is ample evidence that Italian soldiers participated in murder, rape and the destruction of property in the Balkans (Burgwyn 2006; Focardi and Klinkhammer, 2004).

**The Sutina Remains and Temporal Proximity**

The idea of temporal proximity suggests that the past and the future coalesce in the present rather than being distanced from it (Dawdy 2010; Harrison 2011; Olivier 2013). The collapsing of temporal distance proposes that no entities can exist apart from their relations (Alberti et al. 2011; Whitehead 1978[1929]). This means that entities perceived in the past (old castles, pieces of furniture, arrowheads, human remains) exist
within a series of relations that are actually happening rather than as part of a single, metaphysical, reified past (Alberti et al. 2011).

The political manipulation of World War II memories and the use of human remains from past conflicts to reinforce a particular group’s worldview, reinforce this idea that the past is not past. The suffering inflicted on local populations in the Balkans, Germany, Austria and Italy during the Second World War, as well as aspects of local history that pre-date WWII, has not simply vanished. It cannot be put in a glass case and relegated to the past because for many people, particularly in the Balkans, the outcome of the Second World War and massive amount of killing and reprisals are not in the past (Shepherd, 2012; Verdery, 1999). Rather the past is in the present and it informs the future (Olivier, 2013). As Verdery (1999) notes, for those in the Balkans, those who were killed in World War II might as well be current deaths. Thus, dead bodies can lead political lives because they exist within a set of relations where institutions, ethnic groups and political groups ensure that they are not relegated to the past. The past does not simply disappear and become history. As Rezun (1995:51) writes:

The deeper one delves into the subject of mutual hatred, the more one becomes aware that World War II is not even remotely historical in the minds and consciousness of the Southern Slavs. That horrendous war is ever-present; it is always invoked, taught to generations of children today as if it happened only yesterday. The war’s haunting memory suffuses the hatreds and antipathies of the people. What happened during World War II is central to the whole investigation of the European and Yugoslav drama, for we cannot understand the events of the present if our memory of the past is weak.
Bodily Agency: Human Remains as Representation and Human Remains as Materials

Additionally, the idea of the body as agent needs to be considered when we think about the importance of the bodied of these military personnel, or, for that matter, human remains more broadly. Part of the importance of the dead resides in the impact that they have upon the living (Kroeber 1927; Hertz 1960 [1907]; Laqueur, 2015; Metcalf 1981; Ucko 1969). For example, the forensic personnel involved with acts of witnessing, remembering or investigating human rights are interested in the truth or sense of closure material remains provide to living people (Colaert, 2016).

Latour (2005) has proposed that non-living things can function as agents. We can also theorize bodies as assemblages of component pieces rather than as defined wholes (Delanda 2006; Mol 2002). However, the impact human remains have on the living through their agency is a problematic concept because bones, though not “alive,” are, I would argue, distinct from non-human agents. You may treat your car as though it was a person, anthropomorphizing it by giving it a name or talking to it or cursing at it when it breaks down, but it was never animate in the same way that a living person once was. Thus, bones challenge established distinctions between the subject and the object, the person and the thing (Krmpotich et al., 2010).

Human bone is the remainder of a once alive person; it is an assemblage of once living pieces. This, I would argue, makes it a “once-living” or “post-human” agent rather than a non-human agent. I believe the distinction is important due to the fact that living individuals and communities go to extreme efforts to interact with, protect and pacify their dead (Posel and Gupta, 2009). This is not to suggest that inanimate objects cannot wield significant power over human beings or even to propose that certain non-living
objects cannot be considered animate, but more to look at how the material and the subjectivities bound up with that material are handled after a living being stops being animate. Additionally, it is of consequence because the emotional entanglement that living people have with the bodies of the dead can be made to serve political and ideological ends (Ballbé and Steadman, 2008; Bax, 1997; Buchli and Lucas, 2001; Denich, 1994, 2000; Verdery, 1999; Mosse, 1990).

**Human Remains as Representation**

Part of what gives soldier’s remains power over the living is their ability to simultaneously serve as icons that resemble the physical structure of the living, indexes of once-living individuals, and symbols of national/ethnic/religious loss, patriotism, and valor. The idea that human bones can be icons, indexes and symbols [sensu Peirce, 1991] addresses the relationship between human remains and agency because human bones broaden the category of non-human agency due to the fact that they were once living people and retain the ability to compel the living to do certain actions (Crossland, 2009; 2013).

According to Peirce’s Theory of Signs, the sign consists of anything that is determined by something else (the Object) which is interpreted by an individual (the Interpretant) based on his or her understanding of the sign/object relation (Peirce, 1991). This means that the sign is only powerful in its ability to convey its meaning through the object and that it may change depending on how it is interpreted by the users of the sign within a network of relations. For example, Americans interpret the Peace sign as a sign of goodwill. However, if you were to give the same sign in Britain, it would be interpreted as a sign of animosity and might incite violence. The same is true for the three-finger salute involving the thumb and the first two fingers of the hand that
was utilized by the Serbs during the 1990s Balkan conflicts (and is still currently used). While this might be a symbol of respect and encouragement among pro-Serbian nationalists, the Serb military, and in Serbia in general, it is considered provocative and insulting by many of the residents I met in Sarajevo, which has a majority Muslim population. Alternatively, the raising of three fingers in Germany, as made famous in the film *Inglourious Basterds*, is simply used to count to three and has no broader social or political connotations other than marking the person as German.

Should the sign reflect the qualitative features of the object then it is an icon (Peirce, 1991). Though icons are usually thought of as paintings or pictures, I propose that a bone functions as an icon because of its resemblance to the actual physical structures of a living being, say an arm, a leg, or even a head (Crossland, 2009). Though it is debatable whether disarticulated remains such as the ones found in the body bags at Sutina retain their iconic qualities, I would argue that most people who interact with a femur or a cranium retain their abilities to visualize the leg or the skull of a living person.

If the object constrains the sign in a way that requires that the sign employ some kind of material or existential connection between it and the object, it becomes an index. In the case of bones, they are the manifestation of a whole once living person (Crossland, 2009). A cherished personal item of clothing, such as a ring or pair of eyeglasses, may be indexed in the same way, but as St. Thomas once argued, bodies are far more intimately connected to people than garments because they belong to a person’s very nature (Laqueur, 2015:53).
An isotope bone or tooth sample is no longer iconic because it does not retain its physical similarity to say, a human arm or leg, but it continues to function as an index because it retains its connection to the once-living person. In the context of the human remains from WWII Herzegovina, the skeletal material is commingled and detached from the flesh and the easily recognizable shape of human arms and legs, yet the bones retain their referential quality. In the same way that a pair of reading glasses references the person who once wore them, the femora, humeri, crania and other human remains from these burial contexts recall the people to whom pieces of skeletal material once belonged.

Symbols are different, in that the sign is required to use some sort of social convention or rule of law in order to connect it with the object. For example, the stars and stripes or the bald eagle are both symbols of the United States of America and chances are, if you are raised with these symbols, you will know what they mean and instantly interpret them correctly. Someone without your frame of reference will have no such ties to the object and will not make the larger connection to what the sign is supposed to signify. After all a flag is just a flag and an eagle is just a bird without the underlying social structures that make it meaningful. In the case of human bones, they function as symbols because they call to mind certain events and ideas. If we think about human bones in a military context, they may symbolize valor in the face of extreme peril or loss at the hands of an enemy or the mass violence inflicted upon the innocent.

The bones of dead people may stand for all of those things because, as Verdery (1999) points out, a body’s effectiveness is its symbolic “ambiguity, multivocality or
polysemy.” The dead body may have many, possibly contradictory, meanings all at the same time. This is partially made possible by the dead body’s inability to speak for itself (Verdery 1999). The body must rely on the living to tell the dead person's story and it is therefore subject to manipulation.

Verdery (1999) has argued that part of what makes this possible is that corpses are perceived as having a single name and a single body and therefore they present the illusion of having only singular significance. The political significance of the dead person may be bound up with this symbolic ambiguity due to the fact that everyone considering the symbolic quality of the dead person imagines that everyone else is sharing the same symbolic meaning. Therefore, what is really important is the recognition shared among the larger group of living people that the dead person(s) is/are somehow important (Verdery 1999).

However, the polysemic or multivocal quality of the meaning of human remains is at odds with the suggestion within the forensic paradigm that ‘bones do not lie’ (Colaert, 2016). Within the positivist paradigm within which human remains operate in forensic or military contexts, the remains (the object) speak for themselves (Crossland, 2009; Colaert, 2016). Thus, their very presence is meant to cut through all of the memory politics and political posturing that may surround the remains. In the forensic world, there is no room for contradiction or multiple meanings. There is the truth and there is everything else. This is not to argue that getting at the truth should not be of primary importance, but rather to suggest that the memory politics surrounding dead bodies as well as their meanings is more complicated than the positivism forensic narrative would have us believe.
**Human Remains as Materials**

Bones have an important representation quality to them. However, they are also material things. The material aspects of bone and its ability to appear as a physical concrete thing is part of what makes it powerful (Verdery, 1999). As Verdery (1999:27) notes, human bodies (usually represented by skeletal remains) are “indisputably there, as our senses of sight, touch, and smell can confirm.” It is dissatisfying to maintain a burial with no actual remains in it. Being able to touch the remains of your loved one and to know that you have their physical body with you is a much more emotionally fulfilling experience. Moreover, from a visual perspective, there is greater power in being able to see the remains than there is in having a vague idea that they are out there somewhere in the World. It makes the dead feel solidly grounded and also helps contribute to the idea that the body shares a single meaning (Verdery, 1999).

Assessing bones as materials can also allow the researcher to consider the practically-experienced, processual and relational properties of bone, conveying what happens as these properties flow, mingle and transform, degenerate and decay (Ingold 2007a; 2007b). In this manner, the material qualities of bone can be also judged based on what they allow or afford, meaning what they offer the organisms or even objects with which human remains interact (Gibson, 1979). Krmpotich et al. (2010:378) suggest that “bones can be and do things by means of their firmness, dryness and portability.” Bone’s quality of physical endurance, lack of complete decay (contra soft tissue), and the fact that it can be transported allow researchers, but also relatives, politicians, law enforcement, the judicial system and the lay public, to interact with its materiality over time in a way that is usually not possible with a fleshy body.
Physically handling human remains in the context of examination and reinterment can allow us to place ourselves in the position of the deceased, to think about what we would want if we were the dead body and some other stranger was excavating and handling parts of our body. For example, Tumarkin (1994) discusses how she finds washing the remains of WWII soldiers killed at the Russian battle sites in Rzhev comforting because if she were one of those soldiers it would comfort her to know that someone had taken the time to lovingly and respectfully excavate and wash her remains and then rebury them.

Moreover, the dead body, as a concrete material thing provides confirmation of the place of the living in the World. For example, the physical remains of one’s ancestors allow people to claim their connection to the land. Just as isotope analysis utilizes physical geography to create a connection between the unknown individual and the biosphere. Verdery (1999:101) suggests that the presence of graves has lent legitimacy to territorial claims in the Balkans because these were the locations in which “our” (meaning one’s own) dead are buried. The presence of these remains on the physical landscape serve as a justification for a community’s presence on the landscape and for recrimination against those responsible for the mass graves of one’s murdered ancestors. As the Serbian nationalist Vuk Drašković put it “Serbia is wherever there are Serbian graves” (Verdery, 1999:98).

Interestingly, Hitler and the Nazis also utilized this kind of tie between the dead and the physical environment, only they employed it with fallen soldiers. The blood spilled by German soldiers and their graves were employed to legitimate Nazi land claims (Mosse, 1990).
Organization of this Research

Following this introductory chapter, chapter 2 provides background information regarding the invasion and annexation of the former Yugoslavia during WWII. Chapter 2 also discusses how the formally Axis-aligned nations of Germany, Austria, Italy and Yugoslavia itself have dealt with issues related to the memory of wartime suffering and culpability.

Chapter 3 explores the archaeological context and the artifactual evidence associated with the unknown remains from Herzegovina, BiH. This chapter also contains information regarding the biological profiles of the remains and any associated trauma.

Chapter 4 outlines how isotope analysis of the elements strontium, lead, oxygen and carbon have been utilized by scholars to make inferences about the geographic origins of individuals and populations. Information on how isotopes have been used in warfare-related contexts is presented, as is the geological context of the Western Balkans.

Chapter 5 discusses the materials and methods used to conduct isotopic analysis of the human remains and environmental samples utilized in this study, while Chapter 6 outlines the isotope results.

Chapter 7 provides a discussion of the isotope results and suggests that equifinality is the primary problem inhibiting the identification of these unknown individuals through isotopic means. Chapter 7 also proposes that the suggestion of equifinality allows the regional identity of these remains to exist in a state of limbo, wherein they can be claimed by every nation with a stake in their identification and disavowed by these nations in equal measure.
Chapter 8 provides a few conclusions and suggests that more research is necessary to refine the isotope methods and to understand the complicated political structures that interact with these remains. The concluding chapter also suggests that the relationship between nationalism and human remains continues to be relevant, particularly in times of increasing right-wing populism and nationalist inspired isolation.
CHAPTER 2
HISTORICAL BACKGROUND

Interwar Political Intrigue and the Creation of the Kingdom of Yugoslavia

Prażmowska (2000) has suggested that the instability found in the Balkan region in the interwar period was a product of the weakening of the Ottoman Empire coupled with an increased interest in indigenous nationalism. As the Ottoman hold on their European territories became tenuous at the turn of the 20th century and non-existent after the Balkan Wars in 1912, new Balkan states and nationalist groups began to attempt to seize land and secure their borders (Prażmowska, 2000). This focus on local issues and the affairs of neighboring states, as well as the new economic burdens placed on these emerging countries for such necessities as the maintenance of standing armies, created a situation in which potential Western European allies began to think of the Balkans region as unpredictable and undisciplined (Prażmowska, 2000).

The consolidation of land and the reestablishment of boundaries at the close of World War I, created a new territory for some states in the Balkans and new borders for others (Prażmowska, 2000). However, an interest in local affairs and the holdings of neighboring states continued to be of greater importance than alliances with Western European powers. While some economic alliances and trade agreements were formed in the early 1930s, as the economic depression in Europe worsened, wealthier western European nations could not be persuaded to invest in the Balkans and therefore the Balkan countries, who were for the most part still focused on their own regional political agendas, were not concerned with Western Europe’s concern over German expansion (Prażmowska, 2000).
The creation of what eventually became Yugoslavia came about during World War I. Fearing that their lands would be subdivided, a group of Serbian nationals spent the majority of the First World War attempting to figure out what France and Britain had promised other countries and ensuring that the Allied nations of Europe and the United States knew that their greatest desire was for the unification of Serbs, Croats and Slovenes (Prażmowska, 2000). While the exiled Serbian government on Corfu worked to gain support from the Allied Forces, in 1918 a National Council was established in Zagreb (Prażmowska, 2000). When Emperor Charles of Austria-Hungary conferred state authority and control of the Adriatic Fleet to the National Council, the Corfu government, the Yugoslav committee (a mostly Croat group of Austro-Hungarian exiles), Bosnian-Herzegovina, Vojvodina, Montenegro and the actual kingdom of Serbia all came together to support the creation of the state; this was primarily done to ensure that Italy would not be able to acquire new territories along the Adriatic Coast (Prażmowska, 2000).

However, the fact remains that the country that would officially become Yugoslavia in 1929 was a haphazard conglomeration of disparate and divided people, who had no history of working together as a united nation. Attempts at a parliamentary system broke down; the Croats, who had been in favor of a federal system, refused to take up their parliamentary seats and continually agitated for an independent Croatia (Prażmowska, 2000). The parliamentary system was widely perceived to be dominated by Serbs, who also held the majority of the positions in the army (Sunic, 1994; Prażmowska, 2000).
Adeli (2009) suggests that the Yugoslavism advocated by the Serbs versus the national self-determination advanced by the Croats was rooted in their disparate historical experiences. While Croats, Serbs and Muslims all come from a common Slavic stock, all three ethnic and religious groups trace their origins to medieval times when their respective nations were all independent kingdoms (Adeli, 2009). However, all three groups diverged after the arrival of the Turks in the 14th century. The Croats remained part of the Ottoman Empire only until the 16th century, when they came under Austro-Hungarian rule and adopted many of the characteristics of Austro-Hungarian Empire. The Serbs, on the other hand, were ruled by the Byzantine and then the Ottoman Empire until Serbia became an independent nation in the early 19th century. As such, Serbia maintained some of the eastern influence of the Ottoman Empire while retaining their devotion to Orthodox Christianity (Adeli, 2009). However, the Bosnian community consisted of many people who had been assimilating into Ottoman culture to the point of adopting Islam, the official religion of the Ottoman Empire. Shifting alliances and changes in territory ensured that these ethnic communities would intermix. However, the threat of outside influence encouraged intellectuals in Croatia to advocate for Yugoslavism, which called for all Southern Slavs to identify as one political unit in order to temper the authority of Austria-Hungary (Adeli, 2009). Meanwhile the Party of State Right, founded by Ante Starčević and Eugen Kvaternik, was agitating for the Croatia’s right to exist as an independent nation, separate from its neighboring states (Adeli, 2009).

In 1928, King Aleksandar took over the country and ruled by decree until he was assassinated on October 9, 1934 by Croat and Macedonian extremists. Petrovitch
(1942) argues that King Alexander was assassinated because he was a vocal supporter of the creation of a Balkan Federation, who had advanced the Balkan cause by instituting the Balkan Pact of 1934, which indirectly connected Turkey and Greece with the Little Entente of Czechoslovakia, Romania and Yugoslavia. Mussolini was implicated in the assassination plot because he provided support to the Croat extremists (Burgwyn, 2006). However, prominent members of the international community who wished to cultivate relationships with Mussolini kept the dictator’s name out of the League of Nations debate over how to punish those involved in the assassination plot; in the end, only Hungary was punished for aiding the assassins (Petrovitch, 1942).

While the monarchy continued to rule under the regency of Prince Paul, the assassination exacerbated already tense relationships within the young country. While some attempts were made to grant more autonomy to Croats, Slovenes and Muslims, these attempts at compromise came too late, making it easy for the German invasion to exploit the existing wedge between ethnic communities in Yugoslavia and the Balkan region (Prażmowska, 2000).

Additionally, during the interwar period, the Italians made several attempts to gain land that rightfully belonged to Yugoslavia. French and English attempts to placate the Italians, while not giving into their demands, created a situation whereby the Yugoslavs became increasingly suspicious of the League of Nations and made the country disinclined to put their trust in its members (Prażmowska, 2000). Prince Paul, the Prince Regent of the Kingdom of Yugoslavia, appealed to the British for aid to ensure the safety of his people against the German and Italian threat (Kurapovna, 2010). The Prince regent recognized that the Italians were supporting the Croat Ustaše
in an attempt to get Croatia to break with Yugoslavia and that Mussolini believed that there was unresolved business between Italy and Yugoslavia (Kurapovna, 2010). Prince Paul also noted that if the Germans attacked Salonika in the Greek region of Macedonia, Yugoslavia would be completely surrounded. If the British or other allied forces could offer no guarantees of assistance, then Yugoslavia would be in a perilous position. Maintaining neutrality, therefore, seemed like a better option to the Prince regent than declaring for the Allies in a part of Europe where Yugoslavia would effectively be surrounded by countries under the control of the Germans and retribution-seeking Italians (Kurapovna, 2010).

**Yugoslavia and World War II: The German Attack, 1941**

On March 25, 1941, the kingdom of Yugoslavia joined the Tripartite Pact, a treaty that had originally established the alliance between National Socialist Germany, Fascist Italy and Imperial Japan. As a condition of this agreement, the Yugoslav government would allow the Germans to transport troops across Yugoslavia to Greece and, in return, the Germans would not attack Yugoslavia (Smith, 1995). Alliances with both Yugoslavia and Bulgaria were key to Hitler’s strategic plan to invade Greece because both countries shared a border with Greece (Lightbody, 2004). As part of the pact, the German foreign minister, Joachim von Ribbentrop, promised to respect Yugoslavia as a sovereign nation and that Germany and Italy would not require Yugoslavia to offer them military assistance, effectively cementing Yugoslav wartime neutrality (Dragnich, 1992).

However, Yugoslav Prime Minister Dragisa Cvetkovich’s signing of the Tripartite Pact created civil unrest in the Balkans. The day after the Yugoslav government signed the Tripartite Pact ordinary Serb citizens took to the streets of Belgrade in protest (Djordjevic, 1997; Lightbody, 2004). Meanwhile, British Prime Minister Winston
Churchill, believing that an alliance between Yugoslavia, Greece and Turkey could provide enough manpower to drive back the Germans, encouraged the British Intelligence Service and the Special Operations Executive to aid Yugoslav resistance forces in staging a coup d’état (Catherwood, 2003). On March 27, 1941, General Dušan Simović and the Yugoslav Air Force overthrew the Cvetkovich-Maček cabinet in a bloodless coup (Smith, 1995).

News of the coup made Hitler furious and on March 27, Hitler issued Führer Directive No. 25, which called for the annihilation of the Yugoslav forces and authorized the Axis invasion of Yugoslavia (Hitler, 1964). Speaking to the Hungarian minister in Berlin, Hitler proposed, “we will burn out for good the festering sore in the Balkans” (Bailey, 1980:25). Hitler planned to deploy the Luftwaffe to bomb the city of Belgrade and the ground installations of the Yugoslav Air Force, while simultaneously launching an offensive of the German 12th Army (Hitler, 1964). In Directive No. 25, Hitler further suggested that Germany recruit Bulgaria and Romania, as well as Hungary and the Italian 2nd Army. Hitler was so adamant about his “merciless campaign” to invade Yugoslavia that he delayed Operation Barbarossa, Germany’s planned offensive in the Soviet Union, for four weeks in order to provide the Wehrmacht and the Luftwaffe sufficient time to pulverize Yugoslavia before they invaded Greece (Lightbody, 2004:94).

Meanwhile Mussolini and the Italians contrived to make certain that they would also be part of the initial attack on Yugoslavia to ensure that they would receive part of the spoils. Mussolini and many of the Italian Fascists had always perceived Yugoslavia as an artificial state created under the direction of Woodrow Wilson as part of the Treaty
of Versailles (Burgwyn, 2005). Mussolini believed that Wilson’s desire to construct the new nation of Yugoslavia along ethnic lines violated the London Pact of 1915, which ceded the Friuli-Julian area east of the Julian Alps watershed, Trieste, the Istrian Peninsula, and several coastal islands in Dalmatia to the Italians in exchange for aiding the Central Powers (Burgwyn, 2005). Mussolini had spent years seeking ways to either undermine Yugoslavia or actively dismantle it and to claim territory he believed rightly belonged to Italy (Burgwyn, 2005). Therefore, the impending attack on Yugoslavia would finally provide the Italians with a way to claim territory in Istria and Dalmatia.

At 5:20 am on April 6, 1941, the German military attacked the Kingdom of Yugoslavia. Around 200 German bomber planes bombèd Belgrade, intentionally targeting schools, hospitals and two buildings associated with Belgrade’s democratic newspapers (Petrovitch, 1942). The VIII Air Corps, a part of the Fourth Air Force, carried out the air operations (US Army, 1986). According to Major General F.W. von Mellenthin (1956), the German 2\(^{nd}\) Army advanced on Zagreb and then made its way through the Bosnian highlands on route to Sarajevo, while an armored assault group made their way to Belgrade through Hungary (Figure 2-1). The XLIX Mountain Corps consisting of the 1\(^{st}\) Mountain and 538\(^{th}\) Frontier Guard Divisions, the LI Infantry Corps composed of the 101\(^{st}\) Light Infantry and 132\(^{nd}\) and 183\(^{rd}\) Infantry Divisions and XLVI Panzer Corps comprised of the 8\(^{th}\) and 14\(^{th}\) Panzer Divisions, as well as the 16\(^{th}\) Motorized Infantry Division led the 2\(^{nd}\) Army advance (US Army, 1986). Meanwhile the main advance actually came from the German 12\(^{th}\) Army and panzer divisions, who were stationed in Bulgaria (von Mellenthin, 1956). Field Marshal Paul Ludwig von Kleist then took the panzer groups through Niš toward Belgrade, while the 12\(^{th}\) army went
south toward northern Greece and southern Serbia, rendezvousing with the Italians in Albania along the way (von Mellenthin, 1956). The XIV Panzer Corps that routed the Yugoslav 5th Army on their way into Belgrade via Niš consisted of the 11th Panzer Division, who spearheaded the attack, the 5th Panzer Division, the 294th Infantry and the 4th Mountain Division (US Army, 1986).

