AN ANTHROPOLOGICAL STUDY OF WAR CRIMES AGAINST CHILDREN IN KOSOVO AND BOSNIA-HERZEGOVINA IN THE 1990s

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I dedicate this thesis to my mother and father,

Ronald and Margaret Roberts

ABSTRACT

Between 1991 and 1999 war broke out across Former Yugoslavia. Thousands of people are believed to have been killed and many more were internally displaced or forcibly expelled from their countries. In 1993 the United Nations established the International Criminal Tribunal for Former Yugoslavia (ICTY) to investigate war crimes allegedly committed in the region. Its work is still ongoing.

This research comprises an anthropological study of the children in Kosovo and Bosnia-Herzegovina who were killed as a direct result of war crimes perpetrated during the conflicts of the 1990s. It is based on primary forensic data collected by investigators and scientists on behalf of ICTY between the dates of 1996 and 2000. From this data, a single integrated database was created which allowed the numbers of child deaths, causes of death, demographic profiles of the deceased, and post-mortem treatment of their remains to be analysed. As well as examining these factors within each country a significant aspect of the research included comparative analysis between the crimes committed against children in Kosovo and those in Bosnia-Herzegovina. Broad comparisons were also made between adult and child data in both countries. The findings from the research were analysed within their wider socio-political context and an assessment was made of how closely the forensic evidence supported accounts from other literary sources.

In its current form, the research can be used as a historical and scientific resource by those wishing to study both the events surrounding the wars in Kosovo and Bosnia-Herzegovina, and the scientific methods used by experts in the field to investigate the crimes. The methodology employed during the research, including the creation of the database, is described in detail and is directly transferrable to other studies of a similar nature. Solutions employed to address the considerable problems encountered during the construction of the database can be applied to other similarly large and unmanageable datasets. The database itself can be expanded to include the forensic evidence collected in Bosnia-Herzegovina and Kosovo since 2001, when ICTY handed over responsibility for the exhumations to local government agencies. It can also be used to examine other aspects of the wars, and adapted to analyse data from other countries. Ultimately it is hoped that this research will be of use in formulating pro-active strategies which might assist in protecting children involved in future conflicts.

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Finally I would like to pay my respects to the children of Kosovo and Bosnia-Herzegovina who were killed in the wars of the 1990s. This thesis is about them, their families, neighbours and friends. I hope I have done justice to their stories.

Children and Interpreter Watching the British Forensic Team Exhume the Bodies of Victims from their Village, Kosovo, 1999

(Roberts, 1999)

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LIST OF ABBREVIATIONS

BiH	Bosnia-Herzegovina
EULEX	European Union Rule of Law Mission (in Kosovo)
ICMP	International Commission for Missing Persons
ICRC	International Committee of the Red Cross
ICTY	International Criminal Tribunal for the Former Yugoslavia
KLA	Kosovo Liberation Army
JNA	Yugoslav Peoples Army
MPI	Missing Persons Institute
NATO	North Atlantic Treaty Organisation
NGO	Non-Governmental Organisation
OMPF	Office on Missing Persons and Forensics
OSCE	Organisation for Security and Communication in Europe
OSCE-KVM	Organisation for Security and Communication in Europe-Kosovo Verification Mission
OTP	Office of the Prosecutor
PHR	Physicians for Human Rights
SDS	Serbian Democratic Party
SOP	Standard Operating Procedure
UCK	Ushtria Clirimtare e Kosoves (Albanian name for KLA)
UN	United Nations
UNHCR	United Nations High Commissioner on Refugees
UNICEF	United Nations Children's Fund
UNMIK	United Nations Mission in Kosovo

CHAPTER ONE

INTRODUCTION

> "*All non-combatants are entitled to protection, but children have a primary claim to that protection. Children are innocent and especially vulnerable. Children are less equipped to adapt to or respond to conflict. They are the least responsible for conflict, yet suffer disproportionately from its excesses. Children are truly blameless victims of conflict. Moreover children represent the hopes and future of every society: destroy them and you have destroyed a society"*
>
> O.A. Otunnu, Special Representative of the Secretary General for Children and Armed Conflict (1997)

1.1 Research Purpose and Rationale

The excerpt above was taken from the acceptance speech made by Olara Otunna on his appointment as Special Representative of the Secretary General for Children and Armed Conflict. It emphasises the unique position of children during times of war and underpins the reason why they deserve special consideration in war crimes investigations and post conflict analysis. This research addresses that requirement with regard to the conflicts which occurred in Kosovo and Bosnia Herzegovina during the 1990s. A significant amount of information has been amassed by the International Criminal Tribunal for Former Yugoslavia (ICTY) and Non-governmental Organisations (NGOs), but until this study there has not been an in-depth analysis of the child fatalities which occurred as a direct result of violence in the wars.

This research is innovative not just because it focuses specifically on children but because it is based on the raw data collected by investigators and scientists in the field. This forensic evidence was derived from primary sources and recovered in accordance with the international judicial and professional standards outlined by the ICTY (Arbour, 1999; ICTY, n.d.). Some information was readily available from other sources such as NGO reports (Human Rights Watch, 2001; Organisation for Security and Co-operation in Europe, 1999a, 1999b; Amnesty International, 1992), but these were compiled primarily from witness statements. In these types of reports it is almost impossible to avoid some degree of bias because witnesses are, by definition, giving subjective accounts. There can

also be problems associated with the methodologies used to collect information: for example, Human Rights Watch acknowledges that its data contains an inherent bias due to the non-random sampling of interviewees and the limited time span over which their investigations were conducted (2001: 417). This should not be taken to mean that the vital information gathered by the NGOs is incorrect, just that it may not show the entire picture.

By basing this research on primary forensic evidence collected and examined within the strict parameters set by the ICTY, it is anticipated that a comprehensive, unbiased analysis of the available data relating to child deaths can be undertaken.

1.2 Research Aims

The primary aims of the research were to establish the numbers of children killed during the conflicts in Bosnia-Herzegovina and Kosovo and to examine the precise nature of those crimes. It is expected that by achieving this, the research will serve a number of purposes:

- It will constitute a valuable scientific, social and historical resource
- It will provide a framework for the expansion of the dataset
- It can be utilised at government and non-government level in the formation of proactive strategies to protect children in times of conflict

It is hoped too, that the research may assist in the creation of predictive models, for example, to locate the graves of persons still missing. These ideas and future projects which could be generated as a result of the research are discussed in more detail in Chapter Eight.

Broad criteria were identified at the outset of the research which related to all aspects of the child deaths, including the demographic profile of the victims, cause of death, location of burial and deposition sites, post-mortem treatment of remains, and the presence of personal effects and items associated with criminal activity.

These criteria were selected for study because it was envisaged that detailed analysis of them would facilitate a comprehensive review of the forensic evidence. In addition to this a significant element of the proposed research was comparative analysis between the crimes committed against children in Kosovo and Bosnia-Herzegovina. It was anticipated that any trends and patterns identified in the data would be considered within their wider social and political context and that issues resulting from this, such as the extent to which the crimes may have been planned as part of an overall strategy, would be examined.

In order for the crimes against children to be studied within their true socio-economic and political context it was vital to understand the complex history of Bosnia-Herzegovina and Kosovo within the context of Former Yugoslavia. As such, the research includes a synthesis of the aspects of history that influenced national thought and ideologies, which were manipulated and exploited by politicians for their own ends.

It was also recognised that an important part of the research would be an examination of the methodologies, reference standards and Standard Operating Procedures (SOPs) used by the international forensic teams during the exhumation and examination of the remains. Knowledge of these is vital in order to make an assessment of the accuracy of the data and, where necessary, to standardise terminology for the purpose of analysis.

Finally, the research aimed to review, where possible, how closely the forensic evidence supported the information based on witness statements and anecdotal accounts as presented in NGO reports and literature relating to the wars.

1.3 Specific Research Questions

A number of specific research questions were formulated to address the aims of the research. They were as follows:

1. In what condition were the bodies of the victims and how did this affect the amount of information that could be retrieved from them?

2. How many children died in Kosovo and Bosnia-Herzegovina as a direct result of the wars and what proportion of the victims did they represent?

3. What were the ages at death and sex of the child victims in both countries, could any trends and patterns be identified in the demographic data, and were there any differences in these between the two countries?

4. What were the locations and characteristics of child burial and deposition sites in Kosovo and Bosnia-Herzegovina? Were there differences between and within the two countries? Were there differences in the post-mortem treatment of children and adults?

5. What were the causes of death in children, what types of injury patterns were seen and did this vary according to age, sex and geographical location? Did cause of death in children vary from that seen in adults?

6. Were there any artefacts associated with the victims which provided evidence of criminal activity and if so, what were the implications of this?

7. Were there any artefacts associated with the victims which provided information about their identities and lifestyles and if so, what were the implications of this?

8. Did the artefacts found with children differ from those found with adults?

9. Does the forensic evidence support the witness statements and anecdotal accounts as presented in NGO reports and literature relating to the wars?

1.4 The Scale of the Problem: Estimation of the Numbers of People Killed, Missing and Displaced

The wars in Bosnia-Herzegovina and Kosovo were amongst a series of violent and often prolonged conflicts which broke out across the Former Yugoslavia in the 1990s. They were set against a back-drop of the fall of the communist states, increasing nationalism and Serbian expansionism. The background to the wars is long and complex and the direct causes were different in each country. The social and political history of Bosnia-Herzegovina and Kosovo, including the events which occurred immediately prior to and during the wars, are discussed in detail in Chapter Two.

The numbers of people killed during the wars have been and still are heavily disputed, and for political reasons there are both exaggerations and understatements of the figures in both countries (Judah, 2000a: 240; Silber and Little, 244; Wilcoxson, 2010; Tran, 2010). There is also a genuine lack of knowledge, as the problems in gaining accurate estimates are compounded by the massive internal displacement of populations which took place as a direct result of the wars (Judah, 2000b: 329, 336).

FAMA International, the Sarajevo based media-publishing house, estimated that between 1991 and 1999, 300,000 people were killed during the conflicts in former Yugoslavia (FAMA International, 1999). Other sources have cited figures of 150,000 (Clark, 2005: 364), over 150,000 in Bosnia alone (Malcolm 1996: 252) and 200,000 in Bosnia alone (Toomey 2003: 29). There is conflicting information regarding the number of deaths in Kosovo between 1998 and 2000, with estimates ranging from 4,000 to 12,000 (Judah 2000a: 310; Williams, 1999). In 2004, it was reported that "approximately 4,500 bodies" had been recovered from graves throughout Kosovo (Stover and Shigekane, 2004: 94), but this figure does not include those who are still missing. A report by Amnesty International stated that at the end of the armed conflict in Bosnia-Herzegovina, an estimated 27,000 men women and children remained unaccounted for (Amnesty International, 2003a). The figure cited for Kosovo was around 4,200 (*ibid*, 2003b).

Perhaps the most accurate and unbiased information is that produced by the International Commission for Missing Persons (ICMP) which, since 2001, has been undertaking DNA analysis of the recovered remains and identification of the deceased through an international outreach programme. In fact, their figures are broadly similar to those produced by Amnesty International. In 2008, they stated that at the end of the wars there were 30,000 people missing presumed dead from Bosnia-Herzegovina and 4,400 people missing presumed dead from Kosovo (ICMP, 2008). At the time the ICMP report was written, 10,000 people were still missing presumed dead from Bosnia Herzegovina and 1,900 were still missing presumed dead from Kosovo (*ibid*). The ICMP also believe that hundreds of thousands of people were internally displaced across the region as a result of the wars (*ibid*).

A literature search revealed that there were no summary figures available specifically for child deaths in either Kosovo or Bosnia-Herzegovina, although there are numerous accounts of specific incidents in which children were killed (see Chapter Two). The ICTY indictment against Radovan Karadzic and Ratko Mladic provides examples of a number of attacks where children were killed and lists a range of sites in Sarajevo where they were deliberately targeted including residential streets, towns and villages, playgrounds and swimming pools (ICTY 1995a). In Kosovo, reports by NGOs provide numerous witness accounts of children being killed in incidents throughout the country (Human Rights Watch, 2001; OSCE, 1999a). These are discussed in detail in Chapters Two and Six.

1.5 The Geographical Region of Study

The Socialist Federal Republic of Yugoslavia (SFRY, also referred to as Former Yugoslavia) was created by Josep Broz Tito in 1945 and governed by him until his death in 1980 (Barnett, 2006). The federation was made up of six republics; Bosnia and Herzegovina, Croatia, Macedonia, Montenegro, Slovenia and Serbia which included the regions of Kosovo and Vojvodina (ICTY, 2008a). It continued as SFRY until the 25th June 1991 when Slovenia's declaration of independence effectively ended its existence. By 1992 Croatia, Macedonia and Bosnia-Herzegovina had also declared independence leaving just Serbia and Montenegro within the federation. They declared the Federal Republic of Yugoslavia (FRY) on the 27th April 1992.

In 2003 the FRY was reconstituted and re-named as a State Union of Serbia and Montengro. This union ended following Montenegro's declaration of independence on the 3rd June 2006 and Serbia's on 5 June 2006 (ibid).

Figure One shows the location of Former Yugoslavia within Europe (inset) and modern day Bosnia-Herzegovina and Kosovo within Former Yugoslavia (ICTY, 2008a). Bosnia-Herzegovina was divided into two distinct entities: the Bosnian Serb Republic (or Republika Srpska) and the Muslim-Croat Federation (or the Federation of Bosnia and Herzegovina) as part of the Dayton Peace Accords which ended the war in 1995 (U.S. Department of State, 1995). Kosovo declared its independence from Serbia in February 2008. This independence was immediately recognised by the United States of America and to date, 22 of the 27 European Union (EU) countries have recognised Kosovo as an independent state. Five EU countries have expressed opposition to Kosovo's independence; Greece, Cyprus, Slovakia, Romania and Spain. Serbia continues to view Kosovo as a province of Serbia (Woehrel, 2010).

Figure 1: Location map of Bosnia-Herzegovina and Kosovo within Former Yugoslavia and Europe (ICTY, 2008a).

CHAPTER TWO

BACKGROUND AND LITERATURE REVIEW

2.1 Historical and Political Background to the Conflicts

If the crimes committed against children in Kosovo and Bosnia Herzegovina during the 1990s are to be studied within their true socio-economic and political context, it is important to understand the history of the two countries and their place within the Former Yugoslavia. The history of the Balkans and, more specifically that of Bosnia-Herzegovina and Kosovo, is long and extremely complex. As much as anywhere else in Europe, past actions have dictated current and future national thought and ideologies. National identity and the notion of having a primary right to territory based on ancestry and heritage, feature heavily in the region's history. This in turn is inextricably linked with the custom of *gjakmarrje*, the vendetta or blood revenge, which itself is based on *besa*, or honour (Glenny, 2000: 152; Durham, 2000: 32). These things alone did not the cause the wars in the 90s, but they were factors that could be manipulated and controlled by politicians, as they had been by past leaders, in order to legitimise their claims of supremacy.