Concerning the Italians, on April 6, Italian bombers targeted towns in Dalmatia. The Italians stood their ground against sporadic Yugoslav attacks and eventually overran Yugoslav positions (Burgwyn, 2005). On April 11, the Italians rendezvoused with the German military column coming from Bulgaria at Lake Ochrid and Debar in Albania and from there moved into Kotor and Cetinje in Montenegro (Burgwyn, 2005). An Italian column coming in from Zara finally reached the railhead at Knin in Croatia, allowing the Italians to successfully cut off the Yugoslav retreat route into the mountainous terrain of Bosnia (Burgwyn, 2005). Burgwyn makes a compelling case that if the Yugoslav troops had been able to reach Bosnia, they may have been able to prolong the official war for a significant amount of time by means of guerilla warfare. Lastly, a detachment of Italian motorcyclists sped to Ljubljana, Slovenia on April 11 and quickly took control of the city (Burgwyn, 2005).

Whatever hopes Churchill and the British had had that the Yugoslav military and the newly established government could resist an invasion without support from other nations in the Balkans and the southern Mediterranean were quickly dashed and German forces occupied Belgrade within a week of the German advance (Catherwood, 2003). Belgrade had been badly bombed by the Luftwaffe and while the Yugoslav army had attempted to defend Yugoslavia along its non-mountainous northeastern border, it
was no match for battle-hardened German panzer divisions (Dragnich, 1992). The war lasted less than two weeks and the Germans lost only 151 soldiers (Bailey, 1980; Lightbody, 2004). During the fighting, the pro-Axis, Fascist-aligned, Croat Ustaše movement, previously seen as a terrorist organization, declared an independent Croatian state and on April 17, Yugoslavia surrendered.

The Wartime Partitioning of Yugoslavia

The end of hostilities in Yugoslavia led to the partitioning of the country (Figure 2-2). In Directive No. 25, Hitler suggests that “internal tensions in Yugoslavia will be encouraged by giving political assurances to the Croats” (Hitler 1964:61). To this end, the Axis satellite, the Independent State of Croatia (NDH), which encompassed most of modern day Croatia and Bosnia and Herzegovina, was established under Ustaše leader Ante Pavelić (Dragnich, 1992). Pavelić and a small group of his followers had gone into exile after King Aleksandar declared Yugoslavia a royal dictatorship in 1929 (Donia, 2006). During his exile in Italy, Pavelić developed the paramilitary terrorist force that would become the Ustaše with the support of the Italian government, who monitored and restricted the group’s actions (Donia, 2006). While exiled, the Ustaše also aided the Macedonians in assassinating King Aleksandar in 1934 (Donia, 2006).

The Banat region which had once belonged to Austria, as well as the area Hitler called Old Serbia (the region surrounding and below Belgrade) came under German control, while the majority of Macedonia was annexed to Bulgaria (Hitler, 1964). The German government placed control of their occupied territory in Serbia in the hands of General Milan Nedić, effectively created a Serbian puppet state (Djordjevic, 1997). Meanwhile, the Italians either occupied or annexed Montenegro, the Dalmatian coastline and the southern region of Slovenia, giving them control of the majority of the
Adriatic Coast (Dragnich, 1992). Hungary annexed a small part of eastern Croatia and Slovenia and the area of modern day Serbia north of the Danube and west of Belgrade (Dragnich, 1992). The Albanians annexed parts of southern Montenegro and Serbia and the western edge of Macedonia (Dragnich, 1992).

Due to the fact that their existence and continued support depended on the approval of the Germans and Italians, the NDH was forced to accept the partitioning of their new state into distinct Italian and German occupation zones. The Vienna Line bisected the Croatian state with the Italians controlling the areas closest to the Adriatic and the Germans controlling the more desirable industrial and agricultural areas (Tomasevich, 2001). Though the Italians viewed Croatia as falling under their sphere of influence, as the war went on, Germany exerted greater amounts of control over Croatian economic, political and military life (Tomasevich, 2001). While both Germany and Italy maintained their own soldiers in their respective Croatian zones, the Wehrmacht controlled all the Croatian army, the Ustaše government and the Ustaše militia (Tomasevich, 1975). German influence was also aided by the fact that, unlike the Italians who claimed a large part of Dalmatia for themselves, Germany endeared itself to the Croatian state by making no efforts to directly annex any NDH territory (Tomasevich, 2001). Moreover, though Mussolini and the Italians had elevated Pavelić to power, Pavelić resented the Italian annexation of Dalmatia and he secretly confided to the Germans that he was waiting for what he perceived to be the inevitable disintegration of the Italian army so that the NDH could reclaim its right to the Adriatic Coast (Burgwyn, 2005).
The Muslim Community and the Creation of the 13th *Waffen* SS Mountain Division

Prominent members of the Bosnian Muslim political, intellectual, business and religious communities, dissatisfied with the way they had been treated by the majority Serbian political system during the interwar period—particularly in regard to agrarian reform—initially sided with Germany and expressed support for the new Croatian state (Tomasevich, 2001). The Germans also provided an amount of order that had been lacking during the country’s time as a kingdom (Redžić, 2005). Moreover, the Germans brought in the pro-Nazi Grand Mufti of Jerusalem as another means of persuading the Muslims to side with the Axis (Rezun, 1995) (Figure 2-3).

Heinrich Himmler, the *Reichsführer* SS, thought he could use Bosnian Muslim support for the German cause to his advantage and petitioned Hitler in November of 1942 to let him establish a Bosnian Muslim SS division (Tomasevich, 2001) (Figure 2-4). The Nazis also believed they could use the existence of a Muslim SS division as a form of propaganda to counteract the influence of the British and gain the support of Muslims in the Middle East (Redžić, 2005). Recruiting for this special SS division began in 1943 and, under Croatian Ustaše pressure, included a small number of Catholic Croats in addition to Muslims (Tomasevich, 2001). By the end of April 1943, some 12,000 people had joined the Bosnian SS division (Redžić, 2005). 23,200 Muslim and 2,800 Croat soldiers would eventually serve in the division (Tomasevich, 2001). While the division was 60 percent Muslim and around 40 percent German, with a smattering of Croats and Albanians thrown in, around 90 percent of the commanding officers were Yugoslav *Volksdeutsche* (ethnic Germans, such Austrians and Swabians, living in Yugoslavia) and only 10 percent were Muslim; the Non-Commissioned Officers (NCOs) were 50 percent Bosnian and 50 percent German (Redžić, 2005). Following training in
France and Germany, the 13th *Waffen* SS Mountain Division or “Handschar,” engaged in several brutal and bloody battles with the Partisan resistance in eastern and northeastern Bosnia in the winter of 1944, before many of Muslims members of the SS division, recognizing that the tide had turned against the Germans, defected and joined the Ustaše or the Partisan Communists (Tomasevich, 2001).

However, it is worth noting that having a Muslim division of the SS did not prevent the Germans from slaughtering Muslims. For example, in the beginning of July 1943, the Germans shot 31 Muslims near Goradže, 66 in the village of Košutica and 58 in Rotimlja, near Mostar (Redžić, 2005). Nearly all of the victims were women and children and some of them were civilians whose husbands had volunteered for the SS division and the Croatian Home Guard (Redžić, 2005). Thus, despite assurances that their families would be taken care of, volunteering for the SS was not enough to guarantee the safety of one’s family in Yugoslavia under the Reich.

**The Partisan and Chetnik Resistance Movements**

Axis-aligned local military and paramilitary groups engaged in combat with two distinct Partisan resistance groups: the monarchist Yugoslav Army in the Homeland (usually referred to as Chetniks) and the Communism National Liberation Movement (most commonly known as the Partisan Resistance). Though the Partisans and the Chetniks initially tried to collaborate, their fundamentally incommensurate views led to rupture and, eventually, violence (Hehn, 1979). Part of the difference lay in the background and command styles of the leadership. The Chetnik leader, Colonel Draza Mihailovich, was a military bureaucrat who preferred to bide his time and was a staunch supporter of the Serb monarchy and Serbian dominance in the region (Macksey, 1975) (Figure 2-5). Josip Broz, usually known as “Tito,” a man who had run the underground
between France and Spain during the Spanish Civil war, on the other hand, commanded the Communist Partisans. Tito was well versed in the guerilla tactics of irregular warfare and intended to actively engage the Axis in combat in order to bring about a proletarian revolution (Macksey, 1975) (Figure 2-6). Mihailovich was in favor of waiting until the Axis forces had been sufficiently weakened and was therefore not a proponent of direct frontal assaults because he believed that his fighters would simply be engulfed by superior Axis forces and that innocent civilians would pay the price (Hehn, 1979; Djordjević, 1997). The Partisans, on the other hand, embraced a policy of unrelenting struggle to drive out the enemy forces, regardless of the cost (Hehn, 1979) (Figure 2-7). Dragnich (1992) has suggested that the Partisans even went so far as to purposefully leave traces of their activities in communities that were hostile to them to incite reprisals against civilians with no ties to the Partisan Resistance.

After the war, Partisan historians retained the rather cynical view that the only reason that the Chetniks engaged the enemy at all was to ensure that Tito and the Partisan resistance did not receive all of the credit (Hehn, 1979). Mihailovich and the Partisans, for their part, maintained that the Chetniks could not work with the Partisans because they realized that the overarching objective of the Partisans was not to drive out the occupation forces, but rather to establish a Communist dictatorship of the proletariat (Dragnich, 1992). It seems that, at first, the Partisans made their inclinations toward Communism clear, but that they had a difficult time finding support for their vision of a Communist state among the local population (Bodo, 2008). Bodo (2008) suggests that they dropped much of their Soviet-inspired Communist rhetoric during the war and began to focus simply on encouraging the local populace to fight against the
Axis regime. However, Dragnich (1992) has proposed that the Partisans deliberately misled the local population by declaring themselves broadly democratic to actively conceal their true political objectives and to gain support among the Allied Forces, who were initially more invested in the Chetniks. In this endeavor, they were apparently aided by a British intelligence liaison officer who was a member of the Communist party and, as such, passed on reports that were favorable to the Partisans, while withholding information about irregular military actions committed by the Chetniks or reattributing Chetnik activities to the Partisans (Martin, 1990; Dragnich, 1992; Catherwood, 2003).

The animosity between the Chetniks and the Partisans lead to some surprising wartime alliances. While both resistance movements were ostensibly against the Axis occupation, hatred of each other sometimes overwhelmed their shared enmity for the Germans and the Italians. For example, in 1942 the Second Proletariat Brigade in Montenegro joined forces with the Germans, the Ushaše and the Croatian army in order to engage in military actions against the East Bosnian nationalists (Hehn, 1979). However, as Hehn (1979) has noted, collaboration between the Chetniks and enemy forces was a much more frequent occurrence. For example, representatives from Foča accused the NDH of allowing the Chetniks to slaughter nearly 200 Muslims after they were forced to exit a train near Sjetlina (Redžić, 2005). Then again, certain historians have questioned the extent of the collaboration between the Chetniks and the Axis powers. For instance, Dragnich (1992) argues that some of the Chetniks who collaborated with the Italians were not under Mihailovich’s control and were, therefore, acting independently. What is not in question is the fact that Tito’s lieutenant Milovan Djilas and a Partisan delegation were sent to the German headquarters in Zagreb in
March of 1943 to attempt to arrange a cease fire with the Germans (Rezun 1995). The Partisan delegation also offered to form an alliance against the Allies should a large British force attempt an offensive on the Adriatic in exchange for permission to deal with the Chetnik Resistance in whatever way they chose (Djilas 1977; Rezun 1995; Lampe 1996). Hitler and the Nazis rejected the Partisans overtures and no alliance was formed.

**Combating the Partisan and Chetnik Resistance**

Both factions of the Partisan resistance benefited from increasingly exploitive policies in the Balkans. The Serb and Croat puppet states were made to cover the cost of the German occupation, provide the Reich with thousands of foreign workers and allow both the German and Italian governments’ access to all of their natural resources (Bodo, 2008). This type of economic exploitation created debt, which led to severe inflation, leading to a rapid decline in wages, an increase in the price of merchandise and shortages of consumer goods (Bodo, 2008). The economic misery of the Yugoslav community increased the appeal of joining the insurgency, while also making it more costly for the Reich to extract resources from the region.

Though aware of the political and ideological schism, the German High Command, for its part, made no distinctions between the Chetniks and the Partisans and, therefore, did not fully exploit the divisions between the resistance movements in order to further the aims of the occupation (Hehn, 1979). Moreover, the German military leadership was unprepared for the guerilla tactics of the Balkan partisan resistance—so much so that the Wehrmacht High Command lacked a prescribed anti-guerilla policy and therefore the German Balkan command initially simply improvised their methods of retribution (Macksey, 1975). Macksey (1975) has argued that the German solution to the problem of the Resistance was to initiate a policy where three hundred hostages
would be executed for every one German soldier killed. However, other sources suggest that the policy was that one hundred civilian hostages would be executed for every German soldier killed, and fifty hostages would be executed for every German soldier wounded (Shepherd, 2012). In October of 1941, the Germans killed approximately 1700 people in the Serbian town of Kraljevo and 2300 people in the town of Kragujevac in retaliation for earlier joint Chetnik-Partisan raids that had killed thirty and ten German combatants, respectively (Bailey, 1980). The extreme policy of, mostly civilian, executions is likely due to the fact that the Germans became increasingly frustrated with their failing attempts to annihilate the Partisans and that many Germans believed that the majority of the local Yugoslav population was aiding what they perceived to be “rebels” in some way (Shepherd, 2012). Shepherd (2012) has argued that part of the reason the Germans were so unprepared for irregular warfare in the Balkans was that their officers were not trained to combat unconventionally military strategies and that they were also indoctrinated to believe that their superior technology would allow them to rapidly crush any hint of resistance.

Hehn (1979) has further suggested that discord between the operational combat forces who reported to the Oberkommando des Wehrmacht (OKW) and the territorial units of the occupation administration who reported to the Oberkommando des Heeres (OKH) created problems in the region because the OKW was far more ruthless than the OKH. The power struggle between the OKW and OKH was exacerbated by political infighting in the German occupation administration and by continuing conflict between the Italians and the Germans over the Ushaše government, a government that the
Italians had initially supported, but later rejected, which made it difficult to consolidate authority and coordinate attacks against the guerillas (Hehn, 1979).

While a post in the Balkans theater—often consisted a rear area—had originally be seen as middling post that was preferable to being stationed in Russia or North Africa, but less desirable than an assignment in France or the Low Countries, by 1943 newly appointed Balkan commander, General Lothar Rendulic reported that 1,000 soldiers serving in the Balkans had requested a transfer to any other front (Hehn, 1979).

One in every seven soldiers in German uniform, whether German or not, was killed while fighting on the southeastern front (Hehn, 1979). However, it seems to be the savagery of the Partisans and the difficulty of irregular warfare that flummoxed the Axis and made so many German soldiers want to leave (Hehn, 1979; Shepherd, 2012).

Moreover, Hitler’s overconfidence that he had beaten the Yugoslavs into submission meant that, initially, only eight German divisions, ten Italian divisions and a few elements of the Bulgarian and Hungarian corps were left to defend all of Yugoslavia, Albania and Greece from all forms of resistance (Macksey, 1975; Buchner, 1991).¹

Though Italian, Hungarian and Bulgarian forces were stationed in the Balkan region throughout the early- to mid-1940s, most of the occupation forces in Yugoslavia were German (Hentea, 2006). The fact that the OKW treated the southeastern front as a rear position also meant that many of the men who served in the region were not particularly well trained, that many of them were either very young or over-age and that they were often undersupplied (Hehn, 1979; Shepherd, 2012).

¹ For a more complete list of German military units that fought in the Balkans during WWII see the Appendix.
Though the Germans stationed in Yugoslavia engaged in various forms of reprisal and hostage taking, the bloodlust of the Ustaše was far worse (Figure 2-8). Initially, Pavelić declared that the Serbs were no longer allowed free movement throughout the NDH, that they were required to wear a blue armband with the letter “P” for Pravoslavac (Orthodox), that they could no longer use Cyrillic script and that Orthodox schools were to be closed (Rezun, 1995). Official Croat policies dictated that one third of Serbs should be exiled, one-third converted to Catholicism and one-third killed (Hentea, 2006) (Figures 2-9 and 2-10). However, the Ustaše killed so many Serbs that the Germans had to bring in troops and heavy equipment to defend the local populace (Hentea, 2006). Italian field commanders filed reports indicating that they were nearing the end of their patience with Ustaše violence against Serb women and children and they asked Mussolini to alter his order of nonaggression in the NDH so that they could defend the civilians who begged for their help on a daily basis (Burgwyn, 2005). Serb men, women and children were sent to death camps, shot on the spot, thrown wounded, but still alive, into ravines and set on fire in their own churches (Dragnich, 1992). Various military commanders, particularly after 1943, warned the Nazi regime against continued support of the Ustaše because they recognized that the use of torture, the imposition of high levies, the burning of people’s homes, the widespread execution of civilians and the conveyance of women and children to concentration camps was driving the local population into the arms of the resistance (Bodo, 2008).

**Wehrmacht Divisions Stationed in the Balkans**

Beginning at the end of the initial invasion, the 704th, 714th, 717th and 718th Infantry Divisions served in Yugoslavia as Wehrmacht security divisions (Shepherd, 2009). As designated security divisions, the 704th, 714th, 717th, and 718th Infantry
Divisions contained a large proportion of troops over the age of 30, who were often inferiorly trained in comparison to front line infantry divisions (Shepherd, 2009). This situation did not improve significantly even after these divisions were upgraded to Jäger divisions in 1943 and more young men joined the ranks (Shepherd, 2009).

However, according to Shepherd (2009), these Wehrmacht divisions were still superior when compared to the 369th Infantry Division, which suffered from poor training and discipline, high rates of desertion, and a serious lack of morale. One of the major contrasts between the 300 divisions versus the 700 divisions can also be seen in regard to the rates of their own causalities in comparison to those of the enemy. Between January and February of 1943, the 369th reported that they had a loss of 36 men and 834 reported Partisan kills, while the 718th recorded a loss of 38 men and 204 reported Partisan kills for the entirety of 1943 (Shepherd, 2009). Shepherd has proposed that the differences in brutality might be linked to the fact that the 700 divisions had been in the region longer and knew that the killing of civilians, regardless of whether they were Partisan supporters or not, would not aid them in the region. Additionally, the commanding officers in the 369th and 373rd Divisions were Austrians who had served on the Eastern Front during WWI and were predisposed to detest Slavs based on their past experiences (Shepherd, 2009). The 369th and 373rd divisions, who were new to the region, may also have killed more supposed Partisans because they were relative novices when it came to irregular warfare and frustrated by their inability to combat their opponents successfully.

The 369th, 373rd and 392nd Infantry divisions were theoretically Croat legionnaire divisions. However, Tomasevich (2001) maintains that though they initially
encompassed a mixture of Croatian soldiers and German officers and specialists, they
were mainly comprised of German soldiers by the war’s end. The 369th Infantry spent
almost the entirety of its military service stationed in various parts of Bosnia and
Croatia. One of the more notable things about the 369th Infantry is that they were
stationed in Mostar for an entire year in 1944. This is of significance because the
remains under investigation in this thesis are thought to have been buried in
Herzegovina and Mostar is the capital of Herzegovina-Neretva Canton. The 369th
Infantry is also notable because the Partisans famously executed its members after they
surrendered to the British at Bleiberg in May of 1945.

It is also worth noting that Croat volunteer units wore standard German issue
military uniforms and insignia. The only difference between Croat volunteer units and
German troops was that the Croats wore their own checkerboard arm shield rather than
a German insignia.

The 7th SS Division was a *Volksdeutsche* volunteer division that also fought
primarily in Yugoslavia. Though theoretically volunteer, the Germans had trouble filling
the division and therefore began to conscript the *Volksdeutsche* of Yugoslavia into the
7th SS Mountain Division, commonly known as “Prinz Eugen” (Tomasevich, 2001). The
7th SS Mountain Division also saw active combat in Mostar. Additionally, both the 717th
and 718th Infantry divisions were involved in protecting the important bauxite mines
around Prozor and Mostar.

The 369th and the 7th SS Division were initially brought into the Balkans to help
coordinate Operation Weiss, a German offensive that took place in parts of the Italian
Zone, which had the goal of expelling the Partisans from a liberated zone they had
created in the center of the NDH (Tomasevich, 2001) (Figure 2-11). The 369th and the 7th SS Divisions joined the 714th, 717th and 718th Infantry Divisions in an attempt to fully rid the NDH of the Partisans for good. The joint German, Italian, Croat and Chetik attack on the Partisan liberated area included a series of skirmishes between the Axis military, the Chetniks and the Partisans in eastern Herzegovina and southeast Bosnia, known as Weiss Mostar. These actions were followed by another offensive, Operation Schwarz, a large scale offensive involving around 100,000 Axis troops, which took place in May through June of 1943, mostly in the far southern NHD and Montenegro (Tomasevich, 2001; Kurapovna, 2010). Following these actions, according to German military records, the 2nd Panzer Army XV Mountain Corps Army Group F was stationed in Sarajevo from September through November of 1943.

Yugoslavia after WWII: Official Discourse and Collective Memory

Although around 11% of the Yugoslav population was killed in the Second World War, during the Communist period the Titoist government attempted to reconcile the fractured nation by suppressing discussions of large-scale fratricide (Dragnich, 1992; Oberschall, 2000; Shepherd, 2012). During Tito’s Socialist regime, the official history of WWII became one of epic struggle between Partisan Anti-Fascists and the Nazis, in which all anti-communists, regardless of their participation in the war, were labeled as collaborators (Bennett, 1994). To this end, this meant that Yugoslav historians refrained from commenting on the atrocities that were committed by various ethnic groups during the war or they ascribed genocidal activities as the work of the Axis invaders and their fascist supporters (Adeli, 2009). Moreover, all aspects of the press were controlled by the Socialist regime, meaning that discussions of wartime atrocities or continuing animosity between ethnic communities went unreported in the press (Dragnich, 1992).
Bergholz (2010) has further suggested that part of the Socialist framing of WWII allowed the Socialist government to remain silent and avoid implicating people who became Partisan fighters in war crimes. The official narrative also omitted the annihilation and expulsion of around 500,000 ethnic Germans and Hungarians from the new state of Yugoslavia after Tito seized power at the conclusion of the war (Sunic, 1995). The Socialist government’s policy also included a government prohibition on the excavation of mass graves and reburial according to traditional burial rites and customs (Denich, 2000). Thus, the official constructed memory became a memory of resistance, of fighting back against Fascism (Denich, 1994).

While overt displays of national or ethnic prejudice were forbidden, on the local level antagonism between neighbors remained due to what had transpired during the war (Bax, 1997). While the state mandated institutional memory may have been one of heroism in the face of oppression, the local collective memory was one of national and ethnic injustice. Reframing the conflict as Fascist vs. Anti-Fascist rather than as a civil war, encouraged members of the Balkan community to pass down alternative oral histories of WWII to younger generations and injustices and open wounds were allowed to fester for many years after the conflict ended (Bennett, 1994).

These memories of reprisal and mass death carried over through the years, continuously reasserting the importance of the past in the present. The fact that little effort was made to deal with them by the Communist government made it possible for nationalists to seize on the places where memory had left traces, such as mass graves and monuments, in order to inflame hatred against one’s neighbors (Nora, 1989; Denich, 1994; Bax, 1997; Verdery, 1999; Oberschall, 2000). Part of the justification for
the 1992 Bosnian war focused on the narrative that one’s particular nationalist/ethnic group had been subject to grave wrongs during WWII (Denich, 1994; Denitch, 1994, Denich, 2000).

The Memory of WWII in Germany

East Germany

Black (2010) suggests that, prior to the erection of the Berlin Wall, which officially restricted the movements of citizens in East and West Berlin, the burial practices and the treatment of the war dead in eastern and western parts of the city were used to illustrate the divisions that existed between the Federal Republic of Germany (FGR) and the German Democratic Republic (GDR). In East Berlin, the Soviet Communist regime buried their dead in grand collective memorials in places like Treptow Park and at Unter den Linden, while ignoring the commemoration of German fallen soldiers whom they regarded as a militaristic, Fascist instrument of the Nazi state, a state that had persecuted communists from the moment Hitler became chancellor in 1933 (Black, 2010; Spielvogel and Redles, 2013).

However, to combat West German rumors that the Soviets were desecrating the remains of the dead, the Communist government built an official cemetery at Halbe, a forested area outside of Berlin, which was the site of a major battle between the Germans and the Red Army in late April 1945 (Black, 2010). The Communist government made little attempt to adhere to the traditional German practice of keeping up the graves in the Halbe cemetery and state officials removed any and all family tokens commemorating the dead, including flowers (Lüdtke, 1997; Black, 2010). Through these practices, Communist officials attempted to persuade individuals in the East to abandon long-held German grave tending traditions; they were unsuccessful in
this endeavor and local people continued to subvert communist authority by tending to the graves of the war dead (Black, 2010).