The classical Serb view holds that the people who lived in Kosovo were "overwhelmingly Serb until a few generations back" (Judah, 2000a: 2). Albanian historians, however, have always claimed the right of first possession, arguing that their ancestors were the ancient Illyrians and Dardanians who lived there before the Slav invasions of the 6th and 7th centuries A.D. (Wachtel, 2008: 20). The first recorded settlers in much of modern Yugoslavia and Albania were indeed the Illyrians, but following the expansion of the Roman Empire in the 1st and 2nd centuries AD, people came to settle in the region from countries as widespread as Syria, Palestine, Egypt, Italy and Greece (Eliznik, 2005; Malcolm, 1996: 3). Figure Two shows the region as part of the Roman Empire in *c.* 27 B.C.

Figure 2: the Balkans and the extent of the Roman Empire c. 27 B.C. (Brunt, 1982: 141)

It would seem almost impossible to support the claim of a direct line of ancestry under those circumstances, and subsequent invasions by the Goths, the Asiatic Huns, the Iranian Alans and the Avars further complicate the issue (Judah 2000b: 7). Of the Slav tribes who had migrated to the Balkans from the north and east in the 6th and 7th centuries B.C., the two tribes that predominated were the Croats and the Serbs who had previously established kingdoms in the region of modern Poland and the modern Czech Republic (*ibid*). The Serbs and the Croats were from the earliest times distinct, but they lived and migrated in tandem and both shared an element of Iranian ancestry. The Serbs settled into an area corresponding to modern southwest Serbia, which includes Kosovo, later extending into Montenegro and Herzegovina, and the Croats settled into areas roughly corresponding to modern Croatia and most of Bosnia proper (Malcolm, 1996: 8).

Between the 7th and 11th centuries, under the influence of the Byzantines, the people of the Balkans began to form centralized kingdoms, and the new cities stimulated trade and industry (Wachtel, 2008: 34)**.** There also developed a clear religious divide between the Croats and the Serbs, with the former adopting Catholicism due to influence from Rome and Hungary, and the latter largely following the Orthodox church as a result of influence from Orthodox Constantinople (Judah, 2000b: 9). During this time Bosnia developed as

an independent state with its own schismatic church which functioned independently until the arrival of the Franciscans in the 1340s and the Ottoman Turks from the late 1380s (West, 2006: 299; Malcolm, 1996: 15).

A significant event during the Turkish attempts to conquer the Balkan Peninsula was the Battle of Kosovo, which took place at Kosovo Polje in modern day Kosovo, on the 28th June 1389 (Judah, 2000a: 5). Although battles of greater military significance had been fought previously in the Balkans, this one became symbolic of Serb valour as the brave Prince Lazaar refused to submit to Turkish rule. Despite the fact that the Serbs were defeated, Prince Lazaar became a national hero and, by association, the province of Kosovo became an important region in Serb folklore (Sells, 1998: 37; Silber and Little, 1996: 28; Judah, 2000b: 29, 71; Finlan, 2004: 15). Along with the more obvious political and economic reasons, this played a role in modern Serbia's reluctance to grant Kosovo her independence. Thus, Kosovo has been described as:

> "*a region inhabited chiefly by Albanians but claimed by Serbian nationalists as the symbol of an almost supernatural continuity between the medieval Serbian state and modern Serbia"* (Glenny 2000: 249).

The date of the battle of Kosovo, the 28th June, also became significant in the Serb nationalist calendar. Centuries later this was reflected in the timing of the assassination of Archduke Franz Ferdinand in Sarajevo in 1914, and the publication of Josip Tito's *Resolution* in 1948 (Wolfson, 1978: 144; Glenny,1996: 535).

By the mid-fifteenth century, all of Serbia, Bosnia and Herzegovina had succumbed to Ottoman rule (Imber, 2002: 24). Although this inevitably upset the old systems of government, it brought with it a number of positive changes such as increased political stability, the repopulation of previously depopulated areas, and an increase in the amount of land under cultivation (Mazower, 2000: 33). One of the most significant consequences of the Ottoman presence in the Balkans was the introduction and spread of Islam and the later development of the Bosnian Muslims as an ethnic rather than a religious group (Malcolm, 1996: 52). Although there appears to have been no wide-scale enforced conversion, by the late 16th / early 17th century Muslims became the absolute majority in the territory of modern Bosnia, whilst in Croatia and Serbia the dominant religion

remained Catholic and Orthodox Christianity, respectively (*ibid*). In 1689, however, the balance within Serbia shifted when the Serbs rebelled against Ottoman rule. The Turks fought back and at least 30,000 Serbian families fled northwards from the Kosovo region to Hungary (Judah, 2000b:46). It is thought that the Albanian numerical majority in Kosovo in modern times probably dates to this event (Malcolm 1996: 84; Judah, 2000a: 9). From this time onwards the dream of recovering Kosovo and the notion that one day the "old state would, Christ–like be resurrected" (Judah, 2000b: 47) featured heavily in Serbian politics (*ibid*; Benson, 2001: 3; LeBor, 2003:120).

The Muslim majority in Bosnia was achieved by a combination of migration, conversion, and the Ottoman military system of *devsirme* where boys were taken from Christian Europe to Istanbul, converted to Islam, and trained as fighting troops, servants or state officials (Imber, 2002: 137; West, 2006: 302; Sells, 1998: 47). A Christian woman could also convert to Islam by marrying a Muslim man, even if she were already married to a Christian. If she wished to leave her Christian marriage she could achieve an annulment by this means or alternatively if she wished to convert to Islam but stay married to her Christian husband, he was given the option of converting too (Mazower, 2000: 71). The Muslim population in Bosnia was further increased by the arrival of Muslims who had been driven out of Croatia by the Hungarians, Slavonian Muslim refugees, and the Turks themselves (West, 2006: 301). Many indigenous Bosnians and inhabitants of other parts of the Balkans converted to Islam because under Ottoman rule they benefited in terms of land ownership, taxes and judicial rights (Malcolm, 1996: 65). Land ownership was not, however, an exclusive Muslim right and there was the chance for Christians to become landowners and sell on their land rights. As such, the system was actually more tolerable than the pre-Ottoman feudal system that had been in place (*ibid*: 63). Similarly, in the towns, although they were predominantly Muslim, a small Christian and Jewish merchant class emerged who enjoyed real prosperity (West, 2006: 298).

Between the 15th and 17th centuries despite progressive Islamisation, Muslims, Jews and Christians continued to live side by side. Although they frequently segregated themselves into neighbourhoods, there were no ghettoes and the Ottoman-founded cities such as Sarajevo, the new capital of Bosnia, had no walls (Wachtel, 2008:62). It wasn't until the 19th century that a growing unease developed and the social and religious differences between the largely Christian peasantry and emerging merchant classes, and the Muslim

landowners became polarised (Malcolm, 1996: 106). As the Muslims became a distinct community in medieval Bosnia they developed an ethnic as well as a religious identity. Whereas the Catholic and Orthodox Christians living in Bosnia could also identify themselves as Croats or Serbs, the Muslims could only term themselves Muslims living in Bosnia, or Bosnian Muslims, as they did not belong to a specific single ethnic group (Malcolm, 1996: 148). It was not until as late as 1993 that the name 'Bosniaks' was used to describe Bosnian Muslims (Finlan, 2004: 19), although the idea and the name had previously been advocated in 1967 by Muhamed Filipovic, a philosophy professor who was later to become the Bosnian ambassador in London (Judah, 2000b: 155).

During the 19th century the Croats and Serbs vied for power and became increasingly nationalistic in their outlook, and some asserted that the Muslims in Bosnia ought to declare themselves as either Serb or Croat (Judah, 2000b: 57). It was important to the Muslims to retain their own identity, however, and for this reason they favoured the recognition of Bosnia as an independent nation (Malcolm, 1996: 148). Even those who advocated the formation of a Yugoslav state at the beginning of the 20th century were in favour of Bosnia retaining autonomy within it, so that even if the Muslims could not claim an ethnic identity they could at least claim a national one (*ibid*). By the 20th century the term Muslim was acquiring political as well as religious significance, and in the elections of 1920 the Yugoslav Muslim Organisation took 24 seats, all of them in Bosnia, making it the third largest party in the Assembly (Benson, 2001: 33). It would not be until the census of 1971, however, that Muslims would be given the option of describing themselves as "Muslim in the sense of a nation" (Malcolm 1996: 199).

The first half of the 20th century in the Balkans was dominated by power struggles within and between the different countries. It saw the outbreak of the first and second Balkan Wars in 1912 and 1913, and the first and second World Wars in 1914 and 1939 (Wolfson, 1978: 142, 393). There were conflicting ambitions and agendas in Serbia, Bosnia, and Croatia during the early years of the 20th century as national tensions increased in response to political and economic stress (Glenny, 1999: 274). The rise of the Serbian state during this period also caused the great powers Austria-Hungary and Germany considerable alarm, as Wolfson explains:

> *"Serbia represented the two things most feared by Austria-Hungary - the possibility of Russian influence in the Balkans and Slav nationalism in the north Balkans, which included the southern part of the Empire"* (Wolfson, 1978: 20).

Specific reference was made to Serbian nationalism in a letter sent on the 5th July 1914, by the Austrian Emperor Franz Josef to Kaiser Wilhelm II in Berlin. It concerned the assassination of his nephew Archduke Franz Ferdinand on the 28th June, an event which was to prove pivotal to the start of the First World War (*ibid*: 145). In the letter, he wrote:

> *"the Sarajevo affair was not merely the bloody deed of a single individual, but was the result of a well organised conspiracy, the threads of which can be traced to Belgrade; and even though it will probably prove impossible to get evidence of the complicity of the Serbian government, there can be no doubt that its policy, directed towards the unification of all the Southern-Slav countries under the Serbian flag, is responsible for such crimes"* (*ibid*).

Figure Three shows the Balkans at the time of the Balkan Wars in 1912 and 1913 just before the outbreak of the First World War.

Figure 3: The Balkans during the Balkan Wars (Glenny, 1996: xvii)

During the Second World War, two Yugoslav resistance movements developed: the Cetniks, primarily Serbian nationalists, and the Partisans, communists led by Josip Broz Tito (Barnett, 2008: 49). They were not, however, united in their fight against the Germans and Italians and atrocities and counter atrocities were committed on both sides. The Cetniks were particularly violent towards the Muslims, killing thousands of them in massacres in southeast Bosnia and Herzegovina (Glenny 2000: 494). As a result, the Muslims were more inclined to support the Partisans whilst also still advocating the notion of an independent Bosnia (*ibid*). Figure Four shows the Balkans during the Second World War, under Nazi influence.

Figure 4: The Balkans under Nazi influence (Glenny, 1996: xix)

Yugoslavia emerged from the Second World War with Josep Broz Tito as its leader (Finlan, 2004:15, Barnett, 2006: 74). Figure 5 shows Former Yugoslavia post-1945 under Tito's rule.

Figure 5: Post-1945 Yugoslavia (Malcolm, 1996: xiii)

From the outset Yugoslavia differed from the other Eastern Bloc communist countries with its progressively de-centralised market economy and the greater degree of freedom enjoyed by its people (Carson, 1990: 361; Draper 1948) This disparity became a very real political and economic split when in 1948 Yugoslavia was expelled from the Soviet led Comminform (*ibid*). Tito proved to be popular both at home and abroad and has been credited with many things, most notably maintaining peace within Yugoslavia by balancing and controlling nationalist tendencies and ethnic tensions (Glenny, 1996: 13; LeBor, 2003: 10). However, the cracks were already beginning to show before Tito's death in 1980 and enforcing unity within the country ultimately had the opposite effect as ethnic grievances had been suppressed, not dispelled, by the centralised communist system (Silber and Little, 1996:26). As the former president of Bosnia, Alija Izetbegovic, was to point out in 1990, "by their oppression, the communists created this longing among people to express their national or religious identity" (Malcolm 1996: 219). This increasing nationalism combined with growing economic crisis in the form of rising inflation and debt, produced a situation that was ripe to be exploited by Slobodan Milosevic when he came to power in the late 1980s (LeBor, 2003: 82; 131).

Bosnia and Kosovo had long been regarded as troublesome regions in the Balkans and to an extent this continued under the rule of Tito (Glenny, 2000: 579). Relative to the rest of Yugoslavia, Bosnia stagnated and declined during the 1950s and '60s in terms of its economic growth and national income. Many young Serbs moved out of Bosnia, attracted by the excitement of Belgrade and the industrialisation of Croatia and Serbia, and many young Croats left western Herzegovina for Zagreb or the Croatian coast which was rapidly becoming a popular tourist destination (Judah, 2000b:154).

By the early 1970s, with the exception of Kosovo, Bosnia had the highest illiteracy rate, the highest proportion of people whose only education was three years at primary school, the smallest proportion of people living in towns, and the highest infant mortality rate in Yugoslavia (Malcolm 1996: 201). It can be no coincidence that the two regions with the greatest social and economic deprivation were also the most turbulent politically. Although ethnic tensions had not been quite so visible in Bosnia as they had been in Kosovo under the rule of Tito, there had been continuous academic squabbles between the Croats and the Serbs regarding ethnic history and territory (*ibid*: 204). Following the death of Tito these hostilities increased as the state of the economy worsened, and Milosevic was able to harness this discontent and use it to promote himself and his Serbian nationalist cause (Sells, 1998: xii; Silber and Little, 1996:33).

In Kosovo the situation under Tito was more obviously unsettled. In the 1950s a violent Serb nationalist campaign had left a number of Albanians dead and many more in prison (Judah, 2000a: 35). For the next ten years or so the Albanians in Kosovo endured discrimination and abuse at the hands of the predominantly Serbian police (Malcolm, 1996: 205). As a result of this a number of underground groups, pre-cursors to the Kosovo Liberation Army (KLA), began to emerge (Judah, 2000a: 35). A key turning point came in 1968 when the Kosovo Albanian University students in Pristina rioted and, for the first time, some of the Albanian grievances were addressed (Zanga, 1975).

In 1974 as a result of the Yugoslavian constitution, Kosovo became a republic in all but name when it was represented on the federal presidency. By this time it also had its own assembly, police force and national bank (Finlan, 2004: 15; Judah, 2000a: 38). Kosovo continued to become progressively Albanianised throughout the 1970s and as a result the Serbs lost their privileged status in the administration and state sector (Judah, 2000b:

152). In 1981 full scale riots broke out as Kosovo Albanians demanded that the province of Kosovo be declared a Republic (LeBor, 2003:54). The Serbs, who felt with some justification that their rights were being overlooked, were quick to suppress the violence, not wanting to see Kosovo become detached from Serbia (Judah, 2000a: 14; Judah, 2000b: 29, 47). Apart from the powerful historical status which the region had acquired, it contained many of Serbia's greatest works of religious art and architecture (Sells, 1998: 53; Benson, 2001: 3; Silber and Little, 1996: 28)

An unfortunate consequence of the hostilities in Kosovo was an increase in anti-Islamic sentiment because the Kosovo Albanians were predominantly Muslim. This became an ever more important feature of Serbian nationalism which was to have future implications for the treatment of the Muslims in Bosnia as well as those in Kosovo (Malcolm 1996: 206). Throughout the mid 1980s Serb Nationalists claimed that they were being threatened by aggressive Albanians in Kosovo and endangered by Croats in Croatia, and that the resolution of their national status must be a top priority (Glenny 2000: 625).

It was in this political climate that Milosevic came to power by "communist methods and nationalist rhetoric" (Malcolm 1996: 213). He began his political career in 1983 and rose quickly through the ranks, mentored by the senior communist politician Ivan Stambolic, When Stambolic was made president of the Serbian Communist Party in 1984 he engineered Milosevic's election as president of the Belgrade Communist Party, and by 1986 Milosevic himself had become head of the Serbian Communist Party (LeBor, 2003: 58). In 1987 Stambolic despatched Milosevic to Kosovo Polje, the site of Prince Lazar's historic battle, with the purpose of promoting national unity and easing tension between the Kosovo Albanians and the Serbs. Although on his arrival Milosevic had followed the party line, he was shocked to see the level of resentment felt by the Serbs and when he returned four days later, he took a more nationalist stance (LeBor, 2003: 78). Throughout 1988 and 1989 Milosevic organised a network of nationalist demonstrations across Serbia which climaxed in Pristina, significantly, on the 28th June 1989, the anniversary of the battle of Kosovo (Glenny, 1996: 34; Silber and Little, 1996: 70).

Between 1989 and 1990 against the backdrop of Mikhail Gorbachev's reforms in the Soviet Union, communist regimes fell throughout Eastern Europe (Wachtel, 2008: 120). The League of Communists structure in Yugoslavia dissolved and elections were held

across the six republics, Croatia, Slovenia, Macedonia, Montenegro, Bosnia–Herzegovina, and Serbia (Glenny, 1996: 38; Finlan, 2003: 16). A number of very different characters emerged as leaders; in Croatia the old partisan-turned-nationalist, Franco Tudjman was elected president, the pro-E.C. reformer Milan Kucan became president in Slovenia, Alija Izetbegovic was elected president of Bosnia-Herzegovina, and Slobodan Milosevic became president of Serbia (Finlan, 2003: 16).

Milosevic commenced his term of office by unilaterally abolishing the provincial assembly in Kosovo, reducing it from the status of an autonomous province to a municipality, and by 1991 he had also formed Serbian autonomous regions in Croatia and Bosnia (Judah 2000b: 174, Malcolm, 1996: 216). The primary purpose of revoking Kosovo's autonomy and that of the autonomy of Vojvodina in the north of Serbia was to enable Serbia to outvote the other republics in the federal presidency of Yugoslavia, but it had the additional bonus of boosting Serb morale and fuelling nationalist sentiments (Silber and Little, 1996: 63). The Kosovo Albanians reacted with fury to this move but there was little that they could do in the face of Serbia's superior military might. A whole series of discriminatory laws were passed in Belgrade which affected the Kosovo Albanians on every level including health and education. Many doctors and medical staff were sacked and those who remained came to be regarded with suspicion following an unexplained incident in which thousands of children became ill (Judah, 2000a: 70). Teachers were also sacked and a unified Serbian curriculum was imposed on the predominantly Albanian schools which ultimately resulted in the creation of a parallel education system and increasing numbers of Kosovo Albanians being taught at home as they were barred from their old schools (*ibid*). It was against this background that the KLA was formed in 1993 and a downward spiral of violence commenced (*ibid*: 90; 103).

Whilst the situation had been steadily deteriorating in Kosovo, from the late 1980s Bosnia had become increasingly alarmed that it would become a victim of Serb and Croat nationalism, although at that time only the Serbs appeared to be actively seeking to acquire Bosnian territory claiming that the Serbs within Bosnia were in danger (Malcolm, 1996: 224; Judah 2000b: 226). At the elections in 1990 although Alija Izetbegovic, leader of the Bosnian Muslims, had emerged as the winner he had chosen to form a coalition between the three major parties in an attempt to promote national unity (Benson, 2001: 158; Judah, 2000b: 192) . Unfortunately from an early stage it was clear that the Serb

Democratic Party (SDS), founded and led by Dr Radovan Karadzic and supported by Slobodan Milosevic, had a different agenda i.e. to transfer Bosnia, Macedonia, Montenegro and most of Croatia, to Serbia (Malcolm, 1996: 226).

The Serbs became increasingly blatant regarding their aims in Bosnia-Herzegovina throughout 1991, whilst elsewhere in the Former Republic of Yugoslavia open warfare had broken out. Slovenia and Croatia had both declared their independence on the 25th June 1991, and the predominantly Serb Yugoslavian Army (the JNA) had been quick to respond, firstly by deploying troops to Slovenia and then to Croatia (Finlan, 2004: 22; LeBor, 2003: 137). The Slovenian people were well prepared and the European community quickly intervened, so the fighting there lasted little over a week (*ibid*). This was not, however, the case in Croatia where the war was to last for four years until 1995 (Silber and Little, 1996: 169). A discussion of the atrocities which took place within Croatia during that time, and in 1993 in Bosnia as the Bosnian Croats fought the Bosniaks, is outside the scope of this thesis but details of the crimes, subsequent indictments and prosecutions can be found on the ICTY website, <http://www.icty.org>.

The events in Slovenia and Croatia in 1991 acted as a catalyst for those in Bosnia-Herzegovina. Following a referendum in March 1992 that had seen the people vote in favour of an independent Bosnia-Herzegovina with equal status for Muslim, Croat and Serb citizens, Serb paramilitary forces threatened to stage a coup (Malcolm, 1996: 231). This however was aborted at the last minute and the Serbs tried an alternative tactic- that of negotiating the division of Bosnia into territories that were predominantly Serbian. Sims (1996) claims that this plan was formulated at the Serbian Academy of Sciences in 1986 as part of a "blueprint" for Serbian expansionism (Simms, 1996: 76). By 1991, the SDS had achieved their aim and established four Serb Autonomous Regions within Bosnia (Malcolm, 1996: 227). Simultaneously, local Serbs were supplied with arms and plans were drawn up to take over local police forces and municipal administration (LeBor, 2003: 173; Glenny, 1996:150)

In April 1992, a matter of days before Bosnia was recognised by the European Community as an independent state, Serb paramilitary forces launched an attack on it, killing and terrorising non-Serbian civilians. They were led by the infamous Zeljko Raznatovic, otherwise known as Arkan, a "mafia-style criminal" (Glenny, 1996: 39) and

"fanatical ethnic cleanser" (Kofman, 1996:106) who was wanted by Interpol to face charges including murder, robbery and extortion (Judah, 200b: 185; Glenny, 1996: 39). Arkan and his 'Tigers' were soon joined by the JNA who claimed that they were protecting the Bosnian Serbs against "open aggression" (Malcolm 1996: 236). The JNA were enthusiastically directed by Radovan Karadzic and General Ratko Mladic who, after May 1992, became Commander of the Bosnian Serb armed forces (ICTY 1995a; Beric, 2002: 41). The two would subsequently be indicted by ICTY for the atrocities they ordered to be committed, and they are currently facing charges of genocide and crimes against humanity (*ibid*).

The city of Sarajevo remained under siege from 1992 to 1995, during which time it was repeatedly shelled whilst snipers systematically killed men, women and children, some aged as young as two years (ICTY 1995a; ICTY 1999; Beric, 2002: 35; Halilbegovich, 2008: 50). Under constant attack and deprived of food, heating, electricity and running water, the inhabitants of the city tried to continue with their daily lives as "under the eyes of the world, live on television every day, a European city was turned into a giant concentration camp" (LeBor, 2003:178). There is also written evidence of shelling in more rural areas, such as the village of Stupari in the Tuzla region (Tuzla Cantonal Court, 2003).

Elsewhere in Bosnia, detention centres, or "killing camps" were set up for the purpose of imprisoning and murdering non-Serbian civilians (Sells, 1998:19; Kofman, 1996: 95). The existence of these camps and the atrocities committed within them had initially been denied by Milosevic (Blitz, 1996: 192) but the pretence could no longer be maintained once they had been brought to the attention of the world in July 1992 by journalists from the New York paper, *Newsday*, the British *Guardian* newspaper, and the television news company ITN (Silber and Little, 1996: 248). It later became apparent that many key figures in the international community, including Boutros Boutros-Gali, the Secretary-General of the United Nations (UN), had been informed of the camps prior to this in May 1992 (*ibid*).

The ICTY indictments against Slobodan Milosevic and his colleagues provide details of the appalling conditions and atrocities committed in some of the camps including Omarska, Keraterm, Trnopolje and Susica (ICTY 1995a; ICTY 2001a; ICTY 2001b;

ICTY 2003). In 1999 a group of 143 individuals who had been held at the Omarska prison camp were exhumed for post-mortem examination. Dr John Clark, Chief Pathologist with ICTY conducted the examinations and found that 93% of the whole bodies (n=73) had ante-mortem injuries, typically gunshot wounds or, more commonly, evidence of blunt force trauma (Clark, 1999). His findings were consistent with the accounts of a survivor from the camp, who described his ordeal in horrific detail in his novel *The Tenth Circle of Hell* (Hukanovic, 1997). Such prison camps also existed within the city of Sarajevo, and the indictment against Goran Vasic describes some of the appalling abuses to which prisoners were subjected. These included shootings, beatings, prisoners being set upon by dogs and harnessed to carts like horses and forced to pull heavy loads of coal and furniture across courtyards (Cantonal Court in Sarajevo, 2001).

The ICTY indictments detail numerous accounts of killings and mass executions, amongst the most well documented being the slaughter of up to 8000 Bosniak men and boys and the expulsion of around 13,000 women and children at the United Nations 'safe haven' of Srebrenica (ICTY, 1995b, 2001e, 2001f; Amnesty International, 2005; Malcolm, 1996; Honig and Both, 2001; Beric, 2002; Peress and Stover, 1998; Yamashita, 2004; Guardian Unlimited, 2003; E.A.A.F. 1998; Manning, 2003; LeBor, 2003). The region had been predominantly Muslim before the war and strategically it was important to both the Bosnian Muslims and the Serbs, lying between Tuzla to the north and Zepa to the south, both of which were under Muslim control (ICTY, 2001f). During the war thousands of Muslim families migrated to Srebrenica, which was protected by 300 Dutch UN soldiers, hoping that they would be spared from the mass expulsions and killings that were occurring elsewhere throughout the country. Unfortunately this proved not to be the case and on the 11 July 1995 the area was overrun by Serbian forces under the command of General Ratko Mladic (ICTY, 1995b). The men and boys living there were separated from the women and children, loaded onto trucks and taken away to various locations where they were executed and then buried in mass graves (*ibid*). The crimes committed there were recognised as an "act of genocide", a "crime against humanity" and a "violation of the laws or customs of war" (ICTY, 1995b) and convictions against senior officers were secured in 2001 and 2010 (ICTY, 2001f, 2010c). The massacre at Srebrenica was on a scale not witnessed in Europe since the Second World War, and Milosevic claimed that by this time he had lost control of both Karadic and Mladic, who "appeared to be revelling in the blood bath" (LeBor, 2003: 238)

In addition to the mass murders and expulsions, religious and sacred sites were deliberately targeted across the country and there was widespread destruction of Mosques and Catholic churches throughout Bosnia-Herzegovina (ICTY 1995a; Chapman, 1994). Some of these were of great historical importance such as the early 16th century Fethija mosque in Bihac, and the Sultan Bayazid Imperial Mosque in Foca, a city which was particularly badly hit losing all of its 14 mosques and many of its finest Islamic buildings (Chapman, 1994:123).

The attitude of Western politicians towards these events in Former Yugoslavia has been the subject of much debate, but the majority of accounts suggest that at least initially they seriously misjudged Serbia's intentions and the severity of the situation (Conversi, 1996: 260; Silber and Little, 1996: 254; Malcolm, 1996: 241; Blitz, 1996:189). Many chose to interpret the atrocities being committed as inevitable consequence of ethnic tensions brought about by the disintegration of communist rule (*ibid*). Such attitudes were typified by John Major the British Prime Minister, who in 1993 stated "The conflict in Bosnia was a product of impersonal and inevitable forces beyond anyone's control" (Mazower, 2000: 143). Earlier than this and with a similar lack of understanding, Lord Carrington the EEC negotiator, had declared "Everybody is to blame for what is happening in Bosnia and Herzegovina" (Malcolm, 1996: 242).

Whilst the Serbs and pro Serb factions might still disagree, it is now widely recognised by many intellectuals and politicians that the capture, torture and execution of Muslim, Croat and other non-Serb men, women and children in Bosnia-Herzegovina, was a deliberate strategy of ethnic cleansing aimed at eradicating the Muslim and Croat populations (Beric, 2002: 41; Simms, 1996: 72). In his landmark book *The Bridge Betrayed* Michael Sells argues that the events which took place between 1992 and 1995 in Bosnia were not war or civil war, but "organised destruction of a largely unarmed population" (Sells 1998: 117) during which the Serb army captured any towns and villages that lacked sufficient military defences and then set about killing the civilians that lived there (*ibid*).

It was the massacre at Srebrenica, closely followed by the particularly bloody shelling of a market place in Sarajevo on the 28th August 1995, which finally spurred the West into action. NATO issued an ultimatum to the Bosnian Serbs and two days later, supported by the United Nations Protection Force (UNPROFOR) artillery units, it launched a series of

air strikes over Bosnia (LeBor, 2003:239; Finlan, 2004: 82). The NATO operation, which was named Operation Deliberate Force, was suspended briefly on the 1st September when an attempt to negotiate with Mladic and the Serb leaders was made, but the talks ended in failure and NATO resumed their campaign on the 5th September (Finlan, 2004: 81). The attacks had a profound physical and mental effect on the Serbian forces and by the 14th September negotiations had made "surprising progress" (*ibid*; LeBor, 2003: 241). Operation Deliberate Force was formally ended on the 20th September paving the way for diplomatic negotiations to begin (Finlan, 2004: 81).

On the 1st November a meeting took place at the Wright-Patterson Airbase in Dayton, Ohio. It was attended by Milosevic, Tudjman and Izetbegovic, and mediators from America, Britain, Russia, Germany and France (Silber and Little, 1996: 364). The dominant players in the negotiations were Slobodan Milosevic and the United States assistant secretary of state for Canadian and European affairs, Richard Holbrooke, who would later be credited as the architect of the Dayton Peace Accords (*ibid*; BBC News, 1999b). The talks lasted for approximately three weeks when after much negotiation the three parties agreed upon a cease fire and the division of Bosnia and Herzegovina into two distinct entities, the Muslim-Croat Federation and the Bosnian Serb Republic (See Figure One, Chapter One). Agreements were also reached regarding the constitution of Bosnia and Herzegovina, regional stabilisation (which included the presence of peace keeping organisations), provisions for human rights, refugees and displaced persons (U.S. Department of State, 1995). The Dayton Peace Agreement was finally initialled by the Republic of Bosnia and Herzegovina, the Republic of Croatia, and the Federal Republic of Yugoslavia (FRY) on the 21st November 1995 at the Wright-Patterson Airbase, and signed on the 14th December 1995 in Paris (U.S. Department of State, 1996).

Unfortunately the Dayton Agreement did not address the problems between the Serbs and the Kosovo Albanians. The KLA had become increasingly active launching attacks on the Serbian police forces and Albanian 'collaborators' (Human Rights Watch, 2001:31-38; Judah, 2000a: 131). Between 1993 and 1996, these attacks were relatively sporadic, but throughout 1997 they increased and became more organised (*ibid*). The Serbian police retaliated by attacking and killing suspected KLA personnel and their families, and by destroying their villages in sprees of violence which were to escalate after Slobodan Milosevic came to power. At least one hundred Kosovo Albanians 'disappeared' between

February and October 1998, about half of whom were in the custody of the police (Human Rights Watch, 2001:48). The KLA also committed "serious violations of international humanitarian law" (*ibid*: 50) during this time, including the taking of hostages and extra-judicial executions (*ibid*; ICTY, 2004b).