The remains of German civilians who had the misfortune to die during the war in what became the East German zone fared no better than the soldiers. While Russian style Kurgen monuments towered over the landscape, reorienting the field of vision of passers-by, the remains of regular German civilians in villages like Kunersdorf remained unmarked as late as 1989, their bones slowly eroding out of the ground (Lüdtke, 1997).

Additionally, in East Germany after the war, a distinction was made between the Communist freedom fighters who had actively resisted the Nazis and everyone else (Herf, 1997; Kattago, 2001). East German communist memorials commemorating the war dead were usually inscribed with the simple words “to the victims of Fascism,” with no reference made as to who those victims were and why they had been persecuted in the first place (Meng, 2011). The focus on communist resistance and suffering during WWII provided a way for the Communist government of the GDR to utilize the Nazis defeat at the hands of the Soviet Union as a way of legitimating the substitution of Nazi totalitarianism with Communist totalitarianism (Herf, 1997; Kattago, 2001). Herf (1997) has suggested that, apart from the glorification of their Communist comrades, the lack of recognition for Jewish suffering stemmed from pre-existing anti-Semitism and a desire not to pay reparations to the Jews.

**West Germany**

In West Germany, attitudes toward those who died in WWII were significantly different. West Berliners made no distinctions between the death of soldiers and the deaths of civilians, suggesting they were all victims of the war (Black, 2010). Battles raged over makeshift cemeteries that had been hastily created in 1944 and 1945 as
Allied air attacks increased and the Red Army overran parts of the Nazi state (Margalit, 2007; Black, 2010). While many Berliners were opposed to disturbing the remains of the dead, many of whom had already been reburied several times, the government and German business were anxious to remove cemeteries that were impeding the rebuilding and remaking of the city (Black, 2010).

The emphasis on progress and rebuilding characterized West Germany during the immediate post-war period. Black (2010) has argued that establishing laws regarding graves and creating official cemeteries for the dead allowed the citizens of West Germany to reassert control over their lives after the horrors of mass death. The heroic image of Trümmerfrauen (rubble women) removing detritus in an effort to clean up German cities became an iconic image in West Germany (Eghigian and Betts, 2003). However, this image of progress and rebuilding also pushed aside more troubling questions related to German complicity with Nazi crimes (Eghigian and Betts, 2003).

The idea of German victimhood, particularly in West Germany, began to take hold at the conclusion of the war and was a quite prominent notion in the 1950s and early 1960s (Niven, 2002; Moeller, 2006a). The rigorous American de-Nazification program and the Nuremburg trials left many West Germans feelings resentful and as though they were the victims of a hypocritical victor’s justice (Herf, 1997; Niven, 2002; Streim, 2007). As German soldiers and expellees returned from the East, bringing with them terrible tales of Soviet brutality, West Germans began to craft a narrative in which ordinary Germans were the victims of Hitler and the Nazi party (Moeller, 2006a; Wittlinger, 2006; Salzborn, 2007).
The German tradition of valorizing soldiers, a position that had been seized upon by the Nazi regime as a means of glorifying death in service to one’s country, continued, although with a more muted tone, after the conclusion of hostilities (Mosse, 1978; 1990). German portraits of *Wehrmacht* soldiers, particularly in 1950s film, often portrayed them as humble, idealistic young men who became disillusioned with the war, but continued carrying out onerous tasks out of a sense of honor and duty to their fellow soldiers (Moeller, 2006a; Wolfenden, 2007). Films, such as *Der Arzt von Stalingrad* (*The Doctor of Stalingrad*), were also designed to illustrate the suffering of *Wehrmacht* soldiers at the hands of the Red Army in order to reaffirm the narrative of the strength of German soldiers and perpetuate anti-Communist sentiment (Wolfenden, 2007). These war movies reinforced the idea of noble German victimization by making obvious distinctions between the valiant, good-hearted enlisted German soldiers whose sense of honor and love for their comrades kept them from questioning the orders of bad Nazi commanding officers (Moeller, 2006b).

These kinds of portraits also separated the memory of ordinary soldiers from Hitler and the Nazi party in order to victimize those who carried out the Nazi’s barbaric orders (Margalit, 2010). An interesting point about earlier post-War memorialization of soldiers is that the collective term “The German Soldier” makes no distinction between soldiers who served in the *Wehrmacht* and those who served in the Nazi party aligned Waffen-SS, thus eschewing uncomfortable questions about adherence to Nazi ideology and participation in Nazi crime (Margalit, 2010).

The Cold War and the revitalization of the West German economy also played a significant role in regard to the memory of the Nazi past. As hostilities between the
United States and the Soviet Union intensified during the 1950s, the United States sought an alliance with West Germany and they were willing to suspend the de-Nazification program and to free jailed members of the Nazi party in order to ensure West German cooperation (Niven, 2002; Jacobsen, 2014). The Conservative political argument that overemphasizing the memory of the Nazi past, particularly as it pertained to atrocities committees in the East, would weaken the West German will to resist Soviet pressure also provided a convenient reason to neglect the terrible crimes committed by the Nazi regime (Herf, 1997). West Germany also used the loss of the East German zone, mistreatment of the war dead and the rape of German women by the Red Army as Cold War political weapons (Berger, 2006; Black, 2010). The political climate likely explains why Chancellor Konrad Adenauer pursued the issue of restitution for the suffering of European Jewry, but made little effort to ensure that swift justice was served in regard to those responsible for the Holocaust (Herf, 1997).

Beginning in the 1960s, a generational change in political elites and an increasingly democratic, liberal and pluralistic political culture made the development of a more critical public possible (Wittlinger, 2006). Wittlinger (2006) proposed that Social Democratic Party (SPD) politician Egon Bahr’s articulation of “change through reapproachment,” which advocated a change in policy aimed at improving relations with the East, was indicative of the changes in foreign and domestic policy that paved the way for a more open dialog about German culpability related to atrocities committed during WWII. Additionally, the highly publicized trials of Adolf Eichmann in 1961 and the Auschwitz trials in 1963 and 1965 increased German public awareness of the extent of Nazi barbarism and generated more interest into the recognition of German guilt
(Wittlinger, 2006). The 68er student protests which condemned the Nazi complicity of their parent’s generation, also contributed to changing attitudes about the nature of the Nazi past (Niven, 2006).

Though discussions of West German guilt began in the 1960s, the idea of the recognition of German guilt became institutionalized during the chancellorship of Willy Brandt in the 1970s (Wittlinger, 2006). In 1970, Chancellor Brandt signaled a change in the handling of national responsibility and conciliation for WWII oppression and the Holocaust when he knelt in front of Rapoport’s Warsaw Ghetto Monument (Niven, 2002). The propriety of Brandt’s actions was questioned in the widely circulating news magazine *Der Spiegel* whose cover included a picture of Brandt along with the headline “Should Brandt have Kneeled?” (Young, 1993). The 1970s also saw the first public West German commemoration of May 8th which marked the end of WWII in Europe and the first wide spread commemorations of the Holocaust and November 9th, 1938 better known as *Kristallnacht* (Wittlinger, 2006).

**Reunification and Debates over Guilt and Victimization**

Remembrance of the Nazi past encountered a new collection of problems with the reunification of Germany in 1990. While Chancellor Helmut Kohl and the conservative Christian Democratic Union (CDU)/Free Democratic Party (FDP) had taken a harder line toward the GDR and the Soviet Union in 1980s, this conservative stance would have to be rethought (Niven, 2006). Reunification also meant that the East Germans could no longer define themselves in opposition to their once Fascist and now capitalist neighbors (Kattago, 2001).

After the reunification in 1990, a series of controversial debates erupted throughout Germany regarding the legacy and memory of the Nazi past. In 1993,
Chancellor Kohl’s decision to establish the *Neue Wache* guard house, a World War I memorial in the former GDR, as a central memorial site, sparked controversy because its new inscription—“To the victims of war and the rule of violence”—which was meant to include the victims of all German wars and communist totalitarianism, made no distinction between perpetrators and victims (Beattie, 2006). Though the memorial’s conflation of the innocent and the guilty angered Jews, intellectuals and other victims of Nazi totalitarianism, the *Neue Wache*, complete with the same inscription still functions as a memorial to the German people (Kattago, 2001).

The commemoration of German soldiers and their position with respect to carrying out Hitler’s Final Solution was challenged in March of 1995 with the opening of the Hamburg Institute’s traveling exhibit *Crimes of the German Wehrmacht: Dimensions of a War of Annihilation, 1941-1944* (Berger, 2006). While 1950’s cinema, historians and popular culture may have depicted Wehrmacht soldiers as good-hearted, ordinary men who were simply following orders, the Institute’s exhibit depicted graphic images of Wehrmacht soldiers colluding with the SS, SD and Gestapo and participating in active and passive acts of genocide against civilians along the Eastern Front (Wildt et al., 2004; Berger, 2006). The exhibit also displayed military orders that clearly indicated that the Wehrmacht commanding officers, acting on Hitler’s behalf, had directly involved the military in the annihilation campaign and subverted The Hague Conventions regarding the humane treatment of civilians and prisoners of war (POWs) (Wildt et al., 2004). While the SS and SD did the majority of the actual killing, the photographs and documents indicated that many of these atrocities were conducting with Wehrmacht support and coordination (Niven, 2002).
While the inhumane treatment of enemies, such as Red Army soldiers, had been documented before, it was the widespread number of people who went to see the exhibit as it traveled throughout Germany and the controversy surrounding the images that allowed the exhibit to be as effective as it was (Niven, 2002; Wolfenden, 2007). The narrative of collusion and complicity in atrocities dismantled the institutional memory of the suffering of valiant German soldiers and replaced it with the more complicated current picture of the Wehrmacht’s wartime role in regard to both the protection of German soldiers and collaboration in atrocities that had previously been attributed to the Nazi government, the SS and the SD.

The exhibit engendered debate along predictable political lines; the political left supported the exhibit, while the Christian Social Union (CSU) and the CDU condemned the exhibit’s depiction of the Wehrmacht as one sided, Communist slander aimed at causing generational division among the German people (Niven, 2002). Meanwhile, there were massive protests and counter protests involving neo-Nazi and anti-fascist groups, several of which turned violent (Niven, 2002). While the reactions to the Wehrmacht exhibit were often extreme, they encouraged cross-generational dialog regarding the events of the war, they dismantled the pervasive “following orders” Wehrmacht myth and, akin to the Goldhagen debate, they also enhanced German awareness of the brutality of ordinary Germans during WWII (Niven, 2002; Berger, 2006).

In August 1996, Daniel Jonah Goldhagen’s doctoral dissertation, Hitler’s Willing Executioners: Ordinary Germans and the Holocaust was published in Germany (Niven, 2002). Though Goldhagen’s book became a bestseller in Germany, Goldhagen’s
provocative claim that Hitler’s premeditated intention to murder Europe’s Jews was shared by the German people via a virulent inherent historical tradition of anti-Semitism was resoundingly rejected by American, German and British historians, as well as politicians on both the political right and political left in Germany (Niven, 2002). While German historians decried Goldhagen’s book, Niven (2002) has argued that public support for Goldhagen in Germany served a useful purpose because it increased German awareness of the fact that Jews and other victims were murdered by ordinary people and indicated that the German public was willing to embrace a book that was highly critical of the German nation.

In 1998, Martin Walser used his acceptance speech for the Peace Prize of the German Book Trade to argue against public forums of rhetorical accusation that continually refer to Germany’s disgrace (Schmitz, 2006). Echoing Ernst Nolte’s Historian’s Debate accusation that the intellectual leftist opinion-machine utilized hegemonic images of Auschwitz to continually shame Germany, Walser argued that Germans should be subject only to the privacy of conscience because one’s private conscience is not representable and therefore cannot be instrumentalized (Schmitz, 2006). Walser suggested that the ritualization of images of Nazi atrocities in order to provoke proper feelings of guilt and shame could lead to false public displays of conscience and therefore it was simply better to let one rely on one’s own individual conscience (Niven, 2002). Ignatz Bubois, then President of the Central Council of German Jews, denounced Walser’s remarks as tantamount to suggesting that the German public should no longer have to confront the atrocities they had committed in the past (Schmitz, 2006). Schmitz (2007) has suggested that Walser and Bubois’
debate regarding authenticity and remembrance as private or family conscience versus remembrance as public discourse is indicative of a larger on-going debate in Germany related to the divergence of public and private memory concerning the German Nazi period.

While reunified Germany has, for the most part, engaged in healthy debates that have allowed it to recognize and come to terms with its Nazi history, there is still a tendency to view the Nazi and Fascist past from a German perpetrator perspective (Bartov, 2007). In his 2007 book, Bartov noted that while the German university Holocaust seminars he observed took the subject very seriously, all of the lectures, written work and readings were solely focused on what German perpetrators had done to their victims rather than what the victims had experienced. When Bartov (2007) queried professors and students about the lack of social context related to the Holocausts victims, he was told that the Nazis had dehumanized their victims to the point that they no longer retained any humanity—the point being that contemporary students need not know anything about the circumstances of the victims because it was of no importance to the perpetrators. However, the construction of “dehumanized” victim and “inhuman” perpetrator is a shallow dichotomy that fails to acknowledge the fact that German human beings killed other human beings (untermenschen or sub-humans) who, in a situation similar to that of Yugoslavia in the 1990s, under previous circumstances had been neighbors, acquaintances and possibly even friends or loved ones (Bartov, 2007:xii).

Though the Germans have done an admirable job of confronting the past, victimhood narratives, which highlight the massive bombings in Hamburg and Dresden,
the mass expulsion of the *Volksdeutsche* and the suffering and death of around 2 million people at the hands of the advancing Russian army, still allow certain members of the German community to cast themselves as victims (Niven, 2002).

**The Volksbund Deutsche Kriegsgräberfürsorge: Germany’s War Graves Commission**

If isotope analysis suggests the remains are fallen German soldiers, they would most likely fall under the purview of the *Volksbund Deutsche Kriegsgräberfürsorge* (the *Volksbund*), the private German organization that works in concert with the German government to identify and commemorate the remains of German soldiers who perished in past conflicts abroad. As part of their identification process the *Volksbund* collaborates with *Deutsche Dienstelle* (WAST), the German organization that uses historical records to help identify which German combatants are buried at which locations. For example, the WAST may conserve and analyze German WWII identification tags from mass burial sites in order to match the serial number on the tag with the identity of an individual listed as missing or killed in action during the war. Once the identification is made, the *Volksbund* utilizes the historical materials at their disposal to try to identify the military units involved.

However, the commemorative work that the *Volksbund* does is not without controversy. Despite the *Volksbund* motto “Reconciliation over the Graves,” Livingstone (2009) has argued that the right-wing ideology upon which the *Volksbund* was founded has created a situation in which the organization’s practices have, on the one hand, provided closure for many German families, while at the same time demonstrating remarkable insensitivity to Nazi victims. Livingstone (2009:71) suggests that the fact that the staff of the *Volksbund* contained a number of ex-soldiers, including members of
the *Waffen SS*, led to the construction of memorials in the 1950s and 60s that neutralize the relationship between the military and Nazism and perpetuates the myth that “the majority of those who fought for Hitler were blameless for his crimes.”

The strength of the conservative rhetoric of the *Volksbund* is often tied to the ideological leanings of the ruling party in Germany. In 1969 when Willy Brandt and the Social Democratic Party (SDP) came to power, the *Volksbund* became more progressive, displaying more sensitivity to the views and historical memory of the foreign countries where German WWII cemeteries were located and creating a summer service program for German teens that allows them to aid in the maintenance of foreign cemeteries and forge relationships with foreign communities (Livingstone, 2009; Knittel, 2015). However, the *Volksbund* returned to the German victim narrative after Helmut Kohl and the Christian Democratic Union (CDU) returned to power in 1982 (Niven, 2002; Livingstone, 2009). This kind of exoneration for the common soldiers of Germany, along with the identifications and memorialization that the *Volksbund* provides does, unquestionably, brings closure to families who lost loved ones in the war, but it also perpetuates a narrative of German victimhood that, perhaps sometimes unwittingly, erases the suffering of German victims.

Additionally, *Volksbund* insensitivity and a continuing veneration of German soldiers at the expense of Nazi victims has led to protest and strained relations with other countries. In the late 1960s, the French took issue with the *Volksbund* for building ostentatious memorials to its fallen soldiers within close proximity to French towns (Avril, 2007). In 1985, protests erupted across West Germany and the United States when U.S. President Ronald Reagan made a short speech at the WWII cemetery in
Bitburg, a cemetery where a handful of the buried soldiers were known members of the Waffen-SS (Niven, 2002). That Reagan’s speech depicted *Wehrmacht* soldiers as victims of Nazi ideology lead to outrage among West German leftists, Jews, intellectuals and US veterans who were appalled that the president would give a sympathetic speech in a cemetery where at least one of the soldiers had received a commendation for killing American servicemen (Niven, 2002). In the late 1980s, there were protests at the *Volksbund* cemetery in Costermano, Italy because three of the names inscribed in the book of honor at the memorial—Christian Wirth, Franz Reichleitner and Gottfried Schwarz—belonged to the architects of the Nazi euthanasia program (*T4: Aktion Reinhard*) (Knittel, 2015). One of these men, Christian Wirth, also served as the commandant at the Treblinka, Belzec and Sobibor extermination camps (Livingstone, 2009). In 1997, there were protests in Germany when the *Volksbund* chose to erect memorial poles at Buchenwald concentration camp to commemorate the Germans, many of them low-level Nazi functionaries, who died there when the camp was under Soviet control after the war (Niven, 2002). Local Poles protested at the *Volksbund* cemetery in Nadolice after they learned SS guards from Auschwitz were buried there and the construction of the *Volksbund* cemetery near Tirana was suspended when Albanians complained that the cemetery was too close to the Partisans memorial (Livingstone, 2009). There have also been protests in Israel and the Czech Republic (Livingstone, 2009).

Russian reactions to *Volksbund* cemeteries have been more mixed. While some younger Russians appreciate the *Volksbund* efforts to foster cooperation and the money that the *Volksbund* has invested in the local economy, many older Russians are
offended by the cemeteries (Siegl, 2008). Volksbund officials have also publically discussed the “massive resentment” Volksbund representatives sometimes receive by local people in places like Poland and Russia due to the devastation that the Germans caused during the war (Crossland, 2012). When I asked someone at the Volksbund for clarification about commemorating men who had committed serious crimes, I was told that the dead were dead and that they could not hurt anyone anymore. This suggests that all dead men should be treated the same, regardless of their past histories.

**The Memory of the War in Austria**

Austria has utilized its annexation in 1938 as a means of mythologizing the past. As the first nation invaded by the Nazi State, the narrative that Austria was “Hitler’s first victim” allowed the nation to suppress and/or ignore any introspection about its own wartime culpability (Bischof, 2008:364). Keyserlingk (1988) has suggested that part of this narrative stems from the fact that the Moscow Declaration of 1943 allowed the Allies to propose that the German occupation of Austria was invalid and that the return of a free and independent Austria was highly desirable. The idea that the Allies believed that Austria was being forcibly occupied and subjugated by the Germans, allowed the Austrians to utilize the same argument to eschew moral and legal responsibility for atrocities committed by the Nazi State (Keyserlingk, 1988). Thus, Austria could blame morally reprehensible actions on external influence or the actions of a certain known Nazi collaborators.

However, this notion ignores the fact that after the conclusion of the First World War, many people in Austria sought an Anschluss with Germany and that this union between the two nations had to be specifically forbidden by the League of Nations (Keyserlingk, 1988). For example, in 1928 approximate two-thirds of the national
parliament signed a petition that favored the *Anschluss* with German and politicians of all stripes seem to have embraced the idea of the *Anschluss*, if not the reality of it (Judt, 1992; Keyserlingk, 1988). Therefore, the idea that the Germans were hated occupiers in Austria, while convenient for avoiding Nazi culpability, does not seem to have been shared by many Austrians during Austria’s annexation.

Additionally, 1.3 million Austrians served in the *Wehrmacht* and Austrian military officials, such as Adolf Eichmann, were overrepresented in the planning and execution of the Holocaust (Bischof, 2008). Hitler himself was Austrian rather than German. Many of the military officers in the Balkans were ethnic Austrians and their contempt for Slavs, coupled with their resentment over Serbian involvement in World War I, led to particularly intense brutality against civilians in the Balkan Region during WWII (Shepherd, 2012). Many Eastern Europeans ended up in the Austrian concentration camp system that arose around Mauthausen, which utilized forced and slave labor and employed gas chambers to exterminate those who had become too weak or ill to continue working (Bischof, 2008).

Discussions of Austrian culpability remained dormant until the mid-1980s when Kurt Waldheim was elected president. Waldheim had been a member of the SA and served in the *Wehrmacht* during the Second World War. Waldheim had been stationed in the Balkans and been decorated for his participation in Operation Kozara, an Axis offensive centered around Kozara Mountain in Northwest Bosnia. The Waldheim Affair, as it is commonly known, forced Austria to address the fact that it continued to maintain a narrative of victimhood that accepted little to no responsibility for its participation in wartime genocide. Waldheim, for his part, maintained that he knew little about the
atrocities being committed all around him in the Balkans, had never witnessed any of acts of genocides and that he was simply following orders (Kuchinsky, 2007). Prominent Waldheim supporters maintained a nationalist (and sometimes anti-Semitic) narrative absolving Austria from any wartime acts that might require contrition, while arguing that Austria was the victim of internation smear campaign (Wüstenberg and Art, 2008).

While the Waldheim Affair did encourage Austria to take responsibility for its Nazi past, Manoschek (2002) suggests that Austria’s commitment to engaging with its wartime culpability was seriously questioned again in 2000, when the Freiheitliche Partei Österreichs (FPÖ), a party created by former Nazi functionaries that has continuously downplayed Austria’s involvement in the darker aspects of the war, won 26.5% of the vote and formed a coalition government with the Österreichische Volkspartei (ÖVP), Austria’s Christian conservative party. The coalition government was widely condemned by other EU member nations and world leaders, such as the United States, and signaled to other nations that Austria was not serious about confronting its Nazi ties (Manoschek, 2002).

The Memory of the Nazi Past in Italy

Italy, like Germany and Austria, has a muddled historical past to confront. However, unlike Germany, the Italian position is complicated because the Italians altered their alliances during the war. The Italians began the war as a seminal part of the Axis, but became a member of the Allies after Mussolini was deposed in September of 1943. The Italians contrasted themselves with the Germans, creating a narrative in which invading Italian soldiers tried to treat the local population kindly, despite the dictates of the cruel and fanatical Germans (Focardi and Klinkhammer, 2004). In a situation similar to the Germans, they also highlighted the crimes committed against
civilians and Axis soldiers by the Allies as a means of suggesting that the idea that these foreign governments could try their civilians was hypocritical and unfair (Focardi and Klinkhammer, 2004). In the end, this type of thinking led the Italian government not to prosecute any of their own civilians for war crimes (Focardi and Klinkhammer, 2004; Higgins 2013). Moreover, like post-war Germany, many of the people in key government, business, academic and industrial post-war positions were individuals with connections to Mussolini’s Fascist government and therefore it was in their best interests not to look too closely when it came to accusations of war crimes (Higgins, 2013).

The fact that Italy switched sides and that its citizens endured nine months of terror under German occupation allowed the new Italy that emerged after the war to cast itself primarily as a community of Partisan resistance (Higgins, 2013). Even as fascist monuments to Mussolini remained (and still remain), Rome was redefined as a city of suffering and defiance (Higgins, 2013). Like German war movies of the 1950’s, certain Italian films, such as Rosselini’s Roma Città Asperta (Rome City of Hope), created an image of ordinary Italians had never fully embraced Mussolini and that Fascist oppression and German occupation had led to the victimization and suffering of Italian citizens and, ultimately, to heroic resistance (Painter, 2005). As Higgins (2013) notes, the WWII memorial plaques and statues found throughout Rome are dedicated to resistance fighters, anti-Fascists and, most of all to the victims of the nine months in which Italian was occupied by the Germans in 1943 and 1944; there are no monuments commemorating the sacrifices of the Italian military.
The Italians also hold an unusual position in the Balkans because they both murdered and protected members of Yugoslavia’s ethic communities. Mussolini and his Fascist government paved the way for the Ustaše, whose bloody government murdered thousands upon thousands of Yugoslavs, and certain Italian factions encouraged marauding bands of Chetniks to murder Muslims (Hehn, 1979; Dragnich, 1992; Burgwyn, 2006). In 1942, the underground anti-Fascist press was already documenting the atrocities committed by Italian troops against the local Yugoslav population (Focardi and Klinkhammer, 2004). These reports indicated that the Italian military had set fire to houses and villages, murdered women and children, committed rape and involved themselves in a host of other crimes (Focardi and Klinkhammer, 2004).