The attacks and counter attacks continued to increase until what appeared to be a turning point was reached on the 15th January 1999. On this date 45 Kosovo Albanian civilians were killed in the village of Racak, in the Stimlje / Shtime municipality (Human Rights Watch, 2001: 57; ICTY 2001c: 7). According to the ICTY Indictment, the village was first shelled by the VJ Unit (of the Yugoslav Army) and then the Serb police conducted house to house searches, shooting anyone that they could find (ICTY 2001c: 7). The chief prosecutor of the war crimes tribunal, Louise Arbor was refused entry into Kosovo to investigate the incident and an outcry amongst Western politicians ensued. It was at this point that together with NATO, as in Bosnia, they began to consider the use of force as well as diplomacy to resolve the problems in the region (Human Rights Watch, 2001:58).

Where he had been successful in Dayton, Holbrooke failed to persuade Milosevic to back down over Kosovo, and on the 24th March 1998 NATO commenced a 78 day bombing campaign over Kosovo and the rest of Serbia (Finlan 2004:87; BBC News, 1999b). Whilst ultimately the campaign helped to bring about a resolution to the conflict it had two unfortunate consequences: the civilian deaths which occurred as a direct result of the bombing, and an increase in the violence directed towards the Kosovo Albanians in retribution for the attacks (ICTY, 2001c; Human Rights Watch, 2001: 372, 424; Judah 2000a:180). In addition to this hundreds of thousands of Kosovo Albanians were forcibly displaced from their homes (*ibid*).

The 2001 report by Human Rights Watch illustrates that from the beginning of the NATO offensive on the 20th March, there was a "clear and rapid spike in extrajudicial executions, culminating around March 25-27" (Human Rights Watch, 2001:424). They identified and analysed two other peaks in violence which they interpreted as "carefully planned and implemented strikes that fit into the government's larger strategic aims" rather than random acts of violence (*ibid*).

In terms of deaths which occurred as a direct result of the air strikes, Human Rights Watch found that there were ninety separate incidents involving civilian deaths throughout the Federal Republic of Yugoslavia (Human Rights Watch, 2001: 437). Approximately 500 people are estimated to have been killed as a result of the bombings, with 56 – 60% of the deaths occurring in Kosovo (*ibid*). Some of the incidents involved only children, such as that at Doganovic near Kacanik which took place on the 24th April, where five children ranging in age from 3 years to 15 years were killed (Human Rights Watch, 2000: 5). The largest numbers of casualties were sustained during attacks on convoys or transportation links as internally displaced people moved around or tried to flee the country (Judah, 2000a: 260). There is some evidence to suggest that civilians were used as 'human shields' and debate concerning the fact that the NATO pilots were flying at too high an altitude to identify their targets properly (Human Rights Watch, 2001: 439).

Whilst the bombing and the fighting on the ground continued, diplomatic negotiations were resumed, led by the Americans, the Russians and the designated UN Envoy Martti Ahtisaari, President of Finland. Some broad principles for a settlement were proposed at the G-8 summit in Germany, and after much discussion an agreement was signed on the 9th June 1999 (Judah, 2000a: 279). On the 10th June NATO stopped its bombing and the UN Security council passed Resolution 1244 which "sanctioned the entry of NATO troops in Kosovo and guaranteed Yugoslav sovereignty" (*ibid*: 285).

During Milosevic's two terms of office which lasted from July 1997 until October 2000, it is alleged that he and other top ranking officials in the Serbian government,

> *"planned, instigated, ordered, committed or otherwise aided and abetted in a campaign of terror and violence directed at Kosovo Albanian civilians living in Kosovo in the FRY"* (ICTY, 2001c; see also Stover and Shigekane, 2004: 93).

The purpose of this campaign according to the indictment was to remove "a substantial portion of the Kosovo Albanian population from Kosovo in an effort to ensure continued Serbian control over the province", and to this end they "murdered hundreds of Kosovo Albanian citizens". The indictment goes on to say that,

> *"these killings occurred in a widespread or systematic manner throughout the province of Kosovo and resulted in the deaths of numerous men, women and children".* (ICTY, 2001c)

In addition to the killings, by May 1999 it was estimated that over 740,000 Kosovo Albanians had been expelled from Kosovo, and thousands more were internally displaced (*ibid*).

2.2 Childhood in Kosovo and Bosnia-Herzegovina: Demography, Society and Education

2.2.1 The Definition of Childhood

If the specific plight of children during the wars is to be examined it is important to define exactly what childhood means in this context. When it comes to interpretation of the data, establishing at what age childhood was considered to end can perhaps help to elucidate why in some cases children were being treated in the same way as adults. Did this occur because they were actually perceived to be adults, or was it simply because there was no regard for their status as vulnerable members of society who required protection?

The definition of childhood is subjective and differs from society to society depending on its demographic and economic structure and social attitudes. In England, Wales, Northern Ireland and Scotland it is agreed that "a child is anyone who has not yet reached their 18th birthday" (Walters, 2008). At the convention on the Rights of the Child, the UN Committee on the Rights of the Child stated "A child means every human being below the age of eighteen years unless, under the law applicable to the child, majority is attained earlier" (United Nations, 2002). The age of criminal responsibility for a child is different however, being the age at which, in the eyes of the law, a child is capable of committing a crime and therefore old enough to stand trial and be convicted of a criminal offence (Walters, 2008). The UN treaty on the Rights of the Child was ratified (but not signed) by Bosnia and Herzegovina in 1993 and by Serbia in 2001 (United Nations, 2010a).

Interpretation of the statistical data relating to demographics, education and the social status of children in Bosnia-Herzegovina and Kosovo was difficult as there was uncertainty regarding the validity and source of some of the data, particularly during the hostilities. It was, however, possible to draw some broad conclusions in relation to both countries.

2.2.2 Bosnia-Herzegovina

In Bosnia, the census data for 1998 uses age 14 to 15 years as a cut-off point for the end of childhood, with individuals being grouped as 0-14 years then 15-64 years. In addition, although "military age" is stated as being 19 years, military availability relates to those aged between 15 and 49 years (CIA, 1998). The legal age for marriage in 2006 was 18 years (United Nations, 2010b: 1), but a UNICEF report published in 2007 found child marriages to occur at a rate of 2% in urban areas and 7% in rural areas (UNICEF 2007).

According to the 1998 census in Bosnia, the birth rate was 8.72 per thousand, and those under the age of 15 years made up 18% of the total population (CIA, 1998: 3). The death rate was 12.32 per thousand and the infant mortality rate, i.e. number of deaths in those aged less than one year, was cited as 30.8 per thousand live births (*ibid*). Another study in 1999, however, reported a far lower infant mortality rate of 15 per 1000 live births (Rechel *et al*, 2004: 3). The CIA acknowledge that their figures are only estimates which are "subject to considerable error because of the dislocations caused by military action and ethnic cleansing" (CIA, 1998: 3), which might explain the apparent significant reduction in infant deaths over the period of just one year. It is also unclear in both reports where in Bosnia-Herzegovina the information was derived from – the whole of the country or just one of the two entities. The mortality rate for those aged under five years dramatically dropped from 82 per thousand in 1970 to 22 per thousand in 1990, and in 2007 it was 14 per thousand (UNICEF, 2010: 2). This, together with the other data suggests that despite the conflicts there has been an improvement in health care standards for children since 1970.

Between 1996 and 2005, 12% of males and 10% of females between the ages of 5 and 14 years were engaged in child labour in Bosnia (UNICEF 2005). The UNICEF classification for child labour is as follows:

> "*(a) children 5 to 11 years of age that during the week preceding the survey did at least one hour of economic activity or at least 28 hours of domestic work, and (b) children 12 to 14 years of age that during the week preceding the survey did at least 14 hours of economic activity or at least 42 hours of economic activity and domestic work combined"* (UNICEF, 2005).

The results of a Multiple Indicator Cluster survey which included families from both the Muslim-Croat Federation and the Bosnian Serb Republic, appeared to show an improved situation in 2006 with child labour occurring at an overall rate of 6.6% in boys and 3.9% in girls (UNICEF, 2006: 55). The survey also found a strong correlation between child labour and the type of area a child is living in, with twice as many children in rural areas as those in urban areas being involved in child labour (*ibid).*

With regard to education the number of primary and secondary schools and students steadily decreased between 1965 and 1999 with a dramatic reduction occurring during the war, particularly in primary education (Spaulding, 1998: 5). Conversely, the number of higher education facilities maintained a steady increase between 1965 and 1999 even during the hostilities (*ibid:* 6). It is unclear why this situation occurred, but by his own admission the figures in Spaulding's study are difficult to interpret because prior to the conflict they refer to the whole of Bosnia and after 1995 they refer only to the Federation entity and not to the Republika Srpska entity (*ibid*: 4).

During the war, education was organised according to three separate systems for Bosniaks, Bosnian-Croats and Bosnian-Serbs, and so there were (and still are) three national curricula, three sets of textbooks and three different sets of legislation (ETF, 2009: 4). Of all the ethnic groups in Bosnia, the Roma were and still are the most poorly educated (*ibid*; Amnesty International 2006: 2). Although they found it difficult to get accurate data on Roma populations, Amnesty International estimated that they comprise approximately 60,000 out of a population of four million and that only 15 % of Roma children complete elementary school (Amnesty International 2006: 1*).* In 2009 the figure for non-attendance or non-completion of primary school for the Roma population was more than 70% (ETF, 2009: 4).

According to a UNICEF report in 2005, inequalities between the sexes were not apparent in primary school children in Bosnia-Herzegovina between 1996 and 2005. Primary school attendance was 93% for both boys and girls, and 99% reached Grade 5 (UNICEF, 2005). During that period Bosnian girls fared better than boys in secondary education with 71% attendance compared to 68% respectively (*ibid*). The revised figures for 2000 to 2007 are interesting because they show that the percentage of children attending primary school dropped slightly and males and females were no longer equal, at 92% for boys and 89% for girls. Secondary school attendance had increased, however, with both sexes showing an equal attendance of 89% (UNICEF, 2007). Unfortunately, when just the rural communities are examined a very different picture emerges. A Living Standard Measurement Survey conducted in 2001 showed that only 53% of women aged 25 to 29 years had attended secondary school, compared to 66.3 % of males (AgriPolicy, 2006: 19). In the older age groups the situation was even worse, for example of those aged between 40 and 44 years, only 22.5% of women had attended secondary school compared to 59.65% of men (*ibid*).

Child marriage (marriage before the age of 18) is also more prolific in rural areas than urban ones occurring at rates of 13.1% and 5.1% respectively. It is also highly correlated to poverty and poor education (UNICEF, 2006: 57). A discussion of the status of women within marriage in Bosnia-Herzegovina is outside the scope of this discussion, but some insight can be gained from a study by Barbara Franz into the fate of refugee Bosnian men and women in Austria (Franz, 2000). Franz found that overall, women adapted far better than men to life in Austria despite often having to take more than one badly paid job in order to survive (*ibid*: 4). She also found that being in Austria had "increased their personal freedom and influence in family decisions" (*ibid*: 1) and that it was often the decision of women and children to remain in Austria when given the chance to return to Bosnia (*ibid*: 9).

With the exception of the Roma, the experience of childhood in Bosnia-Herzegovina prior to the war appears to have been dependent on geography rather than ethnic identity. For example, in Sarajevo and Gorazde many Serbian and Muslim children enjoyed an equally good standard of living and education comparable to that of any other child living in a modern city in Europe (Halilbegovich, 2008: 7; Heleta, 2008: 8). In rural areas, however, even ten years after the war it has been reported that "the age and educational structure of

the population is unfavourable to that from urban areas" (AgriPolicy, 2006: 5). Only in the sphere of discipline, and in particular discipline by violent means, do children seem to fare better in rural rather than urban environments. Here it was found that violent disciplining was practised at a rate of 4.1% in urban areas and 2.5% in rural areas, and that girls were more likely to be subjected to it than boys (UNICEF, 2006: 56). As 56% of the population live in rural locations (AgriPolicy, 2006: 5) the above findings suggest wide-scale inequalities in Bosnian society which directly affect children.

2.2.3. Kosovo

In Kosovo an UNMIK fact sheet dated May 2003 classifies the Economically Active Population as being aged between 15 and 65 years (Wittkowsky, 2003: 3). As with Bosnia this suggests that the end of childhood is perceived as being around 14 to 15 years. Even now, it is very difficult to obtain accurate past and present population data for Kosovo. A census was conducted in 1991 but it was boycotted by the Albanians protesting against Serb repression, and so the data was biased (Szayna, 2000: 128; Judah, 1999a: 44; Rechel *et al*, 2004: 2). The last official census was in 1981, but there were allegations of rigging under the Albanian dominated Statistics Office (Wikipedia, 2003: 1). The Wikepedia data source is unfortunately un-cited and despite extensive research, all other references to census rigging lead back to the Wikepedia reference! In 2003 it was estimated that 55% of the population (one million people) were economically active, i.e. aged between 15 and 65 years, but the data source did not provide information on numbers of children or birth rates (Wittowsky, 2003: 3).

A study by UNICEF in 2009 found that compared to Central and South Eastern Europe, Kosovo still has a low birth registration rate (UNICEF, 2010). It also found that ethnic disparities were evident, with the highest rate of non-registration existing amongst the Roma, Ashkali and Egyptian communities, followed by Albanians and the Turks (*ibid*). Anecdotally, the birth rate amongst Kosovo Albanians is claimed to be very high and this was used to promote the Serb nationalist cause prior to and during the conflicts (OSCE, 1999a: 208; Sells, 1998: 55, 63; Judah, 200a: 44). One publication on potential ethnic conflict which examined census data within Former Yugoslavia stated that the high fertility rate among Albanians was responsible for a "23 percent rate of population

increase in Kosovo (the poorest region) between 1981 and 1990" (Szayna and Zanini, 2000:130).

The high birth rate in the Albanian population also appears in some instances to have been the rationale for violence directed specifically against children and their mothers (OSCE, 1999a: 208). It seems unlikely that Serb nationalist claims that the high birth rate was part of a deliberate Albanian policy to out-number the Serbs had any basis in reality. More likely is that it simply reflects the traditional nature of Kosovo Albanian society, particularly in rural areas where there is less economic security and access to reproductive healthcare (*ibid*).

It is difficult to find census data on child and infant mortality rates during the 1990s and earlier, but a study by the United Nations in 2008 found that Kosovo had the highest infant mortality rate in Europe at between 35 and 49 deaths for every 1000 births each year (United Nations Kosovo Team, 2008). Apparently the peri-natal mortality rate has fallen since 2000, but it still remains one of the highest in Europe (*ibid*). The report which provided this information explains the findings in terms of inefficiencies in the health system as well as social, economic and environmental factors (*ibid*).

A comprehensive study by Asllan Pushka attempted to quantify educational attainment between 1961 and 1981 (Pushka, 2001). The results showed some very clear differences between ethnic groups, male and female children, and those who lived in urban and rural communities (*ibid*).

In all ethnic groups, males were better educated than females, spending more years in full time education (*ibid*: 4). In 1981 the most poorly educated children were female Roma (Gypsies) who spent an average of only 2.28 years at school, and the best educated were Montenegrin males who averaged 10.61 years (*ibid*). When the averages for both males and females were considered the Montenegrins were still the best educated and the Roma the worst in terms of length of time spent in education and discrepancy between males and females. The Serbs came second to the Montenegrins followed by the Turks, and the Albanians and the Muslims averaged 6.61 and 6.18 years respectively. The Croats spent on average only 5.76 years in education but had the smallest discrepancy between the sexes (*ibid*).

The pattern identified by Pushka varies slightly from the model suggested by Szayna and Zanini, which ranked the ethnic groups across former Yugoslavia in terms of "privileged" and "dominated" based on 1981 census data (Szayna and Zanini, 2000: 100). Although both studies placed the Serbs and the Montenegrins higher than the Albanians and Muslims in terms of rank and educational attainment respectively, Szayna and Zanini considered the Croats to be the second most privileged group, bettered only by the Slovenes. Using the same census data, Pushkin had placed the Croats second from the bottom in terms of educational attainment, only just above the Roma (Pushka, 2001: 4). Either this reflects the fact that Pushka was referring specifically to the Croats within Kosovo rather than those in Croatia, or it means that rank and privilege do not equal educational attainment.

Pushka found that one of the overriding factors relating to educational attainment was geography. Children in urban areas spent more years in education than those in rural areas, but the discrepancy between the males and females was proportionally equivalent wherever they lived (*ibid*: 5). If an area became industrialised then education improved, and it was also better in areas that were politically favoured (*ibid*: 7). The percentage of population with secondary or higher education was very small in Kosovo until 1971 but by 1981 it had risen to almost 50% in the most industrialised areas, Pristina and Mitrovice (*ibid*: 12). The figures for most of the other municipalities however, remained in the lower limit of 25% (*ibid*).

Pushka's study shows that although educational standards in Kosovo improved considerably between 1961 and 1981, discrepancies still existed between males and females and the different ethnic groups. By 1996 the difference between the Serbs and the Albanians had become much more pronounced as a result of Milosevic's legislation and the imposition of a unified Serb curriculum (Judah, 2000a: 71). It ended teaching in Albanian in most secondary schools, cut Albanian-language teaching at Pristina University, and caused around 6,000 secondary school teachers and 800 university teaching staff who failed to adopt the new curriculum, to be sacked (OSCE, 1999a: 250). The new curriculum led to the development of a parallel education system and a "virtual system of apartheid" (*ibid*: 260) whereby the majority of primary and secondary Albanian schooling took place in private homes, whilst the Serb children went to school. This

inevitably led to differences in standards of teaching and educational attainment as those being privately taught had limited access to resources, particularly in the science subjects (Judah, 2000a: 70). There must surely also have been a psychological effect on the children involved as the message this conveyed was that the Serbs were superior to Albanians. The school year 1995-6 showed a drop in enrolment in primary schools of 11.9% compared to 1989-90, the number of secondary school students was down by a factor of 21.4% compared to 1990-1, and the number of Kosovan University students was almost halved compared to 1989-90 levels (*ibid*: 71).

A more recent study showed that in Kosovo only 75% of the children who completed primary education continued on to secondary education and of those, only 45% completed secondary school (UNICEF, 2003: 7). When Albanian girls are examined as an isolated group, the attendance rate at secondary school fell to 54% (*ibid*), and as in Bosnia, the number of females included in secondary education was higher in urban than rural areas (*ibid*: 8). Worryingly the study also showed that 9.5% of females aged 16-19 years were completely illiterate, whilst 16.3% had only a very basic level of literacy (*ibid*). The main reasons cited for this situation include economic hardship, family obstacles, security issues, distance to school facilities, early marriage and "the mentality of the Albanian society [which] tended to prevent females from entering secondary education" (*ibid*). This presents a rather gloomy reality for female Kosovo Albanian children in the 21st century, particularly those living in rural environments.

Overall, the experience of childhood in Kosovo during the 1980s and 1990s appears to have been much more dependent on ethnicity than was the case in Bosnia-Herzegovina. This is particularly true with regard to education, with both Albanian and Serb children experiencing discrimination at different periods in time. In common with Bosnia, however, children living in urbanised areas appeared to be (and still are) more advantaged than those living in rural areas (UNICEF 2003: 20).

In both countries the end of childhood appears to be recognised as 15 years of age, although the legal age for marriage is 18 years. Despite this a significant number of children, particularly those living in rural areas, do not complete their secondary education and / or marry before the age of 18. In both countries Roma children appear to be by far the most disadvantaged group.

Given the subjectivity of the term 'child,' it was decided for the purposes of this research to use the local census classifications to determine who was perceived to be a child in Kosovo and Bosnia-Herzegovina in the 1990s. As can be seen from the discussions above, 14 to 15 years appears to be widely accepted as the age at which an individual may finish secondary education and become economically active. It was therefore decided that 15 years of age was the upper limit to which the definition of child could be applied. Unfortunately relating this definition to the forensic data was difficult due to the methodological problems that exist in determining age at death in the mid to late teens, and the variability in age ranges and classifications assigned by different teams in the collection of forensic data. A full discussion of this can be found in Chapter Four, Section 4.2.

2.3 General Impact of the War on Children

During the 1990s, more than two million children across the world died as a result of armed conflict, often deliberately targeted or murdered (Machel, 2001: 1). More than three times that number were permanently disabled or wounded (*ibid*). In times of war children will often find themselves uprooted from their homes and internally displaced, they may be forced to live in refugee camps, their food and water supply will often be disrupted and contaminated (sometimes deliberately) and this can result in malnourishment and disease (*ibid*, Human Rights Watch, 2001: 134, 145). The psychological effects can be devastating as children may witness parents and other family members being injured or killed, they may live in constant fear for their own lives, and many may subsequently suffer from Post Traumatic Stress Disorder (Krippner and MacIntyre, 2003; 7; Stuvland *et al*, 2001:10). In addition to this they are at risk from deliberate acts of violence (see section 2.5), landmines, and other unexploded ordnance (Machel, 2001: 105).

Research from the former Yugoslavia on war-related trauma suggests that over 90% of children who lived in high risk zones such as Sarajevo were exposed to traumatic life-events (Barath, 2003: 155). Tables 1 and 2 summarise some of the findings from detailed studies commissioned by UNICEF, into the impact of the war on children in Bosnia-Herzegovina (Stuvland *et al*, 2001: 14) and Kosovo (Barath, 2003:156). They show that the children's experiences differed depending, for example, on whether they were forcibly

expelled from their homes or whether they were under siege. Relatively few children from the Republika Srbska had experienced shelling at a close distance or seen somebody killed, but they had the highest percentage of family members killed. Out of the four groups, the highest percentage of children who believed that they would be killed was found in Kosovo. Whatever the relative percentages, the findings illustrate a staggering range of traumatic events experienced by a large proportion of children.

Table 1: Childhood experiences during the war, Bosnia-Herzegovina (Stuvland *et al*, 2001:14)

	Primary schools in Sarajevo 1993 (n=1505) % yes	**Primary schools in W. Mostar and Herzegovina 1994 (n=646) % yes**	**Primary schools in E. Mostar and Herzegovina 1995 (n=2976) % yes**	**Secondary schools in Republika Srpska 1997 (n=700) % yes**
Have you been forced to flee your town or village because of war?	23	70	75	-
Have you experienced shelling at very close distance?	97	81	91	36
Have you experienced shooting at very close distance?	96	78	79	28
Have you stayed for a long time in a shelter?	87	56	90	-
Have you seen someone who was injured in the war?	79	54	63	-
Have you seen someone who was killed in the war?	46	34	48	17
Has your home been shelled or attacked?	59	37	59	
Have you been shot at by snipers?	55	15	52	
Has a family member been wounded or killed?	37	-	52 (killed only, no data for wounded or killed)	58 (killed only, no data for wounded or killed)
Have you ever thought you could die from cold?	17	-	25	-
Have you ever thought you could die from food or water shortage?	11	-	41	-
Have you helped or carried wounded or killed people?	33	-	11	-
Have you thought you could get killed in the war?	66	40	68	32 (killed or seriously injured, not just killed)

Table 2: Children from Kosovo aged 9 to 15 years who were living in a refugee camp in Macedonia, July 1999 (after Barath 2003: 156)

Type of Experience	**Percentage Affected (Sample number unknown)**
Were forced to leave their homes due to violence or threat of violence	77
Strongly believed they might be killed or seriously hurt	75
Experienced enemy soldiers forcibly entering their residence	63
Witnessed an act of physical assault on a loved one	62
Lost a close member of his or her extended family	52
Saw a known person severely injured	51
Believed they would starve or die of thirst	48
Witnessed shooting from a very close distance	46
Saw the body of someone who had been killed	43
Were physically assaulted, i.e. hit or kicked by an unknown person	41
Were personally threatened with serious injury or death	30
Were arrested, taken to prison or confined in a detention camp	21

First-hand accounts of two children's experiences (one a Bosnian Serb and one a Bosnian Muslim) describe how major disruptions to schooling occurred whilst the cities of Gorazde and Sarajevo were under siege (Heleta, 2008: 27; Halilbegovich, 2008: 65). School was often cancelled or children simply stopped going for fear of being killed by a sniper, and there were occasions where classes would be interrupted as shells actually hit schools causing multiple fatalities and injuries (*ibid*).

Statistics relating to child health and mortality rates can provide indicators of child welfare particularly during times of war and conflict. A study investigating the effect of civil war on infant mortality found that in a "typical" five year war it was increased by 13%, and that in the five years following the war it persisted at a level of 11% higher the baseline, i.e. prior to the conflict (Collier *et al*, 2003: 23). Increased mortality rates are attributed largely to the diseases, in particular infections, which proliferate amongst internally displaced people in refugee camps (*ibid*: 25, 169). The same study found that the psychological effects of civil war, including PTSD, are "large and highly persistent" and that mental trauma can continue long after the war, particularly for those living in a refugee camp (*ibid*: 30).

Witness statements from the Organisation for Security and Cooperation in Europe Kosovo Verification Mission (OSCE-KVM) report, describe incidents where children were forced to live under very severe physical conditions which resulted in deaths from hunger (OSCE, 1999a: 210). This included at least three or four child deaths per day from cold and hunger whilst hiding in the mountains from the Serbs (*ibid*: 182). They also describe deaths caused by "other reasons" (*ibid*: 211) relating to forced expulsions, for example, the suffocation of two infants on a train because it was too full of internally displaced people, and the deaths of two babies as the population of a village in Decani was forced to leave and walk to Albania (*ibid*). There are reports too of children having become separated from their families as they were displaced and experiencing severe psychological trauma as a result (UNICEF, 1999: 2).

The effects of war on the economy can be devastating, and this was evident in both Kosovo and Bosnia-Herzegovina. In Kosovo normal agricultural activities had ceased during the conflicts, there had been widespread destruction of farms and due to the mass exodus of the population those crops which had survived had been left untended (FAO, 1999: 1). The reduction in areas planted was down by 60% in some of the worst hit areas such as the Drenica valley and it was not possible to harvest many of the crops because of lack of manpower, machinery and fear of unexploded ordnance (*ibid*). In addition to this between 40 and 50% of all livestock was lost, sometimes deliberately killed by soldiers (*ibid*: 2). This meant that there was simply not enough food for the estimated 700,000 refugees who returned to Kosovo in July 1999 (*ibid*: 1)

In Bosnia prior to the war, the focus of the economy had been on military industries rather than agriculture, and most of the food had been imported. The war caused industrial production to plummet by 80% from 1992 to 1995, and unemployment to soar thereby leading to a decrease in standards of living (CIA, 1998: 1). At the age of 12 years, Halilbegovich described how she hadn't seen a piece of fruit for months because Sarajevo was under siege. This situation didn't change until her brother got a job as an interpreter for the United Nations and "the soldiers asked him if he wanted to be paid in food or money" (Halilbegovich, 2008: 45). He, of course, chose food. Halilbegovich also gives an account of how she and her friends swapped "war time recipes…created with a bare minimum of ingredients" (*ibid*: 20). The fate of those detained in prison camps across Bosnia was substantially worse in terms of restricted access to food, and there are

numerous accounts of prisoners suffering from starvation and severe malnutrition (Silber and Little, 1996: 250, ICTY, 2001a: 2; ICTY, 2001b: 2).

Landmines and other unexploded ordnance (UXOs) pose yet another threat to civilians during times of war and, in former war zones, for years after hostilities have ended. Over 80% of the 15,000 to 20,000 landmine victims each year are civilians and at least one in five of these are children according to the International Campaign to Ban Landmines (UNICEF, 2004a: 1). An estimated 85% of child victims of landmines die before reaching hospital and in many cases the injuries occur far from home without the parent's knowledge (*ibid*). Children are particularly vulnerable to this threat as they may be unaware that an area is potentially dangerous or inadvertently stray into a minefield whilst playing. They may also be too young to read warning signs and are naturally curious and so more inclined to pick up strange objects they encounter (Machel, 2001: 106). This is precisely what happened to Nikola Kokorus in Bosnia in 1993 when, aged three, he picked up what he thought was a brightly coloured toy. It turned out to be a detonator which exploded resulting in the loss of his right hand (UNICEF 2004b: 1). In 1998 it was reported that only one percent of an estimated 750,000 land mines planted in 30,000 mine fields in Bosnia-Herzegovina had been cleared since the war had ended two-and-a-half years ago (UNHCR, 1998: 1). Unexploded cluster bombs used by NATO during their air offensive contributed to over 100 deaths in Kosovo between June 1999 and April 2000 (Machel, 2001: 106). Commenting on this, John Flanagan, Programme Manager of the UN Mine Action Coordination Centre in Pristina said that "it is nearly always young people who get injured… we did not anticipate the number of them used and their attractiveness to kids" (*ibid*).

The wars in Bosnia-Herzegovina and Kosovo had a direct effect on the physical and mental health of children. They were often forced to leave their homes and to hide for long periods of time in states of extreme discomfort and anxiety. Their communities were broken apart and their normal daily routines including school attendance and play were massively disrupted. Some were injured or killed, and those who were not lived in fear of being killed. Many children had seen close family members wounded or murdered.

The short and long term effects on those children who survived these traumatic events have been shown to vary depending on the age, sex, personality and experience of the

individual child, as well as the level of physical and psychological support that they receive afterwards (Machel, 2001: 82; Barath, 2003: 155; Krippner and McIntyre, 2003:7). They may include development and concentration problems and excessive insecurity in younger children, or manifest as suicidal tendencies, anti-social behaviour and eating disorders in adolescents (Machel, 2001: 82). Added to this, where persecution of one ethnic group by another has occurred, as in Bosnia-Herzegovina and Kosovo, there are the continued problems of post-war conflict, hostilities and retribution attacks within the community (Ognjenovic *et al*, 2003: 171; Heleta, 2008: 4; Stover, 2007:93;OSCE, 1999b).

2.4 Present State of Knowledge Regarding Deliberate Acts of Violence Committed against Children

Information regarding atrocities against children during the conflicts is currently based on individual witness accounts, reports from Non Governmental Organisations (NGOs) and information contained in indictments against the alleged perpetrators of the crimes. To date, because the trials and exhumations are still in progress, there has been no comprehensive review of the forensic data that will give an accurate indication of the numbers of children involved, or that will support the witness statements.