However, many Italian soldiers were appalled by the persecution of innocent civilians in the Balkans and even though the Italian military was told not to meddle in Croat affairs, they risked their lives to protect Balkan Serbs (Rezun, 1995; Burgwyn, 2006). Thus, the Italian zone became a safe haven for Serbs fleeing persecution and likely annihilation in other parts of the Balkans.

However, toward the conclusion of the war, officials from the Italian government blocked requests from Tito and the new Yugoslav government to extradite known Italian war criminals to Yugoslavia so that they could stand trial (Focardi and Klinkhammer, 2004). Though some individuals were arrested by the Italian government for crimes committed against Croat civilians, the intervention of the Chief of State and the War Minister ensured that all of these suspected war criminals were swiftly released (Focardi and Klinkhammer, 2004). Some of the Italian officers accused of war crimes even went so far as to write self-serving, revisionist memoirs in which they placed all of the blame
for the death of Yugoslav civilians on Tito and the Partisans (Forardi and Klinkhammer, 2004).

Yet, the Pope, the leader of the Catholic Church, never condemned the genocidal actions of the leaders of the NDH. Though the Pope is thought by many to have had a hand in saving the Allies from sacking Rome, he never spoke out against the atrocities being committed by members of his flock (Higgins, 2013). Citing Falconi (1965), Rezun (1995) argues that Italy and Croatia share a common frontier, making it unlikely that the Pope was unaware of the atrocities being committed by the Ushaše. It is possible that the Pope could have used his influence with the overwhelmingly Catholic Croat population as a means of attempting to stop the genocide. However, the Pope took no action at all. Rezun (1995) has suggested that the Pope’s anti-Semitic, anti-Communist and anti-Orthodox positions may have played a role in his inaction. Regardless of his motivations, the fact remains that the Pope did not speak out to quell the violence occurring in the Balkans.
Figure 2-1. US Army Map of Operation 25, the initial Axis Invasion of Yugoslavia, April 1941. This map was first published in November 1953 between pages 48 and 49 of the Department of the Army Pamphlet No. 20-260 Historical Study *The German Campaigns in the Balkans* (Spring 1941). Map Courtesy of the United States Military, reprinted from a public domain site.
Figure 2-2. The 1941 Axis Partitioning and Annexation of Yugoslavia during World War II. CC-BY-DIREKTOR.
Figure 2-3. Amin al-Husayni, the Grand Mufti of Jerusalem, greets the 13th Waffen SS Mountain Division during a visit to Germany in November, 1943. *Bundesarchiv, Bild 146-1980-036-05 / Unknown / CC-BY-SA 3.0.*
Figure 2-4. Members of the 13th Waffen SS Mountain Division during their training, Bundesarchiv, Bild 146-1973-116-11/CC-BY-SA 3.0.
Figure 2-5. Commander Draza Mihailovich confers with Chetnik troops. United States Holocaust Memorial Museum, Photograph #46711, courtesy of the Muzej Revolucije Narodnosti Jugoslavije.
Figure 2-6. Josip Broz Tito and the Partisan Supreme Command, May 1944. Tito is in the foreground to the right of the dog. Slade, M J (Sgt) No 2 Army Film and Photographic Unit, Photograph NA 15129 from the public domain collections of the Imperial War Museums (collection no. 4700-39).
Figure 2-7. Partisan Fighter Stjepan "Stevo" Filipović shouts “Death to Fascism, freedom to the people!” just prior to his execution by a Serbian State Guard unit in Valjevo, Serbia on May 22nd, 1942. The slogan would become a Partisan rallying cry. Probably Slobodanka Vasić, United States Holocaust Memorial Museum, Photograph #89846, courtesy of the Muzej Revolucije Narodnosti Jugoslavije.
Figure 2-8. Soldiers of the Ushaše Black Legion at Koševo in Sarajevo in 1942. CC-BY-Ustaška vojnica,
Figure 2-9. A Serb family is murdered in their home during an Ushaše raid, 1941. United States Holocaust Memorial Museum. Photograph # 46710, courtesy of the Muzej Revolucije Narodnosti Jugoslavije
Figure 2-10. Serb civilians are forced to convert to Catholicism by the Ushaše government. In this photo, they stand in front of the baptismal font in a church in Glina, Croatia. United States Holocaust Memorial Museum, Photograph #90163, courtesy of the Muzej Revolucije Narodnosti Jugoslavije.
Figure 2-11. Temporary Partisan Republics within the Independent State of Croatia (NDH) and German Occupied Serbia. CC0-BY-PANONIAN.
CHAPTER 3
ARCHAEOLOGICAL AND OSTEOLOGICAL CONTEXT

The unknown WWII combatants whose remains form the basis of this study were housed in nine body bags, labeled 1 through 9, at the Sutina Mortuary in Mostar, Herzegovina. To understand whether they did indeed fit the archaeological and biological profile of what one would expect to see if one were dealing with WWII combatants, each body bag and its attendant artifacts were assessed. During this phase of the project, the artifacts were evaluated to look for indications that these individuals had been interred during WWII and that they had been active participants in the war on the side of the Axis. The artifact assessment was also conducted to see whether the artifact assemblage would corroborate isotope findings indicative of particular geographic origin. The combatant’s age, sex, ancestry and stature was also analyzed to learn more about the demographics of these individuals and to look for irregularities in their biological profile that might contradict the idea that they were WWII-era soldiers. Both the artifact evidence and the biological profile, which indicated that these were European males, ranging in age from late teens to around mid-forties or possibly even 50-odd years of age, some with evidence of gunshot trauma, all suggest that these individuals were Axis-affiliated WWII combatants.

Archaeological Context

Unfortunately, the archeological context surrounding the remains utilized in this study is poorly understood. There was some discussion that the initial excavation may have been conducted by concerned citizens searching for the remains of loved ones after the conclusion of the Bosnian War. However, to date, no evidence has emerged to substantiate this claim. Though Bosnian officials have made every effort to locate
records related to the excavation and exhumation of these individuals, they have, unfortunately, had little success. Indeed, so little information is known about the consequences surrounding the excavation that it is unclear whether they all belong to a single mass grave or to multiple graves found in the same location. Individuals involved in the curation of the remains also expressed concern over the possibility that there could be separate Bosnian and German graves that were buried on top of each other whose remains were commingled during excavation (Hanson, personal communication).

To complicate matters further, when the remains were originally exhumed they were placed in body bags as they were found with little regard to which sets of remains belonged to which individual. Therefore, they are exceptionally commingled (see Figures 3-1 & 3-2). Part of the reason for utilizing isotopes to indicate a regional affiliation for these combatants is that isotopes are reflective of the geology and environment of an individual’s home region and are independent of site-specific context. The remains, which are currently housed at the Sutina mortuary in Mostar, Herzegovina, the southernmost region of Bosnia, eventually became the responsibility of the Mostar Prosecutors Office and the remains themselves were reevaluated and inventoried by anthropologists from the ICMP in July of 2013.

Artifacts

While site context does not convey much information about site continuity, the widespread distribution of WWII-era military combat artifacts, as well as consistency in taphonomy and trauma, suggests that all of these individuals were interred at the same time in a single grave. While the archaeological context is incomplete, there are a over 200 artifacts associated with the remains. Many of these artifacts are standard issue
military gear, such as boot treads, parts of belts, uniform fabric, fragments of socks, canteens and canteen cups, a pair of black shoelaces, parts of cigarette cases and pocket knives, plastic and metal buttons, uniform fasteners and parts of plastic combs (see Figures 3-3 through 3-8). There is also quite a lot of ordnance in the form of rusted bullets and pieces of bayonets (Figures 3-9 and 3-10).

**German Style Identification Tags**

The distinctive quality of certain artifacts contributes to the belief that the murdered men in this mass grave were German. There are seven spheroidal German-style identification tags complete with German writing, an inscribed wedding ring, a few German coins and there is a German helmet. Though some of the identification tags are too corroded to be legible using the naked eye, it is still possible to make out the inscription on five of the tags. The identification tags found with body bag 1 are inscribed "*Feldeisenb* BA Sc 329," with an “O” at the bottom and "*Feldeisenb* BA 8 772" with an “A” at the bottom (Figures 3-11 and 3-12). There are five identification tags associated with the skeletal assemblage from body bag 8. Of the four that are decipherable, the inscriptions read as follows: “St./L. *Flak*—Abt.85” with “Nr. 74” and an “A” at the bottom (tag 1), “F. S” and then possibly an M then there is an "a. 3" there is also a “1” and a “7” at the top with a possible number in between (tag 2); "*Ideisenb,*" which is likely to be "*Feldeisenb*" (tag 4) and “AMMK GiB 483” (tag 5) (Figure 3-13). German identification tags, unlike identification tags from other nations, do not contain the name of the individual to whom they belong. The beginning statements in these tags such as “*Feldeisenb BA*” are usually the type of military unit to which that individual belonged. A flak unit for example is an antiaircraft unit. The *Feldeisenb BA* is most likely
an abbreviation for the *Feldeisenbahnbetreibs Abteilung*, which were military railroad units.

According to a recent conversation with the WASSt in order to determine the identity of the individual based on a tag, one must compare the specific number assigned to the tag to a cross-reference list which states the person’s identity. WASSt keeps these lists at their headquarters in Berlin and will conserve the tags and then compare their inscriptions against the records associated with the tag number. An earlier ICMP report related to the remains interpreted the single letters like “A” and “O” to be blood types.

However, the presence of a tag is not always enough to ensure that the individual was actually interred in the grave. Due to the fact that WWII German identification tags did not include combatant’s names, it was possible for soldiers to confuse their tags with the tags of their comrades. Recently, Gassend and Alberti (2015) documented a case related to Operation Dragoon in southern France in which they speculated that a German identification tag had mistakenly ended up among the dead because soldiers had inadvertently switched tags.

**Wedding Ring**

The wedding ring is inscribed with the initials “L.S.” and the date, “17/10/1937” (Figure 3-14). The L and S are in Latin script, indicating that the individual in question was not using a Cyrillic alphabet. However, this does not definitely indicate that the person who wore the ring was German since the Kingdom of Yugoslavia utilized both Latin and Cyrillic alphabets in the 1930s and many other countries in central Europe utilize Latin alphabets.
Coins

There are four Reichspfennig coins associated with the artifacts from body bag 2. Three of the coins were found together, attached to a piece of material. They are caked with dirt and would need to be properly conserved for their inscriptions to be decipherable. However, the other coin is a German 50 Reichspfennig piece. During the Third Reich, a 50 Reichspfennig coin would have been worth half a Reichsmark.

Though part of the bottom of the coin is corroded, the majority of the embossed Fraktur script on the coin is still legible. On the Reichspfennig side, one can make out the “R” and “hs” of Reichs and the “pfen” of pfennig (Figure 3-15). The top of the 50 and the left oak leaf decoration are visible, as is the “A” at the bottom of the coin, which is the mintmark that would have stood between both the oak leaves that were normally found at the base of the coin. An “A” mintmark indicates that this particular Reichspfennig was minted in Berlin.

On the Deutsches Reich side of the coin, it is possible to make out the “tsches” in Deutsches and all of the word “Reich” (Figure 3-16). The 50 Reichspfennig coin typically has a soaring eagle with a swastika surrounded by an oak wreath in its talons. In this case, the majority of the eagle has been obscured, but parts of its spread wings are still visible. The 50 Reichspfennig coin with the soaring eagle was only minted between 1939 and 1944. The date of issue is usually found at the bottom of this side of the coin. Though part of the bottom of the coin is damaged, it is possible to read the majority of the date, which indicates the coin was minted in 1941, the year the Nazis invaded Yugoslavia. Interestingly, there was a scheme to introduce different coins and banknotes into Nazi occupied territories, but it does not seem to have amounted to much.
Canteens, Canteen Cups and Mess Tins

Body bag 4 contains two standard issue military canteens and one gray rectangular container that could have been a canteen cup, but seems more likely to be a mess tin (Figure 3-17). There is a container and lid associated with body bag 2 that bears a resemblance to the German army’s M31 mess canteen (Figure 3-18). Body bag 9 also contains a gray canteen cup, complete with the metal rings usually associated with these kinds of canteen cups (Figure 3-19).

Helmet

The standard issue German military helmet associated with body bag 8 is corroded, but in fairly good condition (Figure 3-20). The helmet displays the dome, visor and neck guard construction that are the hallmarks of German helmet design (Tubbs and Clawson, 2000). The right-side air vent is still visible and appears to have been punched out of the helmet’s shell rather than created with a grommet, suggesting that this is an M40 or an M42 rather than an M35 helmet (Tubbs and Clawson, 2000) (Figure 3-20). The military insignia of the division would originally have been located just below the air vent.

The most notable feature of the helmet is a bullet hole, which is clearly visible on the lateral left side (Figures 3-21 & 3-22). The bullet hole is found on the dome just superior to the curve where the visor meets the neck guard. Individual 5 from body bag 8 displays evidence of gunshot trauma to the left parietal and the lateral aspect of the occipital. However, because the cranium is fractured and fragmentary it is not possible at present to determine whether the bullet hole in the helmet and the bullet wounds to the left lateral surface of the skull are a match.
Cross Pendant

There is also a budded or trefoil cross pendent that was found in body bag 8 (Figure 3-23). Unfortunately, the metal on the cross is too corroded to know if the cross contains any distinguishing features.

Boot Fragments

The presence of boot treads and soles is interesting because it suggests that the combatant’s footwear was not looted after their death. In a mass grave from Villeneuve-Loubet in southern France, Gassend (2014) noted that only one of the 14 individuals buried in the grave was still wearing shoes. The absence of the soldier’s shoes was thought to have been due to local people absconding with them prior to their interment (Gassend, 2014). While one cannot read too much into the presence of boots at this burial, it is possible that their own comrades may have buried these men since it seems unlikely that undersupplied Communist irregulars or townspeople would have buried them with their boots on.

While the majority of the artifacts suggest that the individuals in the mass grave are German soldiers, this idea should be treated with caution because the Germans often fought in mixed units composed of Germans, Croats and Muslims (Redžic, 2005; Shepherd, 2012). Therefore, though the artifacts seem to indicate that these are German soldiers, there is always the possibility that they could belong to individuals with Axis-affiliations who belong to a different national group.

Minimum Number of Individuals

When the remains were initially inventoried, they were inventoried by body bag to produce a minimum number of individuals (MNI) per bag. However, the MNI was calculated using whichever skeletal element was most repeated in each bag rather than
counting the number of one specific skeletal element for all of the bags. This presents a problem because the placement of multiple sets of remains in the same body bag make it possible that the remains of one individual may well be represented in multiple body bags. Therefore, determining the MNI by counting multiple elements introduces the possibility that elements from the same individual will be counted multiple times.

This issue led to a reevaluation of the MNI in 2016. Skeletal elements were only included if they were complete enough (approximately 2/3 of the element present) or had diagnostic features that were sufficiently distinct, such as the presence of the acromion process on the scapula, to ensure that the same element from the same person would not be counted twice. Proximal and distal long bone epiphyses were excluded due to the possibility that they could potentially match diaphyses in other body bags. The ribs, pelvis and vertebrae were also excluded because they were frequently fragmentary and there was often little possibility of determining whether the fragments in several body bags were, in reality, part of a single skeletal element. When the remains were reevaluated in 2016, the most prevalent skeletal element was the left tibia, leading to an MNI of 26.

**Taphonomy**

The osteological material displays consistency in regard to postmortem environmental alterations, such as soil discoloration, root activity and postmortem damage. Skeletal elements from all body bags exhibit evidence of extensive soil staining. Moreover, the staining, which is for the most part a yellow-brown interspersed with patches of darker brown, is uniform across body bags which lends credence to the idea that all of these individuals were recovered from the same mass grave or, at least, the same general location. The remains also display widespread evidence of root
activity. While most of this is in the form of plant roots found on the bones themselves, there is also some evidence of root etching as well.

The remains also display evidence of postmortem damage, particularly at the ends of the long bones and the ribs. Discontinuities in coloration between the bone’s surface and the fracture margins of these areas indicate that this damage occurred postmortem rather than as perimortem trauma. The jagged edges of the exposed surfaces, plus the presence of some punctures, as well as the fact that the damage is, for the most part, to the long bone epiphyses and sternal rib ends, all suggest that this damage is post-mortem carnivore scavenging. Interestingly, there does not appear to be any evidence of rodent activity.

**Biological Profile**

**Sex**

In regard to sex, when observable traits such as glabella, the nuchal crest, the mental eminence, the mastoid process and the superior orbital margin, were available for scoring, each individual with one or more of these features was scored as male. Many of the mandibles present also displayed sharp gonial angles and, in some cases, gonial flaring. The overall robusticity observed in some of the crania and in some of the skeletal elements also lends support to the suggestion that these individuals were male.

In regard to pelvic characteristics, unfortunately many of the pelves were heavily damaged and therefore not of much use in regard to sex. The pelves that were available displayed sharp sub-pubic angles (less than 90°) and the narrow pelvic morphology one would expect of a male. The majority of sciatic notches present indicated that these individuals were male, but the sciatic notch is often not the most
reliable observable trait when it comes to the sex of unknown individuals and therefore this observation should be treated with caution.

While many of the femora recovered were either fragmented or damaged, the midshafts of many femora remained intact. The femoral midshafts measured from femora in all nine body bags ranged between 90 mm and 115 mm in circumference, suggesting that these individuals surpass the 81 mm threshold originally proposed by Black (1978), which indicates that these are the remains of males. Similarly, the only complete right femur has a length of 505 mm, which would be inordinately long for a female individual. For example, in Black’s (1978) assessment of femoral length for prehistoric Missouri populations <55 years, the sectioning point for males versus females was only 446 mm, well below that of the individual mentioned above. It is possible that secular change in bone over time, as well as the ancestry of the individuals, could account for this discrepancy. However, an assessment of contemporary white South Africans yielded a male mean of 470 mm, still well below that of the femur listed above (Steyn and İşcan, 1997). Work conducted by Mall et al. (2000) and Leopold (1998) on contemporary German populations yielded a male mean of 464 mm and 469 mm respectively, indicating once again that the complete femur from body bag one is most likely to be male.

It is worth noting, that these individuals were independently assessed by an ICMP anthropologist, who also concluded that all individuals represented in this assemblage were males. Therefore, the available skeletal evidence does seem to support the idea that these are males, an unsurprising finding when one considers that these are WWII military burials.
Age

The skeletal and artifactual evidence related to the ages of these individuals indicates that there is not uniformity in age. During the initial examination of the body bags, the presence of myriad unfused epiphyses was noted. The presence of unfused femoral heads (n=8), unfused distal tibiae (n=7) and unfused proximal radii (n=3) suggest that some these individuals were <18 years. This is unsurprising since many people under the age of 18 lied about their ages in order to fight in the military. Unfused distal radii (n=4) and unfused distal femora (n=6) suggest an age <19 years. An unfused distal ulna, proximal humeri (n=3) and the acromion of the scapula, all indicate the presence of individuals <20 years. The ischial tuberosity from one of the individuals in body bag 4 has just begun fusing, suggesting this individual is somewhere between the ages of 18 and 20 years.

The sutures on the partial cranium from body bag 3 are observable enough to utilize cranial suture closure as a means of age determination. The cranial vault score indicates an age range of 28-44 years, while the lateral-anterior sites suggest an age range of 28-51 years (Lovejoy et al., 1985). Cranial suture closure from an intact cranium in body bag 5 displays a cranial vault score that indicates an age range of 23-45 years, while the lateral anterior score indicates an age range of 20-43 years. The age range of this individual is significantly reduced to ~19-20 years when third molar eruption is considered. There are two individuals from body bag 8 with observable cranial suture closure. Individual one displays a cranial vault score that suggests an age range of 35-59 years, while the lateral-anterior score indicates an age of 35-56 years. This individual also has partial dentures. Individual four from body bag 8 displays a vault suture score that suggests an age of 23-45 years.
The anterior dentition of individuals from body bag 1 and body bag 4 displays evidence of stage 4 dental wear (Smith, 1984). The individual from body bag 1 also has a gold dental bridge, which replaces the maxillary left lateral incisor and canine. Interestingly, the anterior teeth of one of the individuals in body bag 5 possesses anterior dentition that display stage 3 anterior wear, yet the partial eruption of this individual’s lower third molars indicates that this man was only ~19-20 years. This suggests that the presence of wear on the teeth is at least partially due to diet rather than age. The other individual in body bag 5, the individual with gunshot trauma, is partially edentulous. A set of partial maxillary dentures belonging to this individual was also found in body bag 5. Partial maxillary dentures and stage 5 dental wear were also found with individual one in body bag 8. The lower dentition of another individual in body bag 8 displays a left third molar that has just begun to erupt from the crypt and a right third molar that has not erupted at all, suggesting this individual is 19-20 years, with a younger age suggested based on his observed pattern of dental eruption. This mandible matches the cranium of individual four, whose maxillary third molars also show no signs of eruption.

The ages of the individuals in the grave vary, which might sound surprising when we consider the fact that this is a WWII military grave. However, the variability in age might actually be in keeping with what historians know about the Balkan campaign. For example, Shepherd (2012) noted that in the beginning of the invasion of Yugoslavia, many of the combatants stationed in the Balkans were young boys and older men. In fact, the majority of combatants in some of the 700 level *Wehrmacht* Infantry divisions were >30 years of age (Shepherd, 2009). This has to do with the fact that originally, the
Balkans was a rear position and it was also initially perceived to be a fairly safe, if unexciting, place to be stationed (Hehn, 1979; Shepherd, 2009). However, this kind of thinking about the former Yugoslavia changed as time went on and it became increasingly obvious that fighting the Partisan resistance movements in Yugoslavia would be far more difficult and dangerous than Hitler and those high up in the military chain of command believed (Shepherd, 2012). However, as the Germans became increasingly burdened on the Russian and Western Fronts, Wehrmacht replacement forces to the southeastern theater were often comprised of over-aged men (Hehn, 1979). Thus, the disparities in the ages of the remains examined in the body bags seems to be in keeping with what is known about the demographics of Wehrmacht soldiers stationed in the Balkan region.

**Ancestry**

The observable facial features of several of the crania indicate that the remains in the grave(s) are likely to be those of Europeans. While it would have been preferable to utilize cranial measurements in order to assess ancestry, time constraints, cranial deformation and the fragmentary nature of the remains made this type of observation untenable. Therefore, though the author recognizes the problems inherent to utilizing non-metric analyses, morphoscopic traits were used to make determinations about the ancestry of the individuals in the body bags (for morphoscopic trait information see Gill, 1998; Gill and Rhine, 1990; Rhine, 1990; Birkby et al., 2008; Hefner, 2009; Klales and Kennyhercz 2014.) Of the four intact nasal apertures available, all of them were tall and narrow with a notable nasal sill. The orbits also displayed the teardrop shape you would expect of Europeans, as well as the parabolic dental arcade and midfacial prognathism. However, though the traits observed are consistent with all of these individuals were
Europeans, the paucity of observable traits and the fact that quantitative measurements could not be conducted means that ancestry estimation of the entire assemblage should be treated with care.

**Stature**

Stature estimates were, regrettably, curtailed by the fact that many of the long bones were fragmentary. However, the three femora that could be assessed for stature were analyzed utilizing the standard regression equation for European males (Trotter and Gleser, 1952):

$$2.38 \times \text{(maximum femoral length)} + 61.41 \pm 3.27$$

Stature estimates on a femur from body bag 1 indicate that this individual was between 182.88 and 189.42 cm tall (~6’ to 6’3”). Stature estimates of two femora from body bag 4 indicate that these individuals were between 175.43 and 181.97 (~5’9” and 5’11.6”) and 171.52 and 178.06 (~5’7.5” and 5’10.1”) cm tall respectively.

**Trauma**

Of the ten partial crania associated with the body bags, the crania of four individuals display wounds consistent with ballistic trauma on either the posterior or lateral aspect of the cranium, indicating that these men died violently. Both entrance and exist wounds are present and the traumas display the punched-out edges and beveling that characterize gunshot wounds (GSW). Moreover, none of the GSWs display signs of healing, indicating that these wounds were most likely received perimortem. Individuals with GSWs were found in body bags 1, 5, 8 and 9. The individuals in body bags 1 and 9 display radiating fractures consistent with what one would expect to see in gunshot trauma. The individual in body bag 5 displays a GSW at
the left parietal close to the sagittal suture and toward the occipital. The individual in body bag 9 displays an exit GSW to the left parietal along the superior temporal line.