In 1999 a comprehensive report on human rights violations in Kosovo between October 1998 and June 1999 was produced by the OSCE Kosovo Verification Mission (OSCE 1999a). It is based on the eye witness accounts of around 3000 people, predominantly refugees and is extremely detailed. It contains a chapter dealing specifically with children which includes sub-sections on “children as political objects”, “children as targets”, “other conflict related deaths of children”, “children held to ransom”, “children as human shields”, “torture and ill-treatment of children” and “the trauma of the conflicts child survivors” (OSCE 1999a: 208-215). The report includes accounts of children as young as two months old being shot, the decapitation of children (in one incident the child was only three years old), the hanging of a five year old boy, numerous accounts of children of all ages being tortured and threatened, and the rape of girls as young as 13 years. These atrocities were often carried out in front of parents who were then also killed, or left alive to suffer. Children were targeted individually and killed in mass executions such as those

which took place at Bela Crvka and Suva Reka (ICTY 2001c; OSCE 1999a: 642; Human Rights Watch, 2001: 375, 423).

Reasons for the killings were sometimes given and these included: preventing young boys growing up to become UCK (KLA) fighters (OSCE 1999a: 209), extorting money and other valuables from the family (*ibid*: 211), and warnings to NATO and Albanians in general that the Serbs were in charge (*ibid*: 209). An example of this appeared in the testament of an interviewee who had buried 74 bodies, mostly women and children, in Kolic / Koliq village, Prishtina:

> *"A five-year-old girl was killed in the school and a boy was executed there in front of his mother. Another woman was seen holding her two dead children (aged two and four) in her arms. A pregnant woman had her body cut open with her dead baby lying next to her. A two or three-year-old child had been impaled on a wooden stick next to the road. The following words were written on the stick: "This is Serbia. This is what we are going to do to all Albanians because I am God and NATO does not mean anything to me"* (OSCE 1999a: 209).

There are also reports of children being deliberately targeted in Bosnia-Herzegovina. Jose Maria Mendiluce, an official with the United Nations High Commissioner on Refugees (UNHCR) arrived in the east Bosnia town of Zvornik just as it was over run by the notorious Serb unit, The White Eagles. She reported the following:

> *"I saw kids put under the treads of tanks, placed under there by grown men, and then run over by other grown men. Everywhere people were shooting. The fighters were moving through the town systematically killing all the Muslims they could get their hands on. These people had a coherent strategy. The whole point was to inflict as much terror on the civilian population as possible, and to target as much of the violence as possible against women and kids. After the irregulars had done their work, the established authorities – the JNA or Karadzic's forces, or the local police would come in, ostensibly to restore order. But of course that would mean that the ethnic cleansing of that particular place had been successful and the White Eagles could move on"* (Mendiluce, in Kofman 1996: 93).

Kofman comments that "this seems to have been the scenario in dozens if not hundreds of Bosnian towns and villages" (*ibid*). This observation appears to be verified by an Amnesty International report which lists numerous accounts of deliberate and arbitrary killings (Amnesty International, 1992). These include the massacre of at least 83 Muslim men, women and children by uniformed Serbs, in the village of Zaklopača near Vlasenica, on 16 May 1992 (*ibid*: 30). Six women from the village who had witnessed the killings or found bodies afterwards stated that the surviving villagers had counted 105 dead and two wounded women. Amnesty International later received a list of 83 names with ages given ranging from two to 69 years (*ibid*).

Sells includes a number of accounts by different reporters of incidents in which children were either injured or killed. For example, following the second Sarajevo market massacre on August 28th 1995, a reporter witnessed a Bosnian child saying to her mother "mummy I've lost my hand" as her mother, who was also wounded, cried "where is my husband, I've lost my husband" (Sells 1998:142). In 1992 after the Serb army shelling of a Sarajevo suburb, another reporter described how he had found a young boy next to his dead mother repeating, "Do you love me mummy?"(*ibid*).

The ICTY indictment against Stanislav Galic summarised the situation in Sarajevo between 1992 and 1996 by stating:

> *"For forty four months, the Sarajevo Romanija Corps implemented a military strategy which used shelling and sniping to kill, maim, wound and terrorise the civilian inhabitants of Sarajevo. The shelling and sniping killed and wounded thousands of civilians of both sexes and all ages, including children and the elderly"* (ICTY, 1999: 1).

The initial indictment against Radovan Karadzic and Ratko Mladic goes into greater detail listing specific incidents where children aged between two and 16 years were killed by snipers at various locations including playgrounds and residential streets (ICTY 1995a). Halilbegovich gives a first-hand account of how she herself was seriously injured by a shell (Halilbegovich, 2008: 23) and how she heard of other children in the city who were killed (*ibid*: 65).

The scale of the atrocities is documented in a report received by Amnesty International from the main medical centre in Sarajevo on the 1st October 1992. They calculated that 14,364 people had died in the conflict between April and September 1992 and that 1,447 of these were children (Amnesty International, 1992: 8). Their information was provided by Muslim and Croatian sources and they believed that "the figure would be much higher when Serbian casualties were included" (*ibid*).

The fact that it was not just non-Serbian civilians who suffered during prolonged attacks on cities is an important point. During the siege of Gorazde, a primarily Muslim city in the east of Bosnia-Herzegovina, Serbian adults and children were injured and killed, together with their Muslim neighbours, by shells and snipers (Heleta, 2008: 95). Heleta describes how "the Serbian snipers often shot at anyone- women, children and old people" (*ibid*: 97). In addition to this the Serbs who were trapped in Gorazde were targeted by Muslims, some of whom they had previously lived in harmony with, as they were now regarded as the enemy (*ibid*: 77, 114).

Across Bosnia-Herzegovina there are abundant reports of men, women and children having been segregated and subsequently executed, imprisoned, raped and tortured (Hukanovic 1997; ICTY, 1995a, 2003; ICTY 2001c; ICTY 2001a; OSCE 1999a; Amnesty International, 1992). In the majority of these accounts, it was the men and teenage boys who were separated out for imprisonment or execution. From the reports, the minimum age of the boys seems consistent at between 12 and 15 years, although the aim seems to have been to remove any male old enough to fight. The largest and most extensively documented of these incidents was the fall of the 'safe haven' at Srebrenica on 11 July 1995 (see Section 2.1). It has been described, amongst other things as "the blackest moment in the history of the UN's involvement in Bosnia" (Malcolm 1996: 264) and "the biggest atrocity in Europe since the end of the Second World War" (Amnesty International 2005: 1). The bodies of the people murdered there were buried in mass graves around the region (See Chapter Six, Section 6.4) and the connection between the bodies in the mass graves and the 'Safe Haven' at Srebrenica was indicated by:

> *"Positive identification of individuals (from DNA, post mortem analysis and identification of unique personal belongings), identification documents of those listed as missing from Srebrenica, identity documents issued by the Srebrenica authorities, as well as strong connections to the United Nations "DutchBat" bases at Srebrenica. These included Dutch newspapers dated prior to July 1995, Dutch coins, military supplies and rations"* (Manning, 2003:21).

In common with other similar but smaller scale incidents in Kosovo and Bosnia-Herzegovina, the aim of the segregation appears to have been to exterminate the men of military age, although subsequent post-mortem examinations of the remains indicated that some of the victims could have been as young as 12 years of age (Manning, 2003: 21). Information collated from witness accounts provided a "partial list of at least 500 children who were summarily executed during Srebrenica Genocide and dumped into mass graves" (Srebrenica Genocide Blog, 2008). The use of the term "children" on the website conforms to the UN definition provided in section 2.2, i.e. less than 18 years (Walters, 2008: 1), but details are also provided of children aged 7 to 11 years who were recovered from the grave site at Zeleni Jadar, and a 5 year old from a mass grave near Vlasenica (Srebrenica Genocide Blog, 2008).

Teenage boys and men who were removed from their communities were not always killed straight away. Sells describes how the Bosnian and Croat armies in Banja Luka in October1995, selected out men and boys of 12 years or older and led them away to prison camps (Sells, 1998: 10). Details of this occurring in other areas such as Prijedor, Bosanski Samac, and Vlasenica are also recorded in indictments against Simic, Tadic and Zaric (ICTY 2002, 2002a), Nikolic (ICTY 1999a, 2003) Meakic, Gruban and Knezevic (ICTY, 2001b), and Sikirica, Dosen, Fustar, Kolundzija, Banovic, Banovic, and Knezevic (ICTY 2001a). Rezak Hukanovic, who was himself detained at the infamous Omarska prison camp in Bosnia (or "Death Camp" as he named it), describes in horrific detail the conditions which he and the other prisoners endured including torture which often resulted in death (Hukanovic 1997). Not all of the young detainees at the prison camps were male. The indictment against Dragan Nikolic cites the imprisonment of women at the Susica camp and specifically mentions the repeated rape of a girl aged 13 to 15 years old (ICTY 1999a, 2003).

In Kosovo, there are similar reports of segregation. Witnesses from Meja and other villages in the area near the Albanian border described how Serbian forces attacked them without warning, shelling and burning their houses. Police and paramilitary forces then rounded up the population of Meja close to the school and separated 100-150 men aged between 15 and 50 from the rest. The men were further separated into groups of about 20 and forced to say "long live Serbia" before being shot with machine guns then at close range through the head (OSCE 1999a: 12). There are detailed accounts of similar events occurring at Racak, Velika Krusa, Mali Krusa/Krushe e Mahde, and Krushe e Vogel, (Judah 1999, 193-4; ICTY 2001c). At other places, however, such as Bela Crkva, Crkolez, Suva Reka, Kacanik, Malisevo and Djakovica, no attempt was made to separate the women and young children from the men, and all were massacred together (ICTY 2001c; Roberts 1999a; OSCE 1999a; Human Rights Watch, 2001: 219).

In 1999 investigators for the BBC Panorama programme "The Killing of Kosovo" (BBC 1999) visited a number of locations in Kosovo where massacres were alleged to have taken place and recorded witness statements and in some cases physical evidence. They reported a number of incidents where men and boys had been targeted, and the minimum age at which they were taken seems to vary. In one particular incident in Djakovica survivors said that Serb forces separated men aged between 18 and 65 from their families and shot them by the roadside, whilst at Posto Selo it was reported that the Serb forces had been ordered to release only those males under the age of 13, and that the youngest boy to be killed was 14 (*ibid*).

In Kosovo, it is reported that in the period after 20 March 1999 children, particularly teenage boys, would sometimes be rounded up with men and taken into detention where they faced torture and ill-treatment. Some survivors from Smrekovnica Prison in Vucitrn, who were later interviewed as refugees, were found to be as young as 12 years old (OSCE 1999a: 211, 688). A particularly detailed report of life inside the Kosovska Mitrovica camp was given by a boy who had just turned 15 at the time of his arrest (*ibid*: 211).

In Kosovo it seems that individuals were targeted not just because they were male or of fighting age. Local people speak of executions of men, women and children because they came from locations that were well known KLA strong-holds, or because they had the same family names as known KLA fighters (OSCE, 1999a: 250; Berisha *pers comm*). A

full discussion of this follows in Chapters Three and Six, where an assessment is made of whether these witness and anecdotal accounts were supported by the forensic data analysed during the course of the research.

The OSCE-KVM report was heavily criticised by Johnstone for being biased in favour of the Kosovo Albanians (Johnstone, 2000). Whilst some of her criticisms with regard to terminology and the use of assumptions may be valid, unfortunately her denial of incidents which have been proven by forensic evidence and her overt bias towards the Serbian version of events, de-value her observations. The OSCE investigators do acknowledge that "the conflict also certainly had a traumatic effect on Kosovo Serb children" (OSCE 1999a: 213), but report that they were unable to include information on this as they had no access to Serbs inside Kosovo at the time the report was produced and there were almost no Serbs amongst the refugees interviewed *(ibid*). They do try to redress the balance in Part Two of their report which was written between mid June and mid October 1999 (OSCE 1999b), by discussing the plight of the other ethnic groups in Kosovo, particularly the Serbs and Roma who became the victims of retribution attacks once hostilities had officially ended (*ibid*: 3, 6). In Part One, they also reported acts of individual kindness by Serb soldiers:

> ***"****One 42-year-old wheelchair-bound Kosovo Albanian woman had remained in her house in Kozica/Kozhice (Srbica) in late March when Serb forces had shelled and then entered the village. She asked a young Serb soldier to bring back her mother and sister who had been taken to a yard with others. He did so, and also gave his name and asked about a woman who had been killed in mortar fire and "said his heart was aching as he heard that she had left three children behind". When paramilitaries seized their documents he returned them, and his men brought the woman in her wheelchair to the mosque where elderly and disabled people stayed for eight days. He arranged for two tractors to be brought to transport other wounded and disabled. The VJ brought food, water and medicine to the mosque where villagers were sheltering"* (OSCE, 1999a: 179)

There is also an account in the same report from a Serbian officer who expressed a profound desire to see his comrades prosecuted and brought to justice after he witnessed them massacring a group of women and children (Judah 2000b: 332).

Human Rights Watch acknowledges the bias in their data too, stating that they "did not randomly sample the interviewees" and that "on the contrary, researchers purposefully sought out those with knowledge of the most serious violations" (Human Rights Watch, 2001: 417). They also note that they concentrated on the municipalities which were most affected by the war (in their view) and only recorded violations which occurred between March 20th and June 12th 1999 (*ibid*). They do, however, report on specific acts of violence and killings perpetrated by the KLA, which took place in 1998, and they also make general reference to the widespread post-conflict criminal activities of the organisation which include murder on a large scale (*ibid*: 13).

It is not possible to correct any bias in the original collection of evidence or to compensate for the fact that the data relates only to exhumations and post-mortem examinations undertaken between 1996 and 2001. It must therefore be acknowledged that any such bias will inevitably be carried over into this research and the results must be interpreted in that context.

2.5 The Role of the Forensic Anthropologist in the Investigation of War Crimes

Forensic Anthropology may be described as the study of human remains within a legal context. The forensic anthropologist is essentially a specialist in skeletal anatomy and taphonomy, with knowledge of the judicial system and how he or she fits into it (Byers 2005: 2; Black, 2003: 187). Forensic anthropology is a relatively young discipline in the UK (Thompson, 2003: 183), compared to the United States where the pioneering work of Clyde Snow in the 1960s contributed to the development of the discipline as a specialised area of expertise (Joyce and Stover, 1991).

Forensic anthropology is assuming an ever more prominent position, not just in the UK but internationally, with regard to the investigation of individual suspicious deaths and mass fatality incidents which might include terrorist attacks, natural disasters, transportation and industrial accidents (Black, 2003: 188; Jensen, 2000:115; Burns, 2007: 270).