Two of the aforementioned individuals display evidence of multiple GSWs to the cranium. The individual in body bag 1 displays two entrance wounds on the occipital, one directly at lambda and one inferior to the lambdoidal suture on the left side. There are also two exit wounds on the right lateral aspect, one at the intersection of the occipital and the temporal and one on the temporal squama at the point where it meets the right parietal. The cranium from body bag 8 exhibits both an entrance GSW to the left aspect of the parietal superior to the foramen magnum and an exit GSW lateral to the internal occipital crest. There is also an entrance GSW on the left parietal that is superior to the temporal squama. Bullets and bullet fragments were found among the artifacts associated with all of the body bags.

One of the right ulnae from body bag 8 displays evidence of an antemortem fracturing. The distal diaphysis shows the healed bony growth that one would normally associate with a bone callus.
Figure 3-1. The human remains stored inside of body bag 3. Photo taken by author.
Figure 3-2. Four right tali, all removed from body bag 1. The 20 Feninga coin is present for scale. The diameter of the 20 Feninga coin is 22 mm. Photo taken by author.
Figure 3-3. Fragments of boots. A) Sole of a boot from body bag 4. B) Heal of a boot from body bag 6. The 20 Feninga coin is present for scale. The diameter of the 20 Feninga coin is 22 mm. Photo taken by author.
Figure 3-4. Buckles recovered from body bag 8. The 20 Feninga coin is present for scale. The diameter of the 20 Feninga coin is 22 mm. Photo taken by author.
Figure 3-5. A pair of black shoelaces associated with body bag 9. The 20 Feninga coin is present for scale. The diameter of the 20 Feninga coin is 22 mm. Photo taken by author.
Figure 3-6. A corroded cigarette case associated with body bag 9. The 20 Feninga coin is present for scale. The diameter of the 20 Feninga coin is 22 mm. Photo taken by author.
Figure 3-7. Cloth and plastic buttons associated with body bag 7. The 20 Feninga coin is present for scale. The diameter of the 20 Feninga coin is 22 mm. Photo taken by author.
Figure 3-8. The remnants of a pocketknife associated with body bag 7. The 20 Feninga coin is present for scale. The diameter of the 20 Feninga coin is 22 mm. Photo taken by author.
Figure 3-9. A comb associated with body bag 7. The 20 Feninga coin is present for scale. The diameter of the 20 Feninga coin is 22 mm. Photo taken by author.
Figure 3-10. Bullets associated with body bag 8. The 20 Feninga coin is present for scale. The diameter of the 20 Feninga coin is 22 mm. Photo taken by author.
Figure 3-11. Fragment of a bayonet associated with body bag 1. The 20 Feninga coin is present for scale. The diameter of the 20 Feninga coin is 22 mm. Photo taken by author.
Figure 3-12. Identification tag associated with body bag 1. The inscription on the tag reads “Feldeisenb BA Sc 329.” There is also an “O” located on the bottom of the tag. The 20 Feninga coin is present for scale. The diameter of the 20 Feninga coin is 22 mm. Photo taken by author.
Figure 3-13. Identification tag associated with body bag 1. The tag is inscribed “Feldeisenb BA 8 772.” There is also an “A” located at the bottom. The 20 Feninga coin is present for scale. The diameter of the 20 Feninga coin is 22 mm. Photo taken by author.
Figure 3-14. Identification tag associated with body bag 8. The tag is inscribed “St./L. Flak—Abt.85” with the “Nr. 74.” There is an “A” at the bottom of the tag. The 20 Feninga coin is present for scale. The diameter of the 20 Feninga coin is 22 mm. Photo taken by author.
Figure 3-15. A gold wedding ring associated with body bag 1. The ring is inscribed with the initials “L.S.” and the date “17/10/1937.” The 20 Feninga coin is present for scale. The diameter of the 20 Feninga coin is 22 mm. Photo taken by author.
Figure 3-16. The 50 Reichspfennig side of a 50 Reichspfennig coin associated with body bag 4. The 20 Feninga coin is present for scale. The diameter of the 20 Feninga coin is 22 mm. Photo taken by author.

Figure 3-17. The Deutsches Reich side of a 50 Reichspfennig coin associated with body bag 4. The 20 Feninga coin is present for scale. The diameter of the 20 Feninga coin is 22 mm. Photo taken by author.
Figure 3-18. Military Canteen associated with body bag 4. The 20 Feninga coin is present for scale. The diameter of the 20 Feninga coin is 22 mm. Photo taken by author.
Figure 3-19. Mess canteen associated with body bag 2. The 20 Feninga coin is present for scale. The diameter of the 20 Feninga coin is 22 mm. Photo taken by author.
Figure 3-20. Canteen cup associated with body bag 9. The 20 Feninga coin is present for scale. The diameter of the 20 Feninga coin is 22 mm. Photo taken by author.
Figure 3-21. German-style military helmet associated with body bag 8. Note that the right side air vent is visible. The 20 Feninga coin is present for scale. The diameter of the 20 Feninga coin is 22 mm. Photo taken by author.
Figure 3-22. The left side and part of the posterior of a Germany-style military helmet. Note the bullet hole where the visor meets the dome of the helmet. The 20 Feninga coin is present for scale. The diameter of the 20 Feninga coin is 22 mm. Photo taken by author.

Figure 3-23. A close up of the bullet hole located where the visor meets the dome of the helmet. The 20 Feninga coin is present for scale. The diameter of the 20 Feninga coin is 22 mm. Photo taken by author.
Figure 3-24. A budded cross pendant associated with body bag 8. The 20 Feninga coin is present for scale. The diameter of the 20 Feninga coin is 22 mm. Photo taken by author.
Strontium (Sr), lead (Pb), oxygen (O) and carbon (C) isotope analysis of human remains is based on the premise that human tissues, such as bones and teeth, record the signatures of chemical elements that occur in the natural environment (Bentley, 2006). This idea is based on the assumption that the isotopic composition of an organism’s tissues is reflective of their diet (Ambrose, 1993). As such, isotope analysis can serve as a powerful tool in the determination of local and non-local individuals.

**Strontium**

Strontium is a naturally occurring element with four stable isotopes: $^{84}\text{Sr}$ (0.56%), $^{86}\text{Sr}$ (9.87%), $^{87}\text{Sr}$ (7.04%) and $^{88}\text{Sr}$ (82.53%) (Faure, 1986). Strontium isotope analysis related to human beings is mostly concerned with measuring the ratio of $^{87}\text{Sr}/^{86}\text{Sr}$, which serves as means of measuring the geochemical origins and age of rocks and minerals (Åberg, 1995; Beard and Johnson, 2000). Due to the fact that $^{87}\text{Sr}$ is formed from the radioactive decay of the radiogenic isotope $^{87}\text{Rb}$, an isotope of rubidium, rocks including both elements will gradually increase in $^{87}\text{Sr}$ as the $^{87}\text{Rb}$ decays (Capo et al., 1998). This means that rocks with the same initial Rb-Sr ratio can be differentiated based on age since older rocks will display $^{87}\text{Sr}/^{86}\text{Sr}$ ratios that are higher than those of younger rocks (Åberg, 1995). Additionally, the lithology of the rock will also contribute to making distinctions between $^{87}\text{Sr}/^{86}\text{Sr}$ isotope signatures because certain kinds of rocks are composed of higher proportions of Rb/Sr than others. This means that young, rubidium-poor rocks, such as Quaternary Basalts, will exhibit less radiogenic and low $^{87}\text{Sr}/^{86}\text{Sr}$, while rocks such as Paleozoic granites, which are older and/or rich in rubidium will display considerably higher strontium ratios (Faure, 1986; Voerkelius et al., 2010).
Strontium isotope analysis is based on the premise that an organism’s bones and teeth record the $^{87}\text{Sr}/^{86}\text{Sr}$ signature of the bedrock of their residential location (Capo et al., 1998; Bentley, 2006; Eerkens et al., 2014). As environmental bedrock and sediments weather, they provide the parent material for soils, which supply nutrients to plants that are, in turn, ingested by animals (Capo et al., 1998). Due to the fact that strontium has an atomic radius similar to calcium (Ca), it can easily substitute for calcium in other minerals, including hydroxyapatite, the main inorganic component of tooth enamel and bone (Bronner et al., 1963; Eerkens et al., 2014). Utilizing strontium is also beneficial because, unlike the light stable isotopes, such as carbon (C) and nitrogen (N), fractionation of strontium through the food web is negligible due to minimal differences in mass between $^{87}\text{Sr}$ and $^{86}\text{Sr}$ (Eerkens et al., 2014).

**Lead**

Unlike strontium, the periodic element lead displays a mixture of radiogenic and non-radiogenic isotopes. $^{204}\text{Pb}$ is non-radiogenic, while $^{206}\text{Pb}$, $^{207}\text{Pb}$, and $^{208}\text{Pb}$ are radiogenic and are the products of the decay of $^{238}\text{U}$, $^{235}\text{U}$, and $^{232}\text{Th}$ respectively (Kamenov and Gulson, 2014). Lead’s geographic location determines the proportion of the various lead isotopes (Brill and Wampler, 1967). Akin to strontium, the relative abundance of the lead isotopes is dependent on the age and the original amount of uranium, thorium and lead present in specific rocks and minerals (Valentine et al., 2008). This means that the variation of lead isotope abundance in rocks, minerals, soils and various ores is determined by the initial Pb, the proportions of uranium, thorium and lead and the amount of time that has elapsed since their formation (Kamenov and Gulson, 2014). Therefore, geologically old rocks with high ratios of uranium and thorium in comparison to lead will have high ratios of $^{206}\text{Pb}/^{204}\text{Pb}$, $^{207}\text{Pb}/^{204}\text{Pb}$ and $^{208}\text{Pb}/^{204}\text{Pb}$.
while geologically old rocks with low ratios of uranium and thorium to lead will have lower radiogenic lead isotope values (Kamenov and Gulson, 2014).

Rather than being ingested via the food web, lead enters the human body via the inadvertent ingestion and inhalation of soil and dust particles that get stuck to hands, food and objects (Kamenov and Gulson, 2014). As is the case with strontium, the atomic radius of lead is similar to the atomic radius of calcium and is therefore capable of substituting for the calcium found in other minerals, such as hydroxyapatite (Bronner et al., 1963; Eerkens et al., 2014).

**Oxygen**

Oxygen isotopes can also be utilized as indicators of individual and community mobility. Studies have demonstrated that there is strong linear correlation between δ^{18}O in drinking/environmental water and δ^{18}O in both the phosphate and the structural carbonate components of mammal bones and teeth (Luz et al., 1984; Luz and Kolodny, 1985; Levinson et al., 1987; Bryant et al., 1996). Extensive research underscores the fact that the isotopic composition of mammal teeth and bone corresponds to the meteoric water found in their living environment—meteoric water that is regionally influenced by climatic factors such as temperature, altitude and humidity (Luz et al., 1984; Luz and Kolodny, 1989; Sponheimer and Lee-Thorp, 1999; Dupras and Schwarcz, 2001; Bentley and Knappper, 2006; Eckardt et al., 2009; Koon and Tuross, 2013; Toyne et al., 2014).

Oxygen stable isotope values obtained from the bones and teeth of archaeological and historic peoples provide information on migration patterns because the process of human metabolic fractionation of oxygen isotopes is predictable and well understood (Luz et al., 1984; Levinson et al., 1987; Eckardt et al., 2009). This occurs
due to the fact that the environmental processes that contributed to oxygen isotope fractionation, such as precipitation and evapotranspiration, allow lighter molecules of water to evaporate before heavier ones and to precipitate last (Sharp, 2007; Eerkens et al., 2014). During this process, known as Rayleigh fractionation, water containing the heavier isotope, $^{18}$O, preferentially condenses out, leaving the remaining vapor enriched in the lighter isotopologue, $^{16}$O (Lightfoot and O’Connell, 2016). Therefore, as the water vapor advances through the environmental system and the heavier isotopologue is removed, the vapor becomes progressively more enriched in $^{16}$O.

The isotope ratio of $^{18}$O/$^{16}$O is governed by the balance between oxygen inputs, such as drinking water, the water found in food and the O$_2$ in water vapor, and the human body’s oxygen outputs, most notably sweat, urine and carbon dioxide (Luz and Kolodny, 1989; Dupras and Schwarcz, 2001). These metabolic inputs and outputs tend to track the δ$^{18}$O of meteoric (rain, etc.) and recycled water (rivers, lakes, etc.)—water which reflects differences in the physical and biological environment (Dupras and Schwarcz, 2001). These variations in meteoric and recycled water as they are reflected in the δ$^{18}$O values in human tissues can be utilized to identify local groups as well as migrants. For example, the δ$^{18}$O of meteoric water decreases with distance from the sea, increased elevation and lower temperature (Bentley and Knipper, 2005). In contrast, the δ$^{18}$O of animals that live in arid environments is higher because the low humidity produces plants that have an increased amount of $^{18}$O in their leaf water (Sponheimer and Lee-Thorp, 1999). Thus, individuals living in differing environments with variable humidity, elevation and temperature will display disparate δ$^{18}$O ratios that should reflect their homeland.
Carbon

Carbon has three naturally occurring isotopes: $^{14}\text{C}$, which is radiogenic and is the principle component in Carbon-14 dating, $^{13}\text{C}$ and $^{12}\text{C}$, both of which are stable. $^{12}\text{C}$ is, by far, the most abundant naturally occurring of the carbon isotopes with an abundance of 98.93% (Audi et al., 2003). $^{13}\text{C}$, in contrast, makes up 1.07% of natural carbon, while $^{14}\text{C}$ occurs only in trace amounts (Audi et al., 2003).

Carbon, like strontium, usually enters the human body via the food web. Due to the fact that the isotopic composition of an organism’s tissues is primarily controlled by its diet, carbon can be utilized to indicate the type of plants an individual consumed or the abundance of marine in comparison to terrestrial foods in the diet (DeNiro and Epstein, 1978; Ambrose, 1993).

Carbon isotopes are usually used to indicate whether an individual or population’s diet consisted of a greater proportion of C$_3$ or C$_4$ plants (Eerkens et al., 2014). Plants usually employ either C$_3$ or C$_4$ carbon fixation during photosynthesis and the terms C$_3$ and C$_4$ refer to the number of carbon atoms formed in a molecule during the earliest stages of photosynthesis (Ambrose, 1993). The heavier $^{13}\text{C}$ isotope is more depleted among individuals consuming a majority of C$_3$ plants than it is among people who consume mostly C$_4$ plants. Plants that employ a C$_3$ photosynthetic pathway make up the majority of the plants on earth. Therefore, it is unsurprising that human beings tend to consume more C$_3$ plants than C$_4$ plants. Wheat, rice, legumes, vegetables, nuts, root crops, the majority of fruits and montane, wetland and forest grasses are all C$_3$ foodstuffs (Ambrose, 1993). In contrast, maize, sorghum, millet, sugarcane, chenopods, amaranths and tropical grasses are all C$_4$ plants (Ambrose, 1993). The variation between the consumption of C$_3$ and C$_4$ diets has been utilized to distinguish when
certain crops that employ the opposite photosynthetic pathway were first introduced and
began to become widely consumed. For example, several archaeological studies have
utilized differences in $C_3$ and $C_4$ isotopic signatures to evaluate the domestication of
maize and its increasing importance as a dietary staple in the Americas (Vogel and van
der Merwe, 1977; van de Merwe et al., 1981; Lynott et al., 1986; Hard et al., 1996;

**War-Related Isotope Studies**

Isotope analysis has also been utilized in efforts to establish the national
identities of combatants who perished in wartime conflicts in both the recent and more
distant past. Grupe et al. (2012) utilized differences in strontium and oxygen isotope
values as a means of differentiating the various national parties that fought in the 1636
battle of Wittstock in Brandenburg, Germany during the Thirty Years War. Strontium and
oxygen isotope analysis indicated that the majority of the soldiers were non-local,
corroborating historical data, which indicated that individuals from all over Europe fought
at the Battle of Wittstock (Grupe et al., 2012). Despite the fact that no artifacts or
remnants of uniforms were recovered from the Wittstock burial pit, Grupe et al. (2012)
were able to utilize the isotope results to suggest that several of these soldiers were
Scottish and Swedish rather than German. Indeed, Grupe et al. (2012) proposed that, if
mass graves were sorted by army affiliation, it is likely that these unknown soldiers were
members of the Swedish army.

Looking to provide identifications related to a historical conflict in North America,
Schwarcz et al. (1991) utilized oxygen isotopes in order to evaluate the national identity
of soldiers who fought in the War of 1812. They sampled skeletal remains of
combatants from the Snake Hill site in Fort Erie, Ontario, Canada, and suggested that
the individuals buried at Snake Hill were from the same geographic area (Schwarcz et al., 1991). The authors tentatively suggest that the oxygen isotope values were indicative of individuals who hailed from eastern New York, Pennsylvania and the majority of New England rather than Ontario. The author’s findings were consistent with the material evidence, which suggested that these were American rather than British soldiers (Schwarcz et al., 1991; Thomas and Williamson, 1991).

Isotopes have also been utilized as a means of differentiating between soldiers who fought in more recent contemporary conflicts, such as the Vietnam War. In 2000, Beard and Johnson employed isotopes as a means of differentiating between the commingled remains of three US servicemen recovered from a mass grave in Vietnam. The authors were able to conclusively identify an American serviceman from North Central California due to the fact that there was no overlap between his strontium values and that of the other individuals analyzed (Beard and Johnson, 2000).

Recent dissertation research has also utilized isotope ratios to differentiate between people from Southeast Asia and United States servicemen in Vietnam (Regan, 2006). Regan (2006) used discriminant function analysis to analyze carbon, oxygen, strontium and lead isotope ratios. Regan (2006) found that the overall rate of correct classification for service people of known origin was between 95 and 97%, indicating that isotope ratios could be used as a good indicator of geographic origin, particularly in areas such as Southeast Asia where poor preservation and diagenesis often make DNA analysis impossible. Holland et al. (2012) utilized Regan’s (2006) approach as a means of identifying a single tooth recovered from an F-100D Super Sabre aircraft crash site in
Laos as that of the American pilot who was shot down while flying a mission over the area in 1969.

Recently, Bartelink et al. (2014a) employed carbon and nitrogen isotopes on individuals of known origin from the United States and Southeast Asia in order to test whether there was a distinction between C$_3$-based and mixed C$_3$/C$_4$ diets. As the authors expected, the collagen and bioapatite stable isotope values formed a bimodal distribution wherein elevated carbon isotope values indicating a greater contribution of C$_4$ plants represented combatants from the United States rather than locals from Southeast Asia (Bartelink et al., 2014a). Moreover, linear discriminant function analysis based on the stable isotope values of carbon correctly classified the samples 96.7% of the time (Bartelink et al., 2014a).

A 2015 isotope study focused on two unidentified Allied combatants who perished in the Kapelsche Veer bridgehead military actions between December 1944 and February 1945 (Font et al., 2015). When DNA analysis and dental records did not yield positive identifications, Font et al. (2015) decided to utilize strontium and oxygen isotopes to determine these individuals region of origin. The isotope results suggested that the two individuals sampled were likely to be members of the British Royal Marines rather than Free Norwegian Commandos, Free Poles or Canadians (Font et al., 2015). A Royal Navy blue canvas money belt was identified with one of the combatants, while Mt-DNA analysis later revealed that the other individuals had grown up in northern Wales, suggesting that in both cases the unidentified individuals were part of the Royal Marines (Font et al., 2015).
Geological Background

In order for an isotope study to work effectively, there must be sufficient geologic variability within the geographic area under study. Geopolitical borders, though often constrained by geologic features such as mountain ranges or rivers, are often arbitrary when it comes to making a geological distinction between what one would consider to be one country and the next. For example, just because Belgium and the Netherlands are geopolitically recognized as two distinct countries does not mean that their geology will be variable enough to distinguish them using various isotopic methods. Looking at geographic areas in terms of their variability in regard to types and ages of bedrock is much more useful in regard to efforts to distinguish between individuals from distinct geographic communities. Isotope distinctions between people of different communities will also occur if the geographic area in question includes areas of varying elevation, aridity and distance to large bodies of water (Bartelink et al., 2014b). For example, assuming that a community does not rely solely on imported food and water, a person born at high elevation in the Austrian Alps will not display the same isotopic values as someone who was born and raised along the flat, coastal dykes of the Netherlands or in the dry, Mediterranean climate of southern Spain.

The fact that Europe is highly variable in terms of geography means that isotopic studies can differentiate between individuals from disparate geographic areas (see Price et al., 2001; Bentley et al., 2003; Bentley et al., 2004; Bentley and Knipper, 2005; Gerlinga et al., 2012; Gruppe et al., 2012; Irrgeher et al., 2012; Borić and Price, 2013; Giblin et al., 2013; Scheeres et al., 2014; Lightfoot et al., 2014). Variability in elevation, climate, distance from the coast and distance to the poles all contribute to the variability displayed by different regions of Europe. Additionally, distinctions in rock type and age
can also play a role (Figure 4-1). For example, though the Croatian Coast can be mountainous, its mountains are made of limestone karst, a rock type that is isotopically distinct from some of the volcanic mountains found in the eastern part of central Bosnia.

**The Geology of the Western Balkans**

While significant isotope research has been conducted in other regions of Europe, such as Germany and Britain (see Lightfoot and O’Connell, 2016 for a good overview), there are, at present, not many studies that discuss the geological isotopic context of the Western Balkans. Therefore, it is worth considering the geological context of the region to ensure that there is sufficient geological and environmental variability to indicate that isotope analysis would yield results distinguishing people from disparate communities.

The present geological structure of the Carpathian-Balkan-Dinaric region is the result of the evolution of the Tethys and Atlantic oceans, as well as related movements of the European and African tectonic plates (Haas, 2012:3). The region, which is part of the larger Mediterranean Mountain System, formed in the late Paleozoic Era during the last plate tectonic cycle. A series of plate and microplate collisions dismembered the European and African continental plate margins, leading to tectonic deformation and uplifting, which created the Alpine Mountain System and the Dinaric Mountain System.

The Dinarides, the mountain system found throughout parts of Croatia and the majority of Bosnia, are characterized by nappes which were developed via a multiple structure evolution beginning in the Middle Jurassic and culminating in the Tertiary (Haas, 2012:12). Nappe movements were first induced in the region during the closure of the sub-basins of the Neotethys Ocean beginning in the Middle Jurassic (Haas,
Nappe formation, as well as tectonic deformation, continued through the Cretaceous and the Tertiary up into the Early Miocene (Haas, 2012).

The high karst unit, characteristic of all of western, coastal Croatia and western Bosnia, is composed mostly of Upper Carboniferous and Permian marine formations, as well as Early Triassic siliciclastics and carbonates and deep marine formations from the Middle Trassic (Vozárová et al., 2006; Haas, 2012). In the Late Triassic these formations developed into the shallow-marine limestone carbonate platform known as the Adriatic Carbonate Platform (Dragičević and Velić, 2002; Palinkaš et al., 2009). The Bosnian Unit of the Central Dinaric Alps is a flysch trough that developed between the Late Jurassic and the Cretaceous Period, though its accumulation continued as late as the Paleogene (Schmid et al., 2008). The Dinarid Ophiolite Belt found in southeastern Croatia and part of eastern Bosnia consists of sheared sand/siltstone matrix related to the subduction zone of the Neotethys, a zone which was active from the Middle to Late Jurassic, while the Drina-Invanjica Unit of east-central Bosnia consists of a series of metamorphic and folded Lower Paleozoic Formations, overlain by Carboniferous deep marine sediments and covered by Lower Triassic shallow-marine marls and carbonates (Haas, 2012). The Vardar Zone, whose Western Belt runs from Belgrade to Zagreb, is a mélange of basaltic rocks, gabbros, ultramaphic rocks and olithostromes, which resulted from the subduction of the Neotethys Ocean and the abduction of its oceanic basement onto the Adriatic margin during the Middle Jurassic (Haas, 2012:14).

The Pannonian Basin was formed by the attenuation of the Earth’s crust, which lead to concentrated volcanism and considerable, but uneven subsidence during the Miocene (Haas, 2012:16). The Croatia part of the Pannonian Basin is a mountain and
valley series. The Tisza Unit, a fragment of the European Variscan Belt that separated during the Middle Jurassic and has operated as a separate entity since the late Early Cretaceous, underlies much of northern Croatia (Bognar et al., 2012; Haas, 2012). The Moslavačka Gora and the Slavonian Mountains are composed of Paleozoic metamorphic rocks, such as paragneisses and schists (mica, green and chloritoid) with an overlying layer of Mesozoic sedimentary rocks, such as limestones (Bognar et al., 2012). Around five million years ago, the western part of the Danube-Tisza Interfluve known as Transdanubia was subject to intense uplift, creating the current iteration of the basin’s mountainous regions (Haas, 2012). However, the subsidence of the deep Pannonian Basin continued, leading to the accumulation of thick fluvial deposits (Haas, 2012). Additionally, during the Pliocene, thick alluvial deposits also accumulated along the Sava and Drava River basins, which run through northern Croatia (Bognar et al., 2012).