One of the major roles undertaken by the forensic anthropologist in any criminal investigations is to assist in determining the identity of the deceased where he or she is no

longer recognisable (Simmons and Haglund, 2005: 159). In war crimes investigations this remit may have to be undertaken on a large scale and the anthropologist may be required to deal with multiple fatalities from individual or mass burial contexts. The remains which the forensic anthropologist will be required to examine will frequently be skeletonised, partially decomposed, fragmented, burnt or commingled. In situations where there are multiple sets of remains that are incomplete, he or she will also be required to calculate the minimum numbers of individuals present as well as provide information regarding the biological profile of each individual (*ibid*; Byers, 2005). In the first instance the anthropologist will often be required to determine the species of fragmented and commingled remains, separating out non-human from human bone. The data required to create a biological profile which will assist in determining the identity of the deceased might include age at death, sex, ancestry, living stature, body-build, and skeletal and dental anomalies and pathology, including any recent or healed traumatic injuries (*ibid*). Often if the remains are in a particularly poor condition, if the body is incomplete, or if the deceased is represented by only a few fragments of bone, it will only be possible to provide the most basic information (Komar and Potter, 2007). The methods used to create a biological profile are reviewed in Chapter Four, Section 4.2.

In addition to the primary role of identification, the anthropologist may also be able to assist the pathologist in determining cause of death by reconstruction of fragmented remains, for example, where there have been gunshot wounds to the head and extensive fragmentation has occurred as the remains have become skeletonised, or where a body has have been burnt in an attempt to dispose of the evidence and hide the crime (Kimmerle and Barayber, 2008).

Together with the odontologist, the forensic anthropologist is often the 'front-line' in terms of identification of the deceased, although advances in DNA technology since 1997 now mean that his or her findings will more often than not be supplemented by biomolecular data (ICRC, 2009). DNA is not infallible, however, and anthropology is often required to corroborate results particularly in mass fatality incidents. This became evident during the early stages of the identification process following the terrorist attack on the World Trade Centre, when contamination of samples led to body parts being incorrectly assigned to individuals who already possessed the body parts in question (MacKinnon *pers comm.*; MacKinnon and Mundorff, 2007). In some instances where the

victim is unrecognisable and family members are unknown, or there are none surviving, anthropology must also be used to narrow down the parameters relating to the biological profile of the deceased. This information can then be utilised as a starting point to search for their true identity. In addition, it is sometimes the case that DNA may be difficult or impossible to extract due to degradation of the remains therefore identification must be determined using skeletal or dental indicators (Perlin, 2007).

The forensic anthropologist is required not only to undertake the examination of human remains but to present his or her findings in a formal statement or report and sometimes as evidence in court. In the United Kingdom, the qualification and training undertaken to become a forensic anthropologist is usually separate from that required to become a forensic archaeologist (Hunter, 2002: xxv). The situation in the United States, where the discipline has a much longer and well established history, is different. Practitioners in forensic anthropology are dual trained in archaeology and routinely act as recovery team leaders taking responsibility for all aspects of archaeological excavation as well as post-exhumation analysis of remains (*ibid*; Simmons and Haglund, 2005: 159; Burns 2007: 272; Heussner and Holland, 1999). Although in the UK not all practising forensic anthropologists are skilled in both disciplines, all should have a sound understanding of the taphonomic factors which affect the decomposition of the body and the appearance of bone, as these will influence greatly both the amount of information that is retrievable and the interpretation of results. For example, diagenetic colour change in bone can mimic the effects of burning, potentially leading to misinterpretations regarding the post-mortem treatment of remains and even cause of death (Nicholsen, 1993; Shahack-Gross et.al., 1997).

The forensic anthropologist may be employed by a university, a government or independent forensic service provider, or act as a self employed consultant. In the sphere of war crimes investigations he or she would most likely be working for national or international government agencies such as the Foreign and Commonwealth Office or the United Nations, or Non-Governmental Organisations (NGOs) such as Physicians for Human Rights (PHR) or the Centre for International Forensic Assistance (CIFA). He or she may be part of a multinational team such as the International Criminal Tribunal for Former Yugoslavia (ICTY) or the International Commission for Missing Persons (ICMP), or part of a national team such as the Argentine Forensic Anthropology Team (EAAF) or

the Disaster Mortuary Operational Response Team (DMort) which operates throughout the United States (Burns, 2007: 277). In many of the South American countries specialist teams have been set to up to deal with problems associated with identifying 'The Disappeared', victims of political murders who were targeted during dictatorships (Guimaraes 2003; Ferlini 2003).

The term 'War Crime' was first properly defined in 1949 in Article 147 of the Fourth Geneva Convention which relates to "the Protection of Civilian Persons in the Time of War" (ICRC, 2005; Kafala, 2003). Whilst it does have a strict legal definition, Clark maintains that "in terms of the scientific involvement, the same general principles apply to all deaths related to repression and conflict, whatever the subsequent charge" (Clark, 2005:363).

In her article on the development of human rights investigations since 1945, Ferlini gives a comprehensive overview of the role of the forensic anthropologist in the identification of victims of war crimes (Ferlini 2003). She cites the excavation and examination of the remains of thousands of people who were executed and buried in mass graves at Katyn during the second world war as being "one of the first examples of the utilisation of international experts in order to investigate a serious breach of human rights" (*ibid*: 222). Ferlini lists other examples of war crimes in which thousands and even millions of people lost their lives including the Nazi extermination of the Jews, Stalin's purges, crimes carried out in Ethiopia under the rule of Mengistu, 'Operation Condor' in which over 100,000 people were killed during the rule of General Pinochet, the 3,000 Argentinians killed in the 'Dirty War' from 1976 to 1978, the 1000s of Mayans killed in Guatamala in the 1980s, the murders in the 'Killing Fields' of Cambodia where an estimated 3 million people lost their lives at the hands of Pol Pot's Khmer Rouge regime, the genocide carried out against the Tutsis in Rwanda; and the atrocities committed in the Balkans during the 1990s which are the subject of this research (*ibid*).

Clark reviewed the use of scientific expertise in the investigation of war crimes, from the Nuremberg trials in 1945 until modern times (Clark, 2005). He refers to the work of Mant who was employed by the British War Crimes Group, the investigations conducted by the Argentinian, Guatemalan, Columbian, Venezuelan and Peruvian teams, and discusses the involvement of NGOs such as PHR in Rwanda and former Yugoslavia. He notes that in

one incident at Kibuye in Rwanda, over 450 people who had taken refuge in a church were massacred, and that using an on-site temporary mortuary, the forensic team were able to establish the age and sex of the individuals, over half of whom were under 18 years of age (Clark, 2005:364).

Steadman and Haglund (2005) undertook a comprehensive study into the scope of anthropological contributions in human rights investigations. In it they considered the numbers of anthropologists deployed in the period from 1990 to 1999, their nationalities, who they were employed by, their levels of education and qualifications, and the specific roles that they undertook. They identified that since 1990 the four largest organisations working in the field to investigate human rights atrocities (EAAF, FAFG, PHR and ICTY) had deployed "a minimum of 134 anthropologists and archaeologists of 22 different nationalities to 33 different countries" (Steadman and Haglund, 2005:7). They also noted that the increase in anthropological international involvement during the last half of the 1990's is "a direct result of the Balkans war and the establishment of the War Crimes Tribunal on forensic science" (*ibid*: 5). Steadman and Haglund found that duties included exhumations (the most frequent task that anthropologists were involved in), skeletal analysis, seminars and training, logistics and assessment of ante-mortem data. They also discuss some of the limitations of anthropological evidence, including the methodological problems associated with determining age at death, sex and stature, and indicate the need for further research to be conducted.

Forensic anthropologists have had varying degrees of involvement and success in war crimes investigations and almost always their work has multiple facets. The biological data obtained from their examinations might be used to assist in the identification of the deceased or for the purpose of providing additional information which might assist in the prosecution of an offender (which might also include determining the identity of the deceased). Whether the emphasis is placed on humanitarian concerns and repatriation of the victim so that families can begin the grieving process, or evidence retrieval for a criminal investigation, depends on the nature, scale, and duration of the investigation. Quite often the primary aim might start as one thing and end as another, as in Kosovo and Bosnia-Herzegovina where forensic anthropologists were initially employed by various organisations to produce information that could be used by the criminal tribunal in The

Hague, and subsequently became engaged in long term humanitarian projects to identify the deceased under the auspices of the ICMP.

It is important also to recognise the limitations of the discipline in certain circumstances, as highlighted by Komar who describes the problems encountered when dealing with the remains from one of the mass graves at Srebrenica (Komar, 2003). The victims appeared to be almost indistinguishable skeletally in that they were all male, of a similar age, and from the same ethnic background. The absence of any ante-mortem dental and medical records further compounded the problem. She questions the effectiveness and accuracy of the methods used by anthropologists to create a biological profile, particularly in the light of the errors that were observed in the ages assigned to the few that were eventually identified (Komar, 2003). These problems and the connotations for this research will be examined in more detail in section 4.2.

CHAPTER THREE

THE SITES

3.1 Selection of the Sites

The sites selected for this research were investigated by the International Criminal Tribunal for Former Yugoslavia (ICTY) and forensic teams working on their behalf between the dates of 1996 and 2001 (see Chapter 4, Section 4.1.2). The reports on the sites and the forensic evidence gathered there constitute primary records which are currently held by the Evidence Unit in the Office of the Prosecutor (OTP) for ICTY in The Hague.

Individual site records relating to this period were stored electronically within databases created by the OTP and Physicians for Human Rights (PHR), but these did not include records from all the sites investigated. Some of the site records and autopsy results had not been entered into the databases or had only been partially entered, so that the sites were listed but there was no information relating to the evidence (including bodies) recovered from them. It is also possible that some reports were not submitted to the OTP at all (Haglund *pers comm*.).

The electronic databases were made available for the purposes of this research in 2004, by Mr Graham Blewit (then Deputy Prosecutor) and Mr Ronald Turnbull (then Head of the Evidence Unit at the OTP) and his team. In addition to this, copies of electronic individual autopsy reports and summary reports were provided from chief archaeologists, anthropologists, pathologists, ICTY and *Gratis* team investigators, which added to the number of sites and associated data which could be utilised, (Baraybar, 1999; Burton *et al*, 2000; Canadian Forensic Team, 1999a, 1999b, 1999c; Clark, 1999, 2000a, 2001, 2001a; Adams, 1999; Haglund 1996a, 1996b, 1998; Wright, 1999, 2000, 2000a, 2001; Manning, 2003; ICTY 2001d, 2001e). It was also possible to create an additional electronic database from hard copies of British Forensic Team data, recorded in 1999 and 2000. How all these data-sets were combined and integrated is described in detail in Chapter Five.

In some cases where records relating to the sites were incomplete it was possible to supplement this with information from the ICTY website, which included individual indictments and site information linked to the maps in Sections 3.4 and 3.5 (ICTY, 2008b, 2008c). Further background information about the geographical location of sites in Kosovo and their recent history was derived from the Human Rights Watch report *Under Orders: War Crimes in Kosovo* (Human Rights Watch 2001)

There were some sites which had to be omitted from the integrated forensic database created to conduct this research. This was either because information relating to them was only available in a summary format and not as individual records, or because individual cases had been included, but details from their autopsy reports were not available.

Examples where site records had not been entered into any part of the PHR or OTP databases included Slap cemetery in Visegrad from which 132 bodies were excavated (Clark 2001a), Pasinac cemetery in Prijedor from which 56 bodies were recovered (Clark 2000a), and the Kevljani grave site in Prijedor where many of the 143 bodies and body parts excavated showed evidence of torture (Clark 1999).

Cases without autopsy reports included 811 bodies and body parts from Liplje (PHR database) and 99 bodies and body parts from Brnice Dam (*ibid*). This meant that whilst the numbers of bodies and body parts exhumed from the graves could be counted, no information could be obtained regarding the age at death, sex, or cause of death of the victims, therefore the data did not fulfil even the most basic criteria for inclusion in the research (see Chapter 5 Section 5.3).

Ultimately, the sites were selected because they constituted all the primary records which were made available by the Office of the Prosecutor which were in a useable format, or a format which could be made useable to achieve the aims of this research. They represent an as-yet unknown percentage of the total number of sites in Bosnia-Herzegovinaand Kosovo, because the exhumations have continued since 2001 and are still ongoing. It is believed, however, that they are of a sufficient number and size to constitute a valid sample from which meaningful conclusions can be drawn, and which may serve as a basis for further research in the future.

The total number of bodies or body parts finally included in the database for the purposes of this research was 6,384, of which 3,529 were from Kosovo and 2,855 were from Bosnia-Herzegovina. A more detailed examination of the sites from which they were recovered follows in Sections 3.4 and 3.5.

3.2 The Sites as a Representative Sample

It became clear during the early stages of the research that it would only be possible to examine a sample of the crime scenes and related forensic data, and that there were three key factors which limited which sites could be used. These factors were as follows:

1. The availability of data in a useable format
2. Inherent bias in the original data collection
3. The restricted time period within which the data was collected.

The availability of useable data has been referred to above and it will be discussed in greater detail in Chapter Five. It should be noted, however, that every effort was made by the ICTY staff in the Evidence Unit at the Office of the Prosecutor to facilitate requests for data in order to assist with the research.

With regard to inherent bias in the original evidence collection it should be stated from the outset that this is an insurmountable problem which cannot be rectified, but which must be taken into account when interpreting the results of data analysis. In this study, bias exists because the ICTY investigators and forensic teams had to make choices about where to focus their investigations and they had a limited amount of time within which to conduct them. After 2001 in Bosnia-Herzegovina and 2000 in Kosovo, although ICTY still had some involvement in the investigations, they handed over control of the exhumations to internal government agencies and evidence gathering for the purposes of the tribunal was greatly reduced. Thus the location of the sites is biased according to where the investigators chose to conduct excavations and, with the exception of the two death certificates from Sarajevo dated 1995, the data is restricted to that which was collected between 1996 and 2001.

In Kosovo, as can be seen from Figure 6, the sites where the alleged crimes and subsequent excavations took place were relatively evenly spread across the country. In Bosnia-Herzegovina, however, although investigations were conducted throughout the country as indicated in Figure 6, the majority of excavations which took place between 1996 and 2001 were undertaken in eastern Bosnia-Herzegovina in or around Srebrenica. There were some excavations in the Prijedor region of north-west Bosnia, for example, the cemetery at Pasinac (ICTY, 2000b) and the Kevljani grave site (Clark, 1999), however, only five records in the form of autopsy reports were available from Pasinac and there were no individual records from Kevljani as discussed in section 3.1. Primary mass grave sites where there had been post-burial disturbance and removal of remains have been identified in other parts of Bosnia-Herzegonia, e.g. at Tasovcici in the South-West, and elsewhere in Former Yugoslavia, e.g. at Bijelo Polje in Montenegro, and at Zaklopaca in Serbia (Skinner *et al*, 2002).

Even amongst the mass grave sites of eastern Bosnia those excavated represent only a sample of the total number, as evidenced in the testimony of Dean Manning, Lead Investigator for Team Six. In the ICTY court transcripts dated Thursday, 5th February, 2004, Manning stated that he knew of 43 mass grave sites in total, that 23 of those had been exhumed by ICTY and that the remainder had been handed over to the Bosnian Commission for Missing Persons (ICTY, 2004: 7145). Further research would be required in order to determine whether the grave sites not included in this research (those which were excavated after the departure of ICTY and those which, as yet, are undiscovered) are located solely in the east and the northwest of the country, or whether sites relating to the war crimes exist in different regions.