Environmental Strontium, Lead and Oxygen Isotope Frameworks in Germany, Italy, and the Western Balkans

The isotopic signatures of strontium and lead are affected by changes in bedrock geology (Price et al., 2002; Bentley, 2006; Slovak and Payton, 2012). Alterations in the age and lithology of rocks should create variability among the isotope samples. While geological equifinality is a concern, the substantial rate of geologic variability in Alpine and Central Europe should allow for the differentiation of various regional environments, particularly when strontium and lead data are combined with oxygen isotope analysis.

While the isotopic composition of all areas of Europe is analyzed against the results in this study in order to ensure that the results remain unbiased, the historical context of where the remains were found and their association with the Axis Powers
suggests that certain areas of Alpine Europe and the Balkans bear special consideration. The archaeological context, which contains, among other things, a German helmet and Reichspfennig coins, suggests that the individuals recovered from this context are associated with the Axis rather than the Allies. Additionally, initial investigations into these individuals suggested that they were believed to be German nationals. Moreover, when one considers the historical context of the former Yugoslavia during WWII, certain nations are more likely to have been in the region than others. Due to the fact that the western Balkans was partitioned into German and Italian zones, that many of the commanding officers stationed in the Balkans were Austrian and that the majority of modern Bosnia was controlled by the Ustaše, a group of Croatian Fascists, all of these groups bear special consideration. There was also a majority Bosnian Muslim division of the SS who also fought in the area of interest.

**Germany**

Archaeological investigations related to the migration of Linearbandkeramik (5500-4500 BC), Corded Ware (2700-2200 BC) and Bell Beaker (2500-2000 BC) populations, as well as a growing focus on Iron Age (800-450 BC) and Medieval sites has sparked interest in the Alpine region, particularly in southern Germany and around the Bavarian Alps (Price et al., 1998; Price et al., 2001; Bentley et al., 2002; Schweissing and Grupe, 2003; Bentley et al., 2004; Price et al., 2004; Tütken et al., 2004; Bentley and Knipper, 2005; Price et al., 2006; Haak et al., 2008; Giblin, 2009; Gerlinga et al., 2012; Hoekman-Sites and Giblin, 2012; Irregher et al., 2012; Knipper et al., 2012; Oeltze et al., 2012a; Oeltze et al., 2012b; Sofeso et al., 2012; Stephan et al., 2012; Bentley et al., 2013; Giblin et al., 2013; Hofmann et al., 2013; Sheeres et al., 2013; Wahl and Price, 2013). These archaeological studies when combined with
modern geological and hydrological analyses provide numerous examples of the strontium values of the underlying bedrock geology of the region, particularly in central and southern Germany (Brewer and Lippolt, 1974; Drach et al., 1974; Hoffman and Köhler, 1973; Kalt et al., 1974; Altherr et al., 1991; Buhl et al., 1991; Horn et al., 1994; Price et al., 1998; Aubert et al., 2002; Schweissing and Grupe, 2003; Bentley et al., 2003; Bentley et al., 2004; Price et al., 2004; Tütken et al., 2004; Bentley and Knipper, 2005; Ufrecht and Hölzl, 2006; Knipper et al., 2012; Stephan et al., 2012; Oeltze et al., 2012a; Oeltze et al., 2012b; Wahl and Price, 2013).

In 2005, Bentley and Knipper (2005) published a comprehensive study of archaeologically derived strontium isotope ratios in the upland and lowland areas in southwestern Germany. Bentley and Knipper (2005) found that significant differences in the bedrock geology of the upland and lowland areas were reflected in the isotope ratios of the bones and teeth of archaeological pigs, with the loess and alluvial deposits of the sedimentary lowlands ranging between 0.7086 and 0.7103 and the gneiss and granite-rich upland areas ranging between 0.710 and 0.722. Similar distinctions in isotope ranges were also found in the Bavarian region of southeastern Germany (Schweissing and Grupe, 2003; Sofeso et al., 2012). Schweissing and Grupe (2003) found that gneisses and granites found northeast of the Danube river displayed isotope values above 0.710, while areas of megagabbro interspersed in the granitic region revealed much lower values around 0.706 and carbonate loess sediments south of the Danube ranged between 0.7080 and 0.7095.

Modern oxygen isotope samples from Germany have suggested that that mean annual δ¹⁸O rates fall between -6.9‰ and -11.2‰ and become more negative when
moving eastward away from the Atlantic Ocean and southward with increasing altitude toward the Alps (Bentley and Knipper, 2005; Oeltze et al., 2012a; Tütken et al., 2008). Individuals from central and southern Germany usually display oxygen values ranging between -8.7‰ and -11.2‰, while individuals from the volcanic regions in northwest Germany display oxygen values between -7.5‰ and -8.7‰.

**Austria**

A recent study by Irrgeher et al. (2012) on 49 individual associated with Corded Ware and Late Bell Beaker cultures (2600-2200 BC) from archaeological sites at Franzenhausen in the Lower Traisen valley found Sr ratios of tooth enamel that ranged between 0.7086 and 0.71206. However, six individuals were found to be more than two standard deviations from the mean and were therefore considered to be non-local (Irrgeher et al., 2012). Therefore, the range for the area was recalculated and found to be between 0.70876 and 0.71111 with a mean of 0.70994. The tooth $^{87}\text{Sr}/^{86}\text{Sr}$ mean is almost identical to the mean of local soil samples, which was 0.70995 (range: 0.71007-0.70989). Analyses of the Tyrolean Iceman found that oxygen isotope values for the Austrian/Italian Alps are around -11.5 ± 2.6‰ VSMOW (Müller et al., 2003; Evans et al., 2006). The iceman’s teeth displayed oxygen values of -6.07‰ and -6.34‰ respectively, while the teeth of modern people from the same area ranged from -5.29‰ to -8.20‰ $\delta^{18}\text{O}$-VPDB (Müller et al., 2003).

**Italy**

Isotope work on limestones and quartz-diorites conducted by Herz and Dean (1986) and Cortecci et al. (1979) suggested that the strontium isotope range of the northern Italian Alps is expected to be between 0.7079 and 0.7128. An analysis of volcanic rocks, such as tephrites and leucites, in southern Italy yielded a similar range,
0.7071 to 0.7102, despite the differences in rock lithology (Hoffs and Wedepohl, 1968). The considerable overlap in isotope ranges between the northern Italian Alps and the Alpine regions of southern Germany should be mediated by differences in the oxygen isotope values from the southern German Alps (-9.4‰ to -11.2‰) and the northern Italian Alps (-8‰ to -9‰) (Longinelli and Selmo, 2002). Moreover, variability in the isotope range of volcanic rocks from Germany (0.7031 to 0.7054) and Italy (0.7071 and 0.7102) aids in distinguishing the isotope signatures of unknown individuals from these disparate regions of Europe (Hoffs and Wedepohl, 1968).

**Croatia**

Regarding oxygen isotope frameworks in Croatia, a 2014 study of Iron Age, Roman and Medieval Croatian archaeological materials from the Ravi Kotari region of the Dalmatian Coast indicate that the oxygen isotope values from faunal and human remains falls within the expected range for Adriatic-Dinaric limestone karst (Lightfoot et al. 2014; Palinkaš et al. 2009). Local hydrologic analysis of the River Krka near Sibenik produced a δ¹⁸O range of -7.8‰ to -6.8‰, while the mean δ¹⁸O precipitation value at Zadar is -5.6‰ and -6.3‰ at Komiža on the island of Vis, indicating that archaeological fauna, which range from -6.4 ± 1.5‰ to -7.2 ± 1.5‰, seem to approach the δ¹⁸O values expected for precipitation (Lojan et al., 2004; Vreča et al., 2006; Lightfoot et al., 2014). The strontium values of the Adriatic-Dinaric limestone karsts that make up a large part of Croatia are expected to fall around 0.7092, the strontium value of seawater, due to the fact that marine limestone isotope signatures like those found on the Croatian coast usually approximate the strontium value of seawater (Bentley, 2006). The strontium isotope range for local Croats is expected to be ~0.7090 with oxygen stable isotope ratios ranging from -4.0‰ to -7.0‰.
**Bosnia and Herzegovina**

Bosnian isotope studies have tended to focus on specialized areas. For example, Uztaszewski et al. (2009) found that the Sr ratios of volcanic rock of the North and South Kozara Mountains in northern Bosnia range between 0.7038 and 0.7062 (North Kozara) and 0.7027 (South Kozara). Strontium ratios of barite ores from the Mid-Bosnian Schist Mountains (MBSM) and Southeastern Bosnia (SEB) have also been analyzed (Jurković et al., 2010). The Paleozoic complex of the MBSM consists mostly of Lower Paleozoic (Ordovician, Silurian and Devonian) rocks and Lower to Middle Carboniferous and Upper Permian rocks; the barites of this region yielded $^{87}\text{Sr}/^{86}\text{Sr}$ values of 0.7117 and 0.7125 (Jurković et al., 2010). The SEB consists of a Paleozoic complex (Upper Silurian, Devonian) of dolomitic limestone, chert, limestone schists and sandstone overlain by Lower to Middle Carboniferous phyllite schists and Upper Permian schists, sandstones, conglomerates and limestones; the SEB barites display strontium values of 0.7109 and 0.7141 (Jurković et al., 2010). The δ$^{18}$O$_{VPDB}$ values of barite ores from the SEB range from -6.50‰ to -9.90‰ while those of the MBSM range from -6.66‰ to -10.33‰ (Jurković et al., 2010). However, the isotopic composition of barite ores is not necessarily reflective of the much of the bedrock geology of Bosnia.

**Eastern vs. Western European Lead Isotope Composition**

While there are fewer studies concerning lead isotope concentrations in contemporary Europe, a recent study by Kamenov and Gulson (2014) suggests that there are differences in the lead isotope signatures of northern/western Europe and eastern Europe. Utilizing a MANOVA statistical test, Kamenov and Gulson (2014) found that northern and western European $^{206}\text{Pb}/^{204}\text{Pb}$ ratios were statistically significantly lower than those of modern eastern Europeans. An earlier study had suggested that
there might be variability in lead ratios in Romania, but that study should be treated cautiously due to the fact that it primarily involved a single individual (Rauch et al. 2007). The contemporary context presents the possibility that these individuals were exposed to a vast amount of anthropogenic lead due to the introduction of leaded gasoline, which resulted in a steep decrease in the $^{206}\text{Pb}/^{204}\text{Pb}$ ratio of atmospheric Pb (Weiss et al., 1999; Kamenov and Gulson, 2014). However, though leaded gasoline was first produced in the 1920s, leaded gasoline only became commercially available in Europe in 1945, meaning that the individuals in this study were born too early in the 20th century to be affected by the polluting effects of leaded gasoline (Komárek, 2008).
Figure 4-1. Surficial Geology of Europe. Eric Gaba/CC BY-SA 3.0.
CHAPTER 5
MATERIALS AND METHODS

Sample Selection and Biological Profile Assessment

During the summer of 2015, bone and tooth samples were collected from individuals whose remains were being housed at the Sutina Mortuary in Mostar, Herzegovina. Sample collection was facilitated with the aid of the ICMP in collaboration with the Bosnian State Prosecutor and the Mostar Prosecutor’s office. The skeletal assemblage encompassed the contents of a total of nine body bags, each of which were assessed separately. The skeletal material was laid out on an autopsy table in order to establish the condition of the remains and determine the minimum number of individuals for the entire assemblage.

To avoid the possibility of resampling the same individual many times, any and all bone samples were taken from the sample element: the right femur. During sample collection, a concentrated effort was made to ensure that the area of the femoral shaft was free of possible diagnostic features, such as skeletal trauma, pathological conditions or idiosyncrasies. Regarding teeth, whenever possible, the third molar was selected for the purpose of sampling.

Sampling an individual’s permanent third molars provides an excellent indication of their location during mid-adolescence (crown development: 12-16 years) (Hillson, 1996). This tooth seemed the most useful indicator for WWII era soldiers, who tended to be young. If third molars were unavailable or unerupted, adult second molars were used. Utilizing second and third molars rather than first molars avoided potential problems related to the fact that first molar tooth mineralization/crown formation occurs prior to weaning and may reflect the location of the mother rather than the child (Schurr
and Powell, 2005; Wright and Schwarcz, 1998). Therefore, sampling of the first molars was avoided whenever possible. The majority of the teeth were extracted directly from either the mandible or the maxilla. In cases where there were loose molars present, an effort was made to reposition them into the alveoli of all the mandibles and maxillae present to ensure that the teeth of an individual who had already been sampled was not sampled twice. However, due to the severity of the comingling of the remains in the nine body bags, it is possible that there could be some overlap among the teeth even though every effort was made to limit this possibility.

Whenever possible the bones were also assessed to construct a biological profile, which included age, sex, ancestry and stature. The incomplete nature of the remains and the issue of commingling made it necessary to use whatever methods were available in order to make a quick determination of the biological profile. When pelves and skulls were present, they were assessed for age and sex. The sex estimation was conducted primarily to evaluate the idea that all of the WWII era individuals exhumed and housed at Sutina were male. The skull was also used as a primary indicator of ancestry, utilizing primarily morphoscopic traits. The ancestry assessment was conducted to ensure that the individuals in the sample were all European as expected. Stature assessments were conducted by measuring intact femora and plugging the measurement into the standard stature equation for European males.

Environmental samples were collected over the summers of 2015 and 2016. Rock and plant data were collected from various locations in Bosnia and Croatia in order to better understand the proposed isotope baseline for the region. All effort was
made to obtain samples from as many geologically distinct areas of BiH and Croatia as possible, however due to time, safety and budget constraints, there were areas that have not yet been analyzed. Therefore, these data should be viewed as a preliminary assessment of the expected isotope baseline in the western Balkans.

All environmental samples were taken as far away from the road as possible to avoid any complications involving additional anthropogenic lead. However, particularly in Bosnia, it is not advisable to stray too far from established paths due to the fact that portions of the country have not been cleared of landmines. Though these locales are often marked, they can encompass large areas and it is best not to wander around unless one really knows the terrain. In regard to plants, areas of ploughed fields or with evidence of agricultural activity were avoided because agricultural pesticides tend to leach into local soils and have the potential to contaminate the data. Plants located next to rivers or other bodies of water were also avoided because the riverine environment can also alter the isotope signal in the plant material.

Isotope Preparation of Human Teeth

All samples were cleaned, prepared and pre-treated (if necessary) in the Bone Chemistry Laboratory at the University of Florida. Prior to analysis, bone samples were manually cleaned and sonicated with DI-H₂O. Each piece of bone sample was photographed and then reduced to powder in a ring mill housed in the Department of Geological Sciences at the University of Florida. However, after the bone samples were prepared, the risk of diagenetic exchange was deemed too great. Therefore, rather than going to the expense of sampling them, it was decided it would be more prudent to only sample the molars. Moreover, bone collagen analysis was not conducted because the diets of central Europeans, such as Germans, were deemed to be too similar to that of
modern people in the Balkans. The carbon samples from the tooth apatite bear this assumption out, as they do not indicate substantial variety in food consumption between individuals.

Approximately one-third of the molar was removed using a dental drill and the resulting subsample was used in the rest of the analysis. Once the subsample was removed, dental samples were cleaned and buffed with a diamond-hardened Brasseler NSK UM50TM dental drill magnified under a Leica S6E microscope in order to remove any and all adhering particulate material that could potentially affect the integrity of the isotope results. During drilling, any adhering dentin was also removed so that only the cleaned enamel chunk remained. Chunked tooth enamel samples were preferred over bone because the avascular nature and the high proportion of non-porous hydroxyapatite matrix in tooth enamel reduces the risk of diagenetic contamination. (Bentley, 2006). Once the samples were sufficiently clean, each enamel sample was placed in an agate mortar and ground into a powder. A Mettler-Toledo balance was used to weigh each sample and the sample was placed in a 1.5 mL centrifuge tube. Following each use, the agate mortar and pestle sets were rinsed with 50/50 ~6 M hydrochloric acid (HCl) under a fume hood, rinsed with DI-H₂O and baked at 200°C for two hours in order to prevent sample contamination.

After the dental samples were ground and placed in the tubes, each sample was pretreated with 2.5% sodium hypochlorite (NaOCl) solution for 8 hours in order to remove any extraneous organic material. Samples were then centrifuged and rinsed to neutral pH in DI-H₂O and 0.2 M acetic acid (CH₃COOH) was added to each sample for 8 hours to ensure removal of any remaining soluble carbonates. Samples were once
again centrifuged and rinsed to neutral pH in DI-H\textsubscript{2}O, frozen until solid and lyophilized for at least 48 hrs.

Environmental Sample Preparation

Rock Sample Preparation

Carbonates

Sedimentary carbonate rocks were pulverized with a sledgehammer in order to obtain samples from the clean inner areas of the rock in order to limit the potential for exposure to anthropogenic and environmental elements, such as vehicle exhaust, that could alter the result of the isotope analysis. After the samples were pulverized, a 20 to 50 milligram sample was selected. The sample was weighed with a Mettler balance to ensure that sample did not exceed 50 mg because too large a sample can be problematic in terms of full sample dissolution. Five hundred μL of HNO\textsubscript{3} (optima) was slowly and continually added until the sample dissolved. On average 1.5 mL of HNO\textsubscript{3} (optima) was added in order for full dissolution to occur. The samples were then left uncapped for 24 hours on a hotplate at 120°C in the fume hood in order to evaporate to dryness.

Silicates

Silicate rocks were also pulverized with a sledgehammer in order to obtain samples from the clean inner areas of the rock. However, rather than dissolving small pieces of rock, the silicate samples were placed in a ring mill and reduced to powder. Approximately 50 mg of sample was then weighed using a Mettler balance. A drop of water was added to the sample prior to its placement in the Teflon\textsuperscript{©} vial to prevent the powdered substance from dissipating throughout the vial. Then 1 mL of HNO\textsubscript{3} and 2 mL of hydrofluoric acid (HF) were added to the silicate samples within the confines of a
fume hood. The samples were immediately tightly capped following the addition of the HF and placed on a hotplate heated to 120°C for 24 hours. The samples were then uncapped and allowed to evaporate to dryness within the fume hood.

**Plant Samples**

The crucibles that house the plant samples as they are reduced to ash were thoroughly cleaned with DI water and Versaclean soap. Then 6N HCl was added to the interior of each crucible in order to dissolve any leftover adhering particulate matter and the crucibles were left in a fume hood for 24 hours. After 24 hours, the 6N HCl was removed and the crucibles were thoroughly rinsed with DI water and left to dry. Prior to adding the sample to the crucible, all of the crucibles were labeled to ensure that each sample could be easily identified. Each plant sample was manually reduced to ensure that it fit in the crucible. The crucibles were placed in a rack and situated in a Muffle furnace heated to 550°C over a period of 3 hours to reduce the plant matter to ash. The oven and the exhaust van were turned off after the 3-hour period and the samples were left to cool in the furnace overnight.

While the samples cooled, 6N HCl was added to 15 mL centrifuge tubes, which were placed in a fume hood for 24 hours. The 6N HCL was then removed from the centrifuge tubes and they were rinsed with 4x H₂O to ensure the removal of any lingering acid. The centrifuge tubes were dried and 5 mL of 2N HCl (optima) was added to each tube. Each ashed plant sample was carefully placed on a piece of weigh paper than had been folded and then transferred to a labeled centrifuge tube so that the ashed material could react with the 2N HCl (optima). After all of the samples were transferred to their corresponding centrifuge tube, the samples were left for 24 hours.
Strontium and Lead Analysis

All sampling of pretreated tooth enamel took place in the clean laboratory facilities in the Department of Geological Sciences at the University of Florida. Reduced enamel samples were pretreated with 0.1 N acetic acid (CH$_3$COOH) for 30 minutes then rinsed to neutral with 4x dH$_2$O. Samples were dissolved in pre-cleaned Teflon® vials by heating them for 2-3 hours in 8 M nitric acid (50% NHO$_3$ (optima)) while capped. The samples were then uncapped and evaporated to dryness in a laminar flow hood over a 24-hour period. Following the procedure outlined by Pin and Bassin (1992), the samples were loaded onto cation exchange columns that were packed with Sr- or Pb-selective crown ether resin (Sr-spec, Eichrom Technologies, Inc.) to separate Pb or Sr from other ions. In the case of Pb, the column was washed with 2 mL of 6N HCL (optima). Then 200 µL of sample, which had been dissolved in 400 µL of 1N Hydrobromic acid (HBr), was added to the column. The column was then washed with 1 mL of 1N Hbr three times, each wash occurring directly after the previous wash had finished. After the last Hbr wash, the Teflon® vials containing the rinsed sample were exchanged for labeled pre-cleaned, empty Teflon® vials that would collect the lead sample. To collect the final lead sample for analysis, 1 mL of 20% NHO$_3$ was placed in the column.

The Teflon® vials containing the samples from the 1mL Hbr washes was evaporated to dryness on a hotplate so that they could be used for Sr collection. Then 200 to 300 µL of 50% NHO$_3$ (optima) was added to each sample so as to ensure that any remaining HBr was removed and each vial was evaporated to dryness on a hotplate. The 100 µL Teflon® columns were rinsed at least three times with 4x H$_2$O in order to remove the Pb-selective mesh Dowex 1X-8 resin and then packed with 100 µL of Sr-spec resin. The column was then washed with 1 mL 4x H$_2$O and equilibrated with 1
mL of 3.5N NH₀₃. The evaporated samples were reconstituted by dissolving them in 200 μL of 3.5N HNO₃ and adding them to the column. The columns then underwent four successive washes of 100 μL of 3.5N HNO₃. The samples were then washed one final time with 1 mL of 3.5N HNO₃. After this, the Sr sample was collected in the original Teflon© container which contained the strontium sample prior to washing and 1.5 mL of 4x H₂O was added. Following the time-resolved analysis (TRA) method of Kamenov et al. (2006), tooth enamel strontium and lead ratios were measured using a “Nu-Plasma” multicollector inductively-coupled-plasma mass spectrometer (MC-ICP-MS). Strontium isotope ratio precision was based on the NBS 987 standard for \(^{87}\text{Sr}/^{86}\text{Sr} = 0.710248.

Similar procedures were followed when dealing with the environmental samples. However, in regard to the Sr column, the environmental samples were reconstituted by dissolving them in 500 μL of 3.5N HNO₃ and adding 100 μL of the reconstituted sample to the column. In the case of carbonate and silicate rocks, lead samples were reconstituted in 500 μL of 1N HBr and 100 μL of the reconstituted sample was added to the Pb column. It is also worth noting that while the rock samples were analyzed for both Pb and Sr, the plant samples were only evaluated for Sr and therefore no Pb analysis was conducted.

**Concentration Sample Preparation**

At the beginning of the process, once the tooth chunk sample was dissolved, 0.1 mL of each sample was added to a second vial along with 2.9 mL of 5% HNO₃ + 8pp6 Re-Rh and 150 pp of HF. These samples were for concentration, then were immediately capped so as to avoid the possibility that any of the sample could evaporate and alter the calculated weights required for the sample. The concentration of trace elements within the sample was measured using an Element 2 ICP-MS.
Oxygen and Carbon Apatite Analysis

The measurement of dental $\delta^{13}C$ and $\delta^{18}O$ values occurred by reacting pretreated dental samples in 100% orthophosphoric acid at 70°C using a Kiel III carbonate preparation device. Evolved CO$_2$ gas was measured online using a Finnigan-MAT 252 mass spectrometer. All isotope results were reported in standard delta (‰) notation utilizing a Vienna Pee Dee Belemnite (VPDB) standard.
CHAPTER 6
RESULTS

Strontium and Lead

Initial analyses of the 24 teeth from the remains housed at the Sutina mortuary indicate that these combatants form an assemblage of individuals with mixed geographic origins (Table 6-1). When the $^{87}\text{Sr}/^{86}\text{Sr}$ and $^{206}\text{Pb}/^{204}\text{Pb}$ isotopes are plotted together several individuals plot between 17.8 and 17.9 for lead with $^{87}\text{Sr}/^{86}\text{Sr}$ ratios ranging between 0.7995 and 0.7115 (Figure 6-1). The high strontium ratio coupled with the low lead ratio suggests that these individuals were born in a different geological environment than others in the sample. On the other end of the scale are certain individuals whose $^{206}\text{Pb}/^{204}\text{Pb}$ ratios range between 18.3 and 18.4 and whose $^{87}\text{Sr}/^{86}\text{Sr}$ ratios fall between 0.7080 and 0.7086, values one would expect to see in populations residing in an environment with a large proportion of coastal limestones. Due to the fact that distinctions between geographically divergent populations are recorded at the 3\textsuperscript{rd} or 4\textsuperscript{th} significant figure after the decimal point, an individual with an $^{87}\text{Sr}/^{86}\text{Sr}$ ratio of 0.7080 is likely to be geographically distinct from an individual whose teeth display an $^{87}\text{Sr}/^{86}\text{Sr}$ ratio of 0.7115. The individual who displays the highest $^{87}\text{Sr}/^{86}\text{Sr}$ value (0.7115) also exhibits a $^{206}\text{Pb}/^{204}\text{Pb}$ ratio of 18.318, a data combination that is unique among these individuals. Individuals not belonging to any of these groups tend to cluster between 0.7087 and 0.7098 and 17.9 and 18.17 in regard to $^{87}\text{Sr}/^{86}\text{Sr}$ and $^{206}\text{Pb}/^{204}\text{Pb}$ respectively.

Carbon

Regarding the carbon data, the results fall between $-9.04\%_o$ and $-14.49\%_o$, suggesting that these individuals relied on a C\textsubscript{3}-based diet, including plants such as
wheat and barley, and terrestrial animals feeding on C$_3$-based plants and/or fodder. This result is unsurprising when one considers that all of the individuals in the sample are European and C$_3$ plants tend to factor more heavily into the European diet. Moreover, the meat, wheat and legume heavy diet favored by those in the western Balkans is fairly similar to that of Germans, Austrians and other central Europeans. However, when the carbon results are compared to oxygen, the data suggest that certain individuals were potentially consuming more marine resources than others (Figure 6-2). One individual has a $\delta^{18}$O$_{en}$ of -3.99‰ and a $\delta^{13}$C$_{en}$ of -9.04‰, results that are $^{13}$C and $^{18}$O-enriched more so than any other individual assayed in this sample. These data suggest that this person potentially consumed more marine foods. However, there is also the possibility that this individual was consuming a more C$_4$ based diet. The same individual also displays an $^{87}$Sr/$^{86}$Sr value of 0.70889, a result more consistent with one would expect to see for a coastal population. Three other individuals display oxygen isotope values that are akin to those of the majority of the sample, but $\delta^{13}$C$_{en}$ values that range between -9.97‰ and -11.47‰, a range that is lower than the -13‰ to -14.5‰ $\delta^{13}$C$_{en}$ displayed by the majority of these combatants. It is possible that marine food contributed more substantively to the diet of these three individuals as well though once again C$_4$ plants may have also been contributing to the diet.

The lack of distinction between the diets of these individuals in regard to plant consumption does suggest that there are not many C$_4$ consuming outliers among this group of unidentified combatants. This indicates that it is unlikely that the individuals in the sample are from regions with heavy consumption of C$_3$ plants, reinforcing the notion that it is not likely that anyone in the grave(s) is not of European descent.
Moreover, the heavy reliance on C₃ plants also indicates that the childhoods of these combatants were not heavily influenced by the importation of foreign consumables. One of the primary concerns regarding isotope work and modern populations is the potential for the contamination of the local signature due to the consumption of foreign foods. Currently globalization has made it possible to eat seasonal foods all year round. In industrialized nations in particular, it is now possible to eat grapes grown in Chile, artichokes grown in California and cattle raised in Australia, all in the span of the same meal. Consuming foods grown all over the globe will confound the isotope signature found in human bones and teeth. The fact that individuals found in this sample are not ¹³C enriched (indicating C₄ carbon input, such as maize or sorghum) does not completely refute the idea that these individuals consumed imported goods, because it is possible that some of their C₃ resource were imported from other parts of Europe.

This bears consideration because countries such as Germany did not have the resources to feed themselves. For example, bad harvests in 1934 made it necessary to import food and Germany increased its food imports by 64 percent between 1936 and 1939 (Berghoff, 2001). Yet the Nazi regime also encouraged German consumers to buy German goods and use German substitute foods, such as quark in place of butter and wild and local fruits in place of imported tropical ones, so it is possible that these men, particularly the younger ones, were consuming local C₃ resources (Berghoff, 2001). Thus, the data do suggest that they were eating resources that are traditionally what one would expect to see in a European diet and that foreign C₄ imports were not a large part of local consumption at the time.
The oxygen isotope data are more in line with what one would expect in the Balkans than in Germany. The δ\(^{18}\)O results suggest that the majority of these individuals fall between -4.5‰ and -5.96‰, with two individuals falling outside of this range at -7.31‰ and -8.16‰ respectfully (Figure 6-3). The majority of the oxygen isotope results are consistent with what would one would expect to find in the southern Mediterranean rather than in Germany or central Europe. However, box and whisker plots comparing the WWII isotope data with data from archaeological sites in Croatia and in various parts of Germany (see Figures 6-4 and 6-5) indicate that there is overlap between the WWII individuals and oxygen isotopes from the dentitions of individuals from the Western Balkans and Germany. It should be noted that there is the potential for a certain proportion of error in the comparison between the WWII data and the German archaeological data because the WWII oxygen isotope were converted from V-PDB to bone phosphate (Lightfoot and O’Connell, 2016). This was achieved by converting the remains from carbonate oxygen VPDB to carbonate oxygen VSMOW using the following equation:

\[
\delta^{18}\text{O}_{(\text{VSMOW})} = 1.03091 \times \delta^{18}\text{O}_{(\text{VPDB})} + 30.91
\]

Then the sample was converted to phosphate via this equation:

\[
\delta^{18}\text{O}_{\text{PO}_4} = 1.0322 \times \delta^{18}\text{O}_{\text{CO}_3} – 9.6849
\]

Additionally, there are two individuals who fall within the same range for carbon as the majority of the sample, but display δ\(^{18}\)O en values that are lower (-7.31‰ and -8.16‰,) than the majority of the sample (between -5‰ and -6‰), suggesting that they could have grown up at higher elevations farther from the coast. Interestingly, the
individual with the δ¹⁸O of -7.31‰ also displays one of the lower ⁸⁶Sr/⁸⁷Sr ratios (0.7087), a ratio that would be consistent with coastal limestone.

**Environmental Isotope Results**

In eastern Croatia, the environmental strontium isotope values ranged between 0.7093 and 0.7139, values that are higher than those found along the coast. The values along the coast ranged from 0.7075 to 0.7080. These values are consistent with what one would expect for limestone carbonate rocks. The majority of the Croatian coast is underlain by the Adriatic Dinaric Carbonate Platform so it is unsurprising that the isotope results mirror the values expected for limestone carbonates. The higher values expressed by the eastern Croatian environmental samples is similar to the value of the northeastern most data point in Bosnia (0.7105). Eastern Croatia tends to contain large areas of Holocene and Neogene alluvium, which may vary in their isotope composition depending on where the dust that contributed to the alluvium originated.

The small amount of lead data available derives from Plitvice Lakes National Park in the mountainous limestone karst area of central Croatia and Lokrum Island, which is a small limestone island directly adjacent to Dubrovnik in the far south. In both cases, the ²⁰⁶Pb/²⁰⁴Pb (31.6557 and 44.6835 respectively) is significantly higher than it is for the individuals found in the study. This is also true for the limestone rocks from western Bosnia (25.4412) and Herzegovina (25.3957).

The environmental data from Bosnia tends to be more variable (Table 6-2 & 6-3.) Samples taken along the route between Sarajevo in central Bosnia and Prisoje and Grabovica in Western Bosnia ranged between 0.7074 and 0.7086. This area is in the Dinaric Alps, which are composed primarily of limestone karst and dolomites; marine limestones tend to fall within this range. The same is true of the sample from Blagaj in
Herzegovina (0.7075 (rock), 0.7089 (plant)) and areas in the northwest around Kljuć and Bihać (0.07089 for both samples respectively). It is worth noting that while both of the rock samples from around Sarajevo ranged between 0.7089 and 0.7080, the plant sample from Sarajevo displayed a disparate value of 7.097. There were also two other samples that contained higher $^{87}\text{Sr}/^{86}\text{Sr}$ values. One of these samples was a rock sample from the area southeast of the city of Jajce (0.7124) and the other was from around Derventa (0.7105) in northeast Bosnia near Bosnia’s northern border with Croatia. The area southeast of Jajce comprises the Central or Mid-Bosnian Schist Mountains, which are composed of Silurian—Carboniferous metaphoric rocks, as well as Permian metaryolites (Palinkaš et al. 2008). The presences of schists and metaphoric rocks likely explains why the rock sample exhibits a higher $^{87}\text{Sr}/^{86}\text{Sr}$ value. However, it should be noted that even though the Mid-Bosnian Schist Mountains refer to schist, the area is still interspersed with carbonate rocks, such as limestones (Palinkaš et al. 2008). The higher $^{87}\text{Sr}/^{86}\text{Sr}$ noted in the area near Derventa is likely to be attributed to the variability of the Holocene and Neogene alluvium overlaying parts of northeastern Bosnia just as it does eastern Croatia.

While the majority of the limestone $^{206}\text{Pb}/^{204}\text{Pb}$ data (25.3019 to 44.6835) were far higher than those of the unknown individuals in the study, the rock samples from Sarajevo (19.0424) and the area around Mt. Igman (18.9006) are closer to those of these combatants. However, these samples still fall outside of the range (17.8 to 18.4) exhibited by the experimental data.
Table 6-1. Carbon, oxygen, strontium and lead isotope data for all of the sampled teeth.

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<th>BCL #</th>
<th>$\delta^{13}$C (‰ vs. VPDB)</th>
<th>$\delta^{18}$O (‰ vs. VPDB)</th>
<th>$^{87}$Sr/$^{86}$Sr</th>
<th>$^{208}$Pb/$^{204}$Pb</th>
<th>$^{207}$Pb/$^{204}$Pb</th>
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Figure 6-1. $^{87}\text{Sr}/^{86}\text{Sr}$ vs. $^{206}\text{Pb}/^{204}\text{Pb}$ scatterplot.

Figure 6-2. $\delta^{13}\text{C}$ vs. $\delta^{18}\text{O}$ scatterplot.
Figure 6-3. $^{87}\text{Sr}/^{86}\text{Sr}$ vs. $\delta^{18}\text{O}$ scatterplot.

Figure 6-4. $^{87}\text{Sr}/^{86}\text{Sr}$ vs. $\delta^{13}\text{C}$ scatterplot.
Figure 6-5. Box and whisker plot comparing oxygen isotope data from Iron Age, Roman, and Medieval Croatia with isotope data from WWII. The bold center line displays the median. The whiskers extend 1.5 times the interquartile range from the 25th and 75th percentiles. Outliers are represented by dots. The numbers of the x-axis represent the number of individuals in the sample. The Medieval Croatian data are adapted from Lightfoot, E., M. Šlaus, and T.C. O’Connell. 2014. “Water Consumption in Iron Age, Roman, and Early Medieval Croatia.” *American Journal of Physical Anthropology* 154 (4): 535–43.
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Strontium

An isotope map published by Voerkelius et al. in 2010 utilized the strontium ratios from 656 European spring waters to assess whether the strontium signature in the spring waters accorded well with the lithology and geochronology of their point of origin. The strontium composition of the waters is based on the soluble minerals that chemically exchange with the water as it percolates through rock and soil strata (Horn, 2005; Voerkelius et al., 2010.) According to the authors, precipitation processes only change the strontium content, rather than altering the isotopic signature (Voerkelius et al., 2010). With few exceptions, the $^{87}\text{Sr}/^{86}\text{Sr}$ ratios in the spring waters correlate with the physical geography of their points of origin; when the strontium ratios of wheat and honey of known origin were tested, they also correlated well with the geophysical map.

This suggests that the map is good overall predictor of what one would expect the underlying strontium to look like when compared to experimental results. Therefore, the map created by Voerkelius et al. (2010), in addition to other isotope studies related to specific European regions, has been utilize here to evaluate the relationship between that range of strontium ratios among the unknown Axis combatants in this study and the expected isotope ranges for different regions of Europe. Despite the fact that the Axis combatants recovered from Bosnia are historically unlikely to be from certain regions of Europe, such as Britain, France, Spain or Scandinavia, all possible regions were evaluated to so as not engender bias.

The strontium data do not support the possibility that these individuals originated in any part of Europe that consists primarily of Cenozoic, Mesozoic or Paleozoic
igneous (volcanic) rocks and ophiolites. Volcanic rocks usually display an isotope signature between 0.70200 and 0.70700 and none of the samples from the human remains found in this sample fall within that range. This rules out all of Iceland, certain areas of Norway, Northern Ireland and Scotland, parts of Romania and Slovakia, part of Northeastern Bosnia and southern Serbia, and part of Bulgaria.

Moreover, the majority of Scandinavia does not fit the experimental data. The strontium ratios of the Precambrian and Paleozoic sediments and metamorphic rocks that make up the majority of Sweden, Norway and Finland usually fall above 0.7013 and are more likely to fall above 0.7200, making them outside of the range of the of these unknown individuals (Voerkelius et al., 2010). Moreover, the oxygen isotopes range between -10‰ and -14‰, making them more negative than what is observed in the experimental data (Lightfoot and O’Connell, 2016).

With the exception of the Northeast corner and the far eastern end where it borders Poland and Slovakia, the Czech Republic is comprised of the same Precambrian and Paleozoic sediments (0.71301-0.78000) and metamorphic rocks that make up the majority of Scandinavia. Rocks of this age and lithology can also be found in the Alpine region, extending through southern Switzerland and Austria and into the very far north of the Italian Alps. Additionally, the Pyrenees Mountains, the majority of Portugal (with the exception of the area around Lisbon) and Galicia, the Sierra Morena and the Cordillera Central in Spain are made up of these types of rocks. The Massif Central in the area of Auvergne and Limosin and the coastal region comprising Brittany and the majority of Normandy and Pays-de-la-Loire in France are also made up of Paleozoic sediments and metamorphic rocks that fall outside of the range of these
unknown combatants. All of Scotland and Northern Ireland also fall into this category, as does Wallonia in Belgium and Southern Nordrhein-Westfalen, the majority of Rheinland-Pfalz, the eastern edge of Baden-Württemberg and the far western edge of Saxony in Germany.

Bands of Precambrian and Paleozoic sediments and metamorphic rocks can also be found in eastern Romania, southern Serbia, Macedonia, the southern half of Bulgaria and along the Eastern edge of Turkey. However, there has not been as much isotope testing here, so it is possible that these areas could display an isotope signature that does not conform to pattern noted in Voerkelius et al. (2010).

Despite European areas that can be excluded as possible matches with the unknown combatants in this study, the range of isotope ratios (0.708047-0.711537) noted among these individuals still covers a large area of Europe. The Mesozoic (0.70701-0.70900) and Cenozoic (0.70901-0.70110) sediments that comprise these parts of Europe include all of Denmark, the Netherlands, Poland, Slovenia, Croatia and Greece. They also include the eastern halves of Spain and England, all of France except for the Precambrian and Paleozoic areas mentioned above, Flanders (Belgium), northern Austria (with the exception of the far north), all of Italy except for the far north and northern and central Germany, as well as Bavaria. With the exception of small areas of volcanic rocks, ophiolites and Cenozoic intrusives, Slovakia, Hungary, Bosnia, and Montenegro are also all comprised of these Mesozoic and Cenozoic sediments.

The majority of the environmental data collected from BiH and Croatia suggests that the $^{87}\text{Sr}/^{86}\text{Sr}$ data falls within the lower range of the $^{87}\text{Sr}/^{86}\text{Sr}$ values exhibited by these unknown combatants. However, the $^{87}\text{Sr}/^{86}\text{Sr}$ values from samples taken
Sarajevo (0.7098), the Mid-Bosnian Schist Mountains (0.7124) and alluvial deposits in eastern Croatia and northeast Bosnia (0.7105 and 0.7139) do encompass the higher $^{87}\text{Sr}/^{86}\text{Sr}$ values displayed by these unknown combatants. However, the environmental data should be treated with some caution because $^{87}\text{Sr}/^{86}\text{Sr}$ signatures collected from the geological substrate may vary significantly from the $^{87}\text{Sr}/^{86}\text{Sr}$ signatures noted in the bioavailable strontium that is accessible via the food chain (Slovak and Paytan, 2011).

While all of the areas of Europe mentioned in the previous section can be considered as potential matches for the individuals in question, the probable Axis affiliation of the combatants and their location in Herzegovina suggests that certain locations are more likely than others. For example, the British were part of the Allied forces who fought against the Axis. Moreover, though the British actively encouraged the resistance movements in the Balkans, they seldom sent many of their own soldiers into the region.

Denmark, Poland, Belgium and France were all occupied countries. Denmark, France and Belgium all had small volunteer combat units who fought alongside their Nazi occupiers in the East. However, most of the military actions in which they were involved were against the Soviet Union and did not extend into the Balkan region. The Poles never actively collaborated or even surrendered to the Germans and there does not appear to be any evidence that Polish soldiers ever entered the Balkans. There were a few Greeks who joined the *Waffen SS*, but they also do not appear to have fought in Yugoslavia. As for the Spanish, they were engaged in their own civil war at the time and it seems highly unlikely that Spaniards would have found themselves in occupied Yugoslavia.
In regard to Hungary and Bulgaria, both countries did commit troops to the initial Yugoslav invasion, but they appear to have done little of the actual fighting (Burgwyn 2006). Moreover, the territories that were ceded to the Hungarians and the Bulgarians, the Banat and the majority of Macedonia respectively, are not in close proximity to Herzegovina, where the remains of these soldiers were interred. However, the vagaries of the grave location in Herzegovina and the fact that there is the possibility that this is a mass secondary burial, mean that one must consider the possibility that these individuals derive from Hungary or Bulgaria.

The strontium ratios recorded for these unknown combatants do accord well with what one would expect to see for in certain parts of Germany. When compared to an earlier study conducted by Bentley and Knipper (2005), most of the experimental data fit within the strontium range found for the sedimentary lowland regions of the southwest (0.7086 to 0.7103). Many of these data would also fit into the carbonate loess sediments found south of the Danube (0.7080 and 0.7095). The three teeth that display strontium values that range between 0.7109 and 0.7115 fall within the lower side of strontium range of granite and gneiss-rich southwest uplands (Bentley and Knipper 2005).

However, the oxygen isotope values, the majority of which range between -4.5‰ and -5.96‰ are more positive than one would expect from German individuals and more consistent with individuals from southern Europe. This is interesting in light of the fact that one of the identification tags associated with these remains indicates that at least one of the individuals associated with these remains was a member of the 85th Luftwaffe Flak Abteilung, which was attached to the 6th SS Mountain Division, a division
that participated in Operation Marita, the Nazi invasion of Greece, and was therefore only located in the Balkans during the initial invasion of Yugoslavia in April of 1941. The 6th Mountain division is known for their exploits bridging the Metaxas line at Rupel’s Gorge in central Macedonia, an area much farther south than Herzegovina (Kaatz, 1965). If these individuals are indeed associated with the initial invasion of Yugoslavia, it seems exceedingly unlikely that they could be local individuals because the Fascist Croatian state, the NDH, had not been established and the Yugoslav Muslim SS Division was not even proposed until 1943.

**Lead**

Initial interpretations of the data suggest that individuals who exhibited $^{87}\text{Sr}/^{86}\text{Sr}$ ratios above 0.7100 and $^{206}\text{Pb}/^{204}\text{Pb}$ ratio between 17.8 and 17.9 are a separate population than those individuals who display $^{87}\text{Sr}/^{86}\text{Sr}$ ratios below 0.7090 and $^{206}\text{Pb}/^{207}\text{Pb}$ ratios between 18.3 and 18.4. The individuals with high $^{87}\text{Sr}/^{86}\text{Sr}$ and low $^{206}/^{207}\text{Pb}$ ratios were originally interpreted as more likely to be of central European ancestry than those with low $^{87}\text{Sr}/^{86}\text{Sr}$ and high $^{206}\text{Pb}/^{207}\text{Pb}$ ratios, whose isotope signature more closely matches that found in eastern Europeans (Kamenov and Gulson, 2014). However, this notion of Central vs. Eastern Europeans was partially based on the idea that the increase in anthropogenic lead created by the introduction of leaded gasoline would have altered the lead signal in the remains (Kamenov and Gulson, 2014). Differences in lead isotopes would have been influenced by which Pb ore gasoline makers chose to import. The composition of western European gasoline, most of which was imported from the Broken Hill lead deposit in Australia, has been found to display lower $^{206}\text{Pb}/^{204}\text{Pb}$ ratios than that of Eastern Europe who imported most of their Pb ore from East Germany and Russia (Komárek et al., 2008).
However, this interpretation is considered unlikely because leaded gasoline was introduced to most of Europe around 1945 (Komárek et al., 2008). Tetraethyl lead was first added to gasoline manufactured by the Nazi state in the late 1930’s (Krammer, 1978). The need to manufacture tetraethyl lead as part of the German rearmament effort became obvious to the industrial manufacturer I.G. Farben in the mid-1930’s (Borkin, 1978). Utilizing the American company Standard Oil as an intermediary, I.G. Farben approached the Ethyl Gasoline Corporation, a joint venture of Standard Oil and General Motors, with the idea of building tetraethyl lead plants in Germany (Borkin, 1978). Though the Germans were very careful not to mention that the new tetraethyl lead plants would be used to provide gasoline to the Luftwaffe, the Du Pont Company, the principle stockholder at General Motors, objected to the deal on the grounds that it would be utilized to enrich the German military. However, the United States War Department expressed no such concerns and the Ethyl Gasoline Corporation formed a partnership with I.G Farben. The new tetraethyl lead plants were supposed to be operational by late 1939, meaning that tetraethyl lead technology would not be employed in the invasion of Czechoslovakia (Borkin, 1978). To ensure that tetraethyl lead would be available to the Luftwaffe by the proposed date of the invasion, in 1938 the Germans negotiated a deal with Standard Oil to purchase 500 tons of tetraethyl lead for approximately 20 million dollars (Borkin, 1978). The Luftwaffe and the Wehrmacht utilized most of this fuel, though it could also be allocated for civilian use (Krammer, 1978).

Thus, even though gasoline with a tetraethyl additive was employed in Germany in the late 1930s, leaded gasoline would not have contributed to the disparities exhibited
by these unknown individuals because their molar teeth would have formed prior to the introduction of leaded gasoline. Even if one were to propose that the youngest person recovered from these body bags was 18 years at the time of their death and they perished in 1945, the crown enamel formation of their teeth would have begun ~6 years earlier, just as leaded gasoline was introduced in Germany. Additionally, historical and osteological evidence suggests that several of the men examined in this analysis are in their mid-thirties, which would make them far too old to be subject to the anthropogenic effects to leaded gasoline.

Moreover, Pb analysis of ores in areas of central Europe has yield $^{206}\text{Pb}/^{204}\text{Pb}$ ratios that fall within the 18.3 to 18.4 range, a range that would normally be associated with modern populations from Eastern Europe if anthropogenic lead from gasoline was being taken into account. In their analysis of Early Bronze Age copper ores from Brixlegg and Insbruck regions of Austria, Höppner et al. (2005) found that some of the Triassic limestones from the area exhibited $^{206}\text{Pb}/^{204}\text{Pb}$ values ranging between 18.34 and 18.38. An analysis of Phanerozoic lead-bearing ores from central Europe, particularly from southern Germany, found that Upper Carboniferous-Permian polymetallic ore veins and Triassic, Pb-Ba ore vein types yielded $^{206}\text{Pb}/^{204}\text{Pb}$ ranges between 18.00 and 18.20 and 18.20 and 18.60 respectively (Bielicki and Tischendorf, 1991). This suggests that it would not be inconceivable for people in central Europe to exhibit the $^{206}\text{Pb}/^{204}\text{Pb}$ values noted in some of these unknown combatants. However, lead isotopes derived from rocks may vary significantly from bioavailable lead, so it is also likely that these environmental data do not represent the values expected in human bones and teeth. That said, the environmental lead data suggest there is a possibility
that individuals who originated in Germany could exhibit $^{206}\text{Pb}/^{204}\text{Pb}$ isotope values in the 18.3 and 18.4 range.

The environmental lead samples taken from the Western Balkans suggest that lead isotopes in the local limestones and other carbonate rocks are actually significantly higher than those displayed by these individual combatants. However, it should be noted that the lead concentration in the carbonate rocks is far lower than that of the human remains and that the sample size is small. The same is true of the silicate rocks from around Sarajevo. The silicate samples indicate local $^{206}\text{Pb}/^{204}\text{Pb}$ values of 18.9 and 19.0 respectively, results that are higher than those found in any of the human remains of these unidentified combatants, where the highest value is 18.4. However, the sample size is quite small so caution should be exercised about these results.