The limited time period within which the investigations were conducted inadvertently introduced a further element of bias into the data. As the investigators were concerned primarily with responding to the allegations of genocide in Bosnia-Herzegovina, and the mass expulsions and execution of Kosovo Albanian citizens in Kosovo, the forensic data relates almost entirely to crimes perpetrated against non-Serbian populations in both countries. It is certainly true in Kosovo that there were executions of Serbian police officers and Albanian 'collaborators' by the KLA prior to the NATO bombing campaign (Judah, 2000a: 137, 2000b: 319), and there are numerous reports of Kosovo Albanian civilians killing Serbian and Roma civilians in retribution attacks after the war (Kimmerle

and Baraybar, 2008: 205; Human Rights Watch, 2001: 13). This data was not included in the databases or autopsy reports received. This might be because the earlier incidents did not form part of the ICTY investigations, i.e. they were investigated internally, or many of the crimes occurred after the period relating to this research. It is evident from the ICTY website that indictments relating to the murders of Serbian and Albanian citizens by the KLA were issued by the Tribunal and convictions against former KLA commanders and officials were secured (ICTY 2004b; ICTY, 2010b). In Bosnia-Herzegovina there were serious organised crimes including imprisonment and murder committed against Serbian citizens (ICTY 1998; Heleta, 2008: 69), but there is very little in the literature to suggest that these were undertaken in such a systematic manner and on such a massive scale as those perpetrated against the Bosniaks.

It is clear that a potentially large number of sites are missing from this dataset, therefore if the results of this research are to be interpreted correctly and they are to be used for predictive modelling in the future, it is necessary to consider whether the sites selected are representative of others across Bosnia-Herzegovina and Kosovo yet to be excavated or reported. Without examining the new burial data there is a limited degree to which this can be established. It should certainly be possible however to identify significant patterns within the sample set available and to draw conclusions which can be tested in the future.

3.3 Place Names

When referring to the municipalities in Kosovo, the Serbian name is given first followed by the Albanian one. The individual sites and villages are referred to by their Serbian name unless they have been recorded in one of the forensic databases only in Albanian, in which case, both names are given. It is important to recognise these distinctions not just for cultural and political reasons but for practical purposes during the research, i.e. a village or a municipality could potentially be referred to by two different names, when it is in fact the same place. The place names in Bosnia-Herzegovina are given in Serbo-Croat, a broad term for the languages spoken in Bosnia which include Bosnian, Croatian and Serbian.

This system was chosen not because of any political bias, but because it is compatible with that used by ICTY, and indeed most NGOs and mainstream authors (OSCE, 1999;

Human Rights Watch, 2001; Judah 2000a, 2000b, Malcolm, 1996). The names of the sites appeared in the formats described above in the OTP and PHR databases, and in the English language version of the ICTY website and maps (ICTY, 2008b, 2008c). The maps can also be converted to Albanian, Serbo-Croat, Macedonian and French

3.4 Sites in Kosovo

Kosovo is divided into 29 municipalities which, with the exception of Gora, all have the same name as the main town (OSCE, 1999: 6, 19). The map of Kosovo below (Figure 6) shows the municipalities where there were "crimes alleged or proven by the Tribunal", indicated by red dots (ICTY, 2008b). The website stipulates that it is only an "introductory tool" and that "it is not an official document" (*ibid*). That said, it constitutes a good graphic summary of the sites which were investigated and there is a strong correlation between the municipalities named on it, and those which appear in the forensic data.

In addition to those municipalities named on the map there were a further eight recorded in the databases and site reports from The Hague, where excavations had yielded bodies. These are included in Table 3 which lists the towns and villages in Kosovo where excavations were conducted.

Figure 6: Map showing sites investigated by ICTY in Kosovo (ICTY, 2008b)

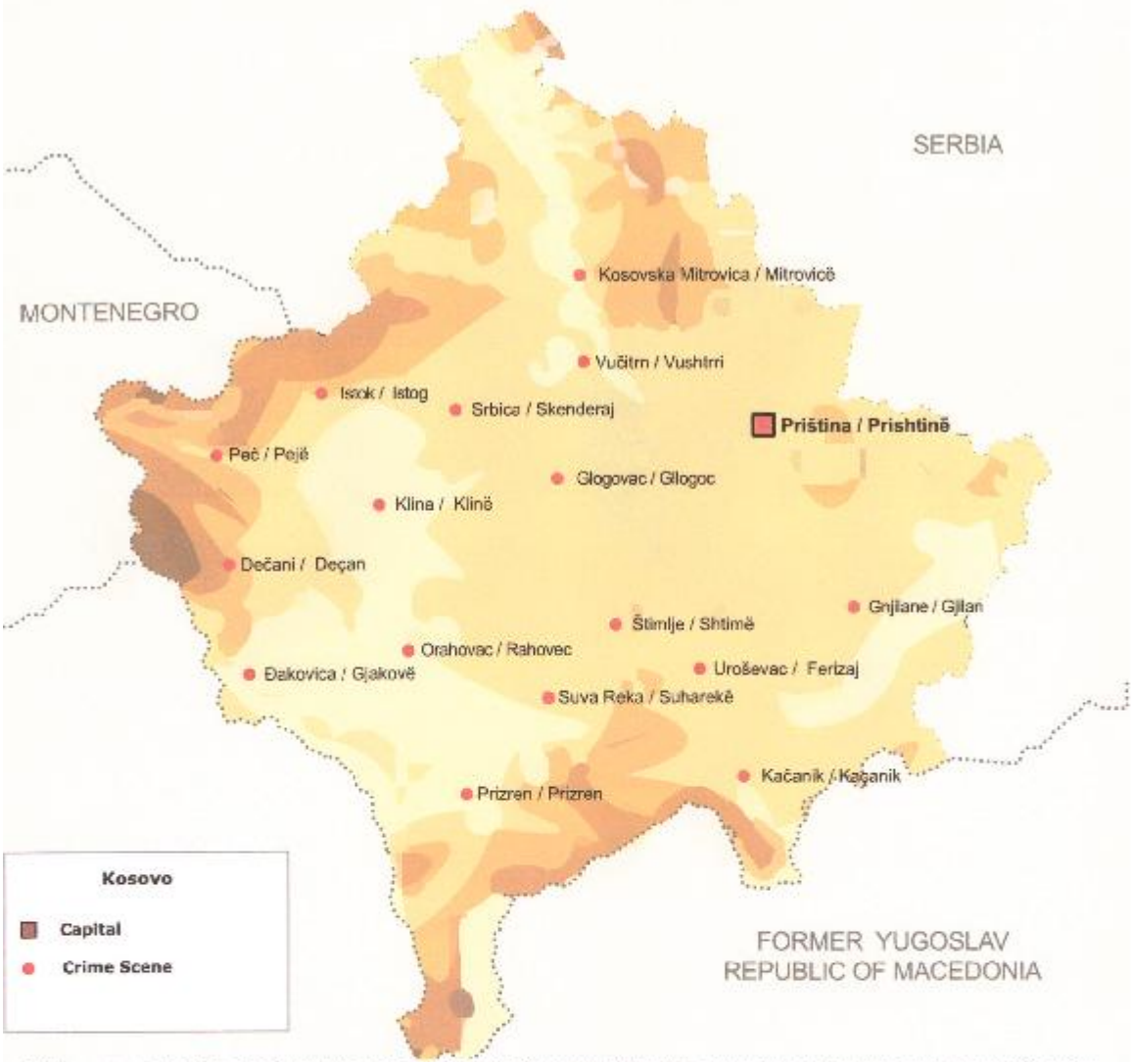


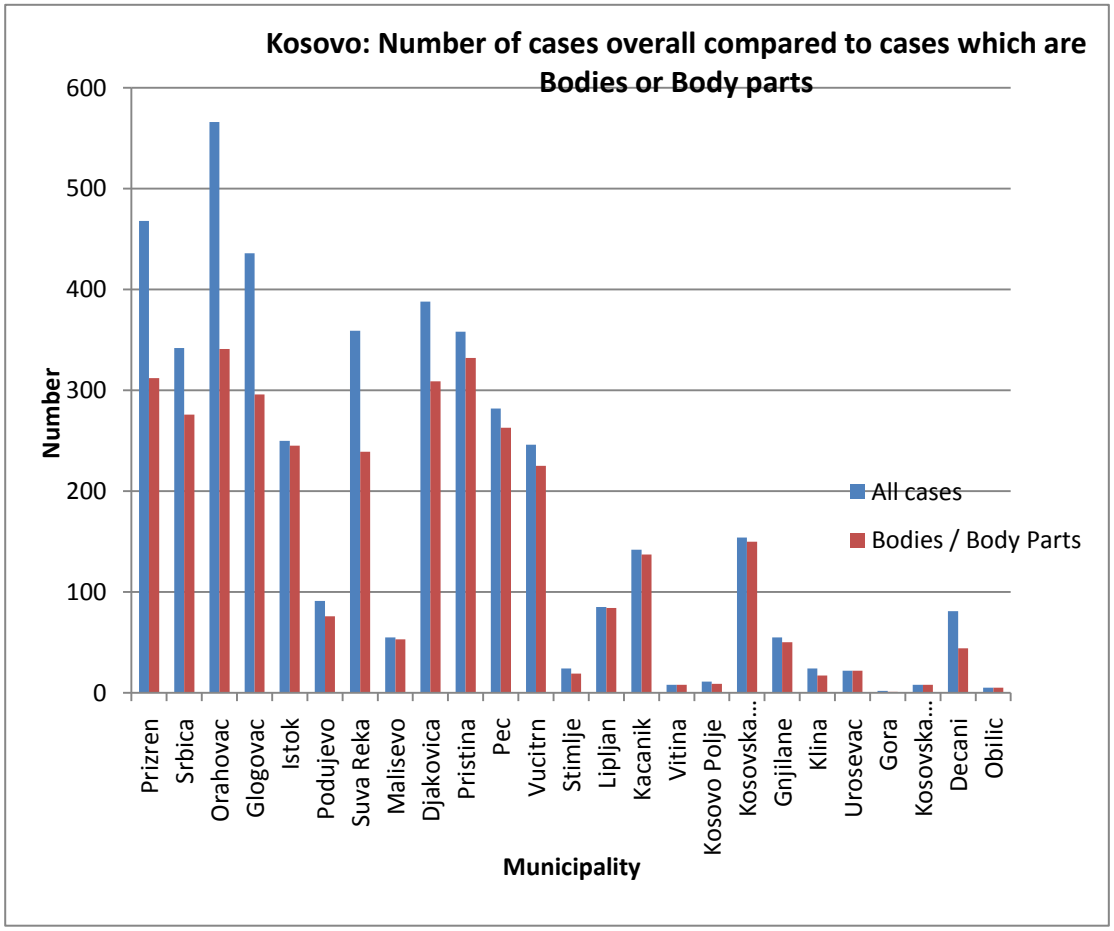
Table 3: Kosovo Grave Sites Investigated by ICTY (information derived from integrated forensic database)

Municipality	Sites where Graves were Excavated
Prizren / Prizren	Vlasnje/Trepetnica, Dusanovo, Prizren, Gorozup, Miljaj, Landovica, Brodosavce, Vrbnica, Plajnik, Buzek, Korisa, Karasindered, Mamusa, Novake, Randubrava, Brezna, Planeja, Sredska
Srbica / Skenderaj	Cirez, Brocna, Marina, Rezala, Poljance, Turicevac, Srbica, Rudnik, Gornja Klina, Vocnjak, Radisevo, Kladernica, Krusevac, Makrmalj
Orahovac / Rahovec	Celina / Celine, Orahovac, Pusto Celo, Donja Potocan, Velika Krusa, Opterusa, Nogavac, Bela Cerka, Mrasor, Janciste, Brestovac, Krushe e Madhe, Ostrzub, Pagarusha, Mala Kruse / Krushe e Vogel
Glogovac / Gllogoc	Novo Citakovo, Banjica, Donji Zabelj, Negrovce, Staro Citakovo, Stutica, Poklek, Donja Koretica, Vasiljevo, Lapusnik, Banjica, Gornje Obrinje, Dobrosevac, Nekovce, Orlate, Krivovo, Glogovac, Gladno Selo, Trstenik, Verbotze
Istok / Istog	Istok, Crnce, Dobrusa, Malo Dubovo, Studenica, Vrelo, Ljubozda, Prigoda, Kalicane, Crkolez, Kasica, Tomance, Rakos, Starodvorane, Suvo Grlo, Begov Lukavac, Banja, Ljubovo, Veric, Dubrava, Burim
Podujevo / Podujeve	Podujevo, Popova, Rakos, Mirovac, Batlava, Burince, Bradas, Duz, Obrandza, Donje Ljupce, Velika Reka, Stedium, Donja Pakastica, Revuce, Donja Dubnica, Dumnice
Suva Reka / Suhareke	Suva Reka, Belanica, Dulje, Samodraza, Studencane, Blace, Luznica, Siroko, Recane, Budakovo, Donja Krusica, Trnje, Lesane, Geljance, Sopina, Rastane, Grejkovce, Neprebiste, Vranic
Malisevo / Maliseve	Malisevo, Caralluka, Banje, Golubovac, Jancist, Domanek, Pllotice,
Djakovica / Gjakove	Djakovica, Bistrazin, Mazrek, Korenica, Guska, Sisman, Meja, Bardonic, Bardosan, Kraljane, Goden, Bec, Ramoc, Zabelj, Rogovo, Duznje, Babaj Boks, Damjane, Pacaj, Erec, Zdrelo, Dobros, Netic, Vogovo, Zid Sadih Aga, Hereq Martyr
Pristina / Prishtine	Pristina, Susica, Kolic, Kacikol, Makovac, Grastica, Gracanica, Badovac, Suteska, Mramor, Saskovac, Businje
Pec / Peje	Jablanica, Nepolje, Fusha e Pejes, Pec, Blagaje, Novo Selo, Labljane, Lodja, Ljutoglava, Ljesane, Nabrdje, Plavljane, Zlopek, Cuska, Ruhot, Kosuric, Dubocak, Rasic, Brolic, Radavac, Trebovic, Dubovo, Zahac

Vucitrn / Vushtrn	Vucitrn, Resnik, Brusnik, Donja Sudimjla, Gornja Sudimjla, Nevoljane, Nedakovac, Pestovo, Zilivoda, Bivoljak, Slakovce, Pasoma, Becic, Dubovac
Stimlje / Shtime	Stimlje, Topilo, Luzak, Crnoljevo, Rance
Lipljan / Lipjan	Veliko Ribare, Trbovce, Slovinje, Mali Alas, Malo Ribare, Donja Gusterica, Mirena, Banjica
Kacanik / Kacanik	Kacanik, Dubrava, Banjica, Gabrica, Doganovic, Stari Kacanik, Djeneral Jankovic, Slatina, Stagovo, Kotlina
Vitina / Viti	Vitina, Smira, Djelekare
Kosovo Polje / Fushe Kosove	Kosovo Polje, Vragolija
Kosovska Mitrovica / Mitrovice	Gusavac, Mitrovica, Kosovska Mitrovica, Donji Suvi Do, Vaganica, Vidomiric
Gnjilane / Gjilan	Vrbica, Gnjilane, Velekince, Malisevo, Surlane, Lovce, Vlastica, Zegra, Kervasari
Klina / Kline	Klina, Dobri Dol, Duricic, Volujak, Svrhe, Resnik
Urosevac / Ferizaj