**Oxygen**

Though the oxygen isotope ratios accord best with the idea that these individuals have their origins in southern Europe, human physiological variation and cultural behaviors that alter ingested water can have a confounding effect on the expected range of oxygen isotope values. The processes of storing, boiling, stewing and cooking with water may impact oxygen isotope signatures because water evaporation causes enrichment of $^{18}\text{O}$ (Knudson, 2009; Lightfoot and O’Connell, 2016). Experimental studies found that culturally mediated behaviors such as brewing, boiling and slow-cooking or stewing food can offset the $\delta^{18}\text{O}$ value of tooth enamel by +2.3‰, while other experimental results have indicated that oxygen enamel apatite may be enriched over bone apatite by +1.7‰ when alkali cooking was involved (Brettell et al., 2012; Warinner and Tuross, 2009).
Manmade structures may also contribute to oxygen isotope values that are distinct from what is the predicted value for a certain geographic region. For instance, comparisons of Iron Age and Roman/Medieval period sites in Croatia indicated that Roman/Early Medieval period people consumed water with a lower δ^{18}O value (Lightfoot et al., 2014). While Lightfoot et al. (2014) noted that the lower δ^{18}O value could have come from viniculture which would have lowered the δ^{18}O via evapotranspiration (see Ingraham and Caldwell, 1999) or a lower consumption of stewed and boiled food, the authors find it more plausible that the disparity in δ^{18}O values came from the construction of aqueducts during the Roman period that brought water in from higher altitudes.

The construction of dams can also alter oxygen isotope data. Damming stops the free movement of flowing water in rivers and streams, creating what often amounts to a lake. Lakes are subject to what is known as thermal stratification, wherein the sun heats the lake’s surface to a higher temperature than its deeper water, creating two distinct layers, the epilimnion and the hypolimnion (Attey and Liebert, 1984). Due to the fact that little to no air can penetrate the hypolimnion, which is the lower layer, photosynthesis, a leading source of reaeration, is inhibited and the water becomes depleted in oxygen. Dams discharge 18O-depleted water, which can extend downstream for miles (Attey and Liebert, 1984). However, the oxygen isotope values of these individuals appear less positive, so damming was probably of no concern.

In the case of these unknown WWII combatants, the oxygen isotopes values are not too negative, suggesting that it is more likely that these individuals would have spent their formative years in a lowland, coastal climate. The location that most closely
matches both the strontium and oxygen isotope data is the region around Bari in the far southeast of Italy. Therefore, the oxygen data taken by itself suggests that these individuals were most likely to be Italian.

However, a recent comparison of archaeological oxygen isotope studies in Europe found that observed site range oxygen values is, for the most part, at least 3‰, suggesting that there is greater variability within populations drinking water from the same source than previously thought (Lightfoot and O’Connell, 2016). Lightfoot and O’Connell (2016) proposed that variation within single archaeological sites could be due to:

1. The fact that migrants were expected at these sites and therefore there was more variation because there were more foreigners present.
2. Methodological problems related to sampling and pre-treatment
3. Trade networks which made it possible for local people to consume non-local food and drink
4. Variation in sources of local drinking water
5. Physiological variation within the population, which might also be influenced by food preparation methods.

Physiological variation and boiling or stewing food has the ability to increase the oxygen isotope variation within a given sample. In the case of boiling, brewing, storing or stewing food, the process of water evaporation enriches the oxygen isotope values. Variation in oxygen isotopes can also be caused by short-term alterations in precipitation (Lightfoot and O’Connell, 2016). While seasonal variation in rainfall or a pronounced rain event would probably have been too short lived to affect the overall oxygen isotope ratios of these individuals, serial sampling of dental mineralization layers has been able to indicate differences in oxygen isotope ratios that are reflective of
seasonal precipitation (Balasse et al., 2003). Moreover, a prolonged period of draught may make oxygen isotope values less negative than they would be under normal circumstances.

**Isotopes and Artifacts**

Isotope geochemistry is imprecise as a method and, therefore, if one takes into account all of the possible places in Europe where these individuals could have been born, one ends up with multiple possibilities for their origins. The majority of bioarchaeologists who work with isotope data therefore usually utilize other historical or archaeological data to limit the number of potential possibilities concerning the origins of unknown individuals (Lightfoot and O’Connell, 2016). However, as Lightfoot and O’Connell (2016) have recently discussed, the combination of isotope data with other archaeological or historical materials provides only the most parsimonious interpretation of the data, even though there may be less plausible explanations that are valid.

In the case of these unknown WWII combatants, while certain locations, such as eastern England, are possible, but likely to be improbable, others such as southern Italy, Germany and the western Balkans are all possible places of origin for some of these unidentified combatants. Unfortunately, this does not aid us in our aim of utilizing isotope geochemistry to determine the origins of these World War II combatants. However, if one looks at the artifacts, particularly the identification tags, and the strontium isotope data, the individuals in question appear most likely to be German.

There is also the possibility that these individuals could be Croatian volunteers or members of the 13th Waffen SS Mountain Division because Croatian volunteers in the Wehrmacht and the Bosnian Muslim branch of the SS used the same type of identification tag as the rest of the German military. However, it appears that Croat
volunteer tags usually indicated that the individual was a Croat with the word “Kroat” stamped on the tag. Additionally, SS identification tags usually identify the individual as a member of the SS, either with the letters “SS” or the ⚡ lightning bolt runic insignia. None of the legible tags contains any indication that these men were either Croat volunteers or members of the SS. However, it is possible that some of the illegible tags have word Kroat or SS stamped into them.

Several of the identification tags do indicate that the individual in question was a member of the Feldeisenbahn. The railroad system of the NDH was important in terms of relaying troops and goods to other the Italian and German commands. In the fall of 1942, in response to increasing Partisan attacks on Croatian railroads, the Germans established the German Railroad Security Staff in Croatia (Deutscher Eisenbahn-Sichtungsstab Kroatien), military units which were dedicated to securing the NDH rail lines (Tomasevich, 2001). In May of 1943, the Eisenbahn forces consisted of three local German Defense Battalions and approximately 12,000 Croat soldiers (Tomasevich, 2001). Thus, the Eisenbahn units appear to be mixed units and therefore it is possible that some of the individuals associated with the Feldeisenbahn identification tags may have been German, local Volksdeutsche or Croat.

If one relies solely on the isotope data, then the eastern edge of southern Italy is the most likely place of origin because the oxygen and strontium data both match the region. It should be noted though that the identification tags utilized by the Italians look nothing like those found in association with the grave. Italian identification tags were made of brass and rectangular in shape with a loop at the top for the chain. Moreover, the helmet found in association with the remains is of the German style rather the
standard M33 helmet, which is dome shaped and was the most common Italian military helmet issued during the war.

**The Volksdeutsche**

The presence of ethnic Germans (the *Volksdeutsche*), Austrians and Hungarians also presents an issue. There were 15,000 Banat *Volksdeutsche* who served in the Prinz Eugen SS Division and 600 who served in the *Wehrmacht*. There were also 17,538 *Volksdeutsche* who served in the *Waffen* SS, 1,386 who served in the *Wehrmacht*, 2,363 who served in the Croatian military and 3,488 who served in the police battalions (Swanson, 2008). If combatants from these ethnic groups had resided in the Western Balkans for more than a generation then the teeth of their descendants would exhibit a local isotope signature rather than the isotope signature of the region to which they claimed ethnic affiliation. In other words, a person who identified himself or herself as an ethnic German, yet was born in Bosnia would appear isotopically identical to people who identified as Slavs who were also born in Bosnia. Therefore, it cannot be ruled out that these unidentified combatants were local individuals who identified with their German, Austrian or Hungarian heritage rather than the geopolitical area where they were born.

This illustrates that how one constructs self-identity is not necessarily the same as how one’s body is tied to the physical landscape. In this sense, the physical self is composed of local materials, such as food and water, yet one does not perceive oneself as a member of the local community. Rather one is a member of a distant ethnic community and just happens to have been born and resided elsewhere. This does not preclude assimilation into the local population, it just means that if one were asked, one would identify as German or Austrian or Hungarian rather than as a Yugoslav.
Partisans

There is also the possibility that these individuals could be Partisans. Due to their guerilla nature, the Partisan resistance would take supplies where they could find them. The National Liberation Army of Yugoslavia was known to outfit its soldiers in captured German and Italian uniforms after removing all of the insignias (Bailey, 1980). Unfortunately, the helmet associated with the remains is too rusted to discern whether the insignia is still present and the uniform remains are so fragmentary that it is impossible to tell whether they have been altered and their insignia removed.

Then again, the biological sex of the identifiable human remains indicates that every one of these unknown combatants is male. One of the unique aspects of the Partisan Resistance is that they encouraged women to engage in active combat. Indeed, an estimated 100,000 women were thought to have served in the Partisan army and there are letters from German commanders highlighting the shame of having suffered losses at the hands of companies of female Partisans (Batinić, 2015). Therefore, if this was a Partisan grave, it is acceptable to suggest that one would expect to see the possibility of units of mixed sex. However, it is also possible that some of the remains in the body bags are those of women and that their skulls and pelves were either not recovered or were too fragmentary to be discernible by sex.

Commingling and Secondary Burial

There is the possibility that these combatants are from multiple graves and different time periods, which might explain why the 85th Flak Abteilung identification tag indicates a location that the oxygen data do not support. It might also clarify why one of the identification tags indicates the individual in question was a member of the 85th Flak Abteilung, a light flak battery that only fought in the Balkans in 1941 and in an area
nowhere near Herzegovina. Additionally, it might explain why this identification tag was found among identification tags that indicate their owners were part of the *Feldeisenbahn Abteilung*, railroad divisions that appear not have existed in the NDH prior to 1943 (Tomasevich, 2001). The idea of multiple graves and secondary burial seems less likely as a scenario due to the fact that there is continuity among the remains concerning postmortem environmental alternations and artifacts. However, due to dearth of data regarding the excavation of these remains, one cannot rule out the possibility that these individuals come from different graves.

**Isotope Equifinality and the Politics of Human Remains**

The uncertainty regarding the isotope results indicates that a plurality of environmental identities is possible in regard to these combatants. Therefore, their identities remain suspect. This suggests that the political issues revolving around their national and ethnic identities remain unresolved because they cannot be attributed to any single regional location of origin.

It is possible that their origins are multiple and that the isotopic signal related to the remains is indicative of the fact that there were combat units that employed local and foreign soldiers. It is also possible that the men in these body bags represent multiple burials and that the remains of men who were killed while serving in military units that resembled their own national composition were commingled with the remains of combatants from other units.

However, the isotope results, in this case, are not sufficiently precise to allow one to address specific questions of national identity and how one would go about dealing with the political and ideological concerns that are bound to the remains of these individuals should their regional identities be better established.
The ambiguity of the remains allows for multiple interpretations and permits competing governments and interested parties to ascribe whatever meaning they wish onto these unidentified bodies. This allows the Bosnian government, for example, to eschew confronting questions related to what should be done, if anything, to commemorate individuals who potentially participated in military actions against members of these own communities. It also means that the Volksbund and the German government may not have to confront whether to attempt to commemorate the remains of German soldiers in a foreign country where actions committed during WWII are still treated by members of the local populace as if they happened yesterday. Similarly, it means that other foreign governments with complicated in pasts in the region, such as Austria and Italy, can also avoid the potential political minefield of repatriating and commemorating their WWII combatants.

Isotope equifinality also places the remains in a situation in which these bodies are simultaneously everywhere on the landscape and nowhere on the landscape. They are everywhere because they could theoretically belong to any one of the countries mentioned as a potential place of origin. They could still be Austrians or Germans or Italians or locals. At the same time, they are geographically and politically nowhere—men without country—because the equifinality associated with the isotope results permits all interested parties to suggest that they belong to someone else, that they are another country’s problem. Equifinality suggests that these individuals may fit any narrative about any number of nation’s complicity in WWII or that they be assigned no narrative at all.
CHAPTER 8
CONCLUSION

International Memory Politics, Archaeology and Widening the Scope of the “Forensic Turn”

Remembering, forgetting or even altering the past speaks to the general idea that the past is not in the past. Certain members of the public may consider the past to be very much in the present and, therefore the role that archaeologists play in uncovering these sites and these bodies, in bringing them to light, must be considered (Cole 2013; Harrison and Schofield 2010; Olivier 2013; Shepherd, 2013). When the archaeological community considers whether to exhume a site of recent conflict, or really any site where their work could be subject to political manipulation, it behooves those doing the excavation to consider the fact that their controversial work may be utilized or represented in ways that are beyond their control (Moshenska, 2008). These kinds of considerations raise questions regarding whether it is healthier to preserve a site of conflict or to erase it and place one’s faith in a better future, one unburdened by past suffering (Klausmeier et al., 2005).

In light of the fact that the isotope results suggest that equifinality will likely prevent scientists from discovering the regional identity of these individuals via isotopes alone, one may wonder if we should keep trying to refine our methods or seek out new lines evidence to attempt to give these individuals back their identities. Moreover, given their fraught context, it would be understandable if one were to ask whether it was worth it to identify these men or if it would be more beneficial to simply leave them be.

However, the absence of the material evidence of conflict does not ensure that it will be forgotten; memories often leave traces and conflict sites may leave their own scars (Fundar, 2004; Koshar, 2000). In regions such as the western Balkans, where
collective and institutional memory can extend back hundreds of years in time, there may never be a time when exhuming and commemorating WWII combatant’s remains will not be contentious to certain stakeholders. Moreover, international memory politics will likely continue to play a role in the identification of such multivocal and polemic bodies. Thus, perhaps it is better to confront the past and hope that archaeologists, forensic experts and historians can have a meaningful impact on the government institutions, families, historical societies and others, interested in their work.

However, confronting the past, one should also consider whether the positivist paradigm associated with the forensic turn is the best means of evaluating ambiguous and contested remains in the former Yugoslavia. While the forensic techniques associated with a positivist approach to identification, which places the remains themselves at the center of the investigation, are undeniably valuable, these remains are unlikely to ever go to trial. However, the multivocality of the remains, both as material objects and as representations, suggests that they could become embroiled in politically and ideologically motivated discourse and propaganda meant to valorize certain groups and vilify others (Crossland, 2009; Denich 1994; 2000; Verdery, 1999). As we saw at the beginning of the Balkan conflicts of the 1990s, international memory politics and the manipulation of perceptions of pass suffering for political gain can have very real consequences. Thus, an appeal to dispassionate, third-party, objective, individual truth, needs to also consider the political positions of the stakeholders involved with the remains and how the work of forensic personnel could be utilized to serve or refute certain political narratives (Colaert, 2016).
Additionally, the position of the archaeologist as a scientist must be considered and evaluated. González-Ruibal et al. (2015:118) recently suggested that “activists may want to use archaeologists to bestow an aura of scientific respectability on their struggle,” therefore extending “scientific legitimacy to their entire interpretation of history.” This ethical dilemma is of particular concern here because isotopic geochemistry appears powerful because it is considered objective. The individual evaluating the data may recognize that scientific endeavors are historically contingent and subjective. However, in a manner similar to a forensic report, isotope column sample results can be used to strengthen political or ideological causes. This is worth noting due to the fact that archaeological exhumations of dead bodies have been utilized to provide support for extreme nationalist positions in the Balkans in the past (Verdery 1999; Denich, 2000).

Further Research

Identification Tags

To further understand the identities of these individuals it would be beneficial to have the combatant’s identification tags assessed by the WASt. The WASt can compare the numbers on the legible tags against master lists dedicated to which individuals served in which combat units during WWII. The identities of the men associated with the tags, assuming they can be found, can then be compared to the isotope data in order to evaluate whether these individuals belong to variable populations as the isotope results suggest. Comparing the isotope results to the region of origin associated with the identification tags may allow us to further explore whether the isotope variation exhibited by these unknown combatants reflects the complex geology of a specific area or if it is the result of these individuals originating from
disparate regions of Europe. Moreover, having the individuals in the body bags assessed by the associated identification tags could narrow down the military unit these men belong to and potentially aid in returning their identities to them, which, regardless of the politics inherent in their identification, should be any scientist or government official’s ultimate goal.

Furthermore, identifying these men via identification tag provides a way of checking the accuracy of the isotope results. For example, if the identification tags indicate that one of these individuals lived the majority of their life in the Black Forest of Germany, yet the Sr, Pb and O results do not match what is known about the region, it could suggest that the person associated with the tag is not among these remains. Alternatively, a more likely explanation could be that the isotopic methods lack the resolution to account for isotopic variation in the region and/or that cultural practices, such as boiling food or consuming imported resources, significantly affect the isotopic signature of the remains in some way.

**Isotopes**

To combat the lack of precision in regard to the expected isotope range based on the environment and bedrock geology of any given area, it would be beneficial to take environmental rock, soil, plant and animal samples from more condensed areas. In other words, it would be a good idea to take a large proportion of samples from small areas of certain regions to assess isotope variation within a more constrained area. This might help to pinpoint environmental variation exhibited by the samples but not noted in the current analysis.

It would also be of use to include small mammal or shell samples from central Europe and the Balkans because these animals usually have reduced home ranges.
Therefore, because they do not travel far, these animals often reflect the isotope signature of the local environmental. Small mammal remains were not utilized here because they were not available. However, that does not mean that there are no animal specimens from early 20th century in these regions anywhere. If animal samples that match the time period could be located, and should be available in museums, they could aid in what one would expect to see locally.

**Scientific Objectivity and the Power of the Positivist Paradigm**

One of the aspects of my work that bears more consideration is that fact that I, as a politically and ideologically neutral third party scientist, utilizing a positivist, scientific method (bone chemistry) am in a position where my results may be taken more seriously by stakeholders (Colaert, 2016). Part of what makes bodily evidence conducted via a positivist paradigm powerful is that there is a perception of objectivity (Crossland, 2009).

The insistence on objectivity that underpins scientific endeavors perpetuates the notion that science is value-free and that what the data present is always the truth (Proctor 1991; Stack 1980). However, scientific data is always subject to the interpretations of the scientist. While it is true that a mass spectrometer can provide me with a set of numbers, I am ultimately responsible for how those numbers are interpreted. I am not suggesting that scientific analysis is not valuable or that we should take extremely relativist positions on the interpretation of scientific data. What I am suggesting is that we explore how the objectivity perceived in scientific practices, such as isotope analysis, gives certain kinds of results power among stakeholders and how
the cultural and social milieu in which those stakeholders are immersed contributes to this power or, in some cases, detracts from it.

**Stakeholder Studies**

Additionally, the potential reactions of the stakeholders outlined here, though informed by historical precedent and some discussion with certain parties involved, such as Bosnia’s curatorial institutions and the *Volksbund*, needs to be considered on a much larger scale. An ethnographic and/or Actor-Network approach to the stakeholders who could potentially be impacted by the remains would greatly aid our understanding of how WWII Axis human remains are manipulated to suit specific ideological and political points of view. A larger project involving more involved discussions with the *Volksbund*, Bosnian curatorial authorities, local Croats, Bosniaks and Serbs, ultranationalist groups in Germany and the Balkans and government departments in the Balkans (Croatia, Bosnia, Serbia), Italy and central Europe (Germany and Austria) would certainly flesh out gaps in my dissertation research and would refine the discussion of international memory politics surrounding the remains of WWII combatants in the former Yugoslavia. Mapping the networks of relations would also provide researchers with a good idea of how all of these agents are entangled with each other.

**Identification Institutions in Comparative Perspective**

The forensic turn also analyzes the institutions and associations involved in the forensic work. As Colaert (2016) notes, when forensic institutions are compared, their methods, which are often related to their ultimate goals, are not uniform. Thus, discussions of international memory politics, identification and commemoration would also benefit from comparative studies that analyze how the institutions charged with
caring for a nation’s respective dead operate. In what ways are their operational procedures, philosophies and missions similar? In what ways are they different? How do these similarities or differences influence the field of military or conflict identification as a whole?

For example, in the United States all military personnel who perish in past foreign conflicts are handled by the Defense Prisoner of War/Missing in Action Accounting Agency (DPAA), a federally funded United States military laboratory. German military remains, in contrast, are handled by the Volksbund, a private charitable organization with a mandate from the German government. Unlike the United States, the Volksbund relies on charitable contributions and fundraising for two-thirds of its budget, while the rest is comprised of government funds. Moreover, while the US and Germany both focus to identify all military personnel who died in past conflicts, in Bosnia the identification of human remains is principally focused on identification of individuals who were killed in conflicts in the 1990s. Bosnian exhumations and identifications were originally conducted by third-party institutions such as the ICMP, but have now passed to Bosnia-led organizations such as the MPI and the State and local Prosecutor’s Offices.

These organizations also deal with differing scales of human remains. In the United States, as per its mandate, DPAA is expected to identify 200 individuals per year. While there are a lot of missing US combatants from past conflicts, the number of unaccounted for American servicemen pales in comparison to the number of sets of remains that the Volksbund handles in a year. The sheer number of bodies, as well as the fact that some of the German soldiers buried in the East were not accessible until
2005, means that the *Volksbund* might contend with the remains of anywhere from 25,000 to 40,000 combatants a year, an overwhelming number (Livingstone, 2009).

Methods of positive identification also vary between forensic institutions. For example, in Spain the use of DNA analysis may seem unnecessary because the remains of victims of the Spanish Civil War are not going to be used for judicial purposes and the particulars of the circumstances surrounding the mass grave may also be well-known (Colaert, 2016). In the case of Germany, the *Volksbund* utilizes other methods of identification, such as biological profiles and historical records, so as not to have to contend with the massive expense of conducting DNA analysis and lack of reference samples. This is a different situation than Bosnia, where the remains of victims from the 1990s conflicts are routinely sampled for DNA and compared to reference samples provided by loved ones. DNA, as well as dental records, are also customarily employed by DPAA when evaluating the remains of repatriated American servicepeople. These similarities and differences bear thinking about in the future.

**Identity and the Nationalist Turn in the West**

There is also the consideration that certain political events in the West (Brexit, the election of Donald Trump, Italy’s constitutional referendum) have seen the return of a kind of populism built on anti-immigration policies and nationalism. During the 2016 US presidential election, Vojislav Seselj, accused war criminal and founder of the Serbian Radical Party, tweeted that Serbs in the United States should back the populist policies of Donald Trump. As Keyerlingk (1988:4) notes:

> The danger lurks constantly that history will be misuse for contemporary purposes. Whoever controls the present tries to manipulate the past in order to guide the future. Many people expect too much of their history and demand that it serve their present concerns. The past has been invoked variously as source of national or racial myth, moral values and
experiential meaning, as an object of filial piety, and as a chart for the future. Controlling the contents of the past becomes particularly important during periods of sudden, dramatic reversals of foreign policy. As yesterday’s enemies are converted into today’s friends and allies, the integrity of conventional history is threatened. When World War II began in 1939, the Soviets were Hitler’s Allies. Two years later they joined the Allied anti-Hitler coalition. After 1945 Anglo-American disillusionment with the USSR grew, until these former allies again became enemies. Paradoxically, the defeated Germans and Austrians replaced them as friends and Allies.

The return of overt racist and xenophobic positions in mainstream politics reinforces why it is so important to participate in research that may circumvent or refute narratives of competitive victimization (Denich, 2000). Therefore, it is important to keep making efforts to identify individuals who potentially participated in some of the darker events in a nation’s past in order to ensure that we bring that past into the light of day.
APPENDIX
MILITARY DIVISIONS THAT FOUGHT IN THE BALKANS DURING THE SECOND WORLD WAR

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### 371st Infantry Division

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### 369th Infantry Division

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**117th Jäger Division (Previously the 717th Infantry Division)**

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**718th Infantry Division**

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### 118th Jäger Division (previously 718th Infantry Division)

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### 101st Light Infantry Division

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### 16th Motorized Infantry Division

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### 11th Panzer Division

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REFERENCES


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BIOGRAPHICAL SKETCH

Kate Kolpan was born in Philadelphia, Pennsylvania, where she attended The Philadelphia School and Central High School. She graduated cum laude with honors in anthropology from New York University where she earned a Bachelor of Arts in Anthropology in the winter of 2004. She received her Master of Arts in Anthropology with distinction from California State University, Chico in 2009. Kate received her Ph.D. from the University of Florida in the spring of 2017. During her time at UF, Kate was fortunate to receive a Forensic Science Academy Fellowship to train at the Joint POW/MIA Accounting Command (now the Defense POW/MIA Accounting Agency) and several Foreign Language and Area Studies fellowships to improve her language skills and conduct research related to World War II era Central Europe and the Balkans. Kate’s areas of interest and specialization are in bioarchaeology, forensic anthropology, isotope analysis, osteology and osteometry, combat and military archaeology, contemporary archaeological theory, materiality, World War II and central Europe and the Balkans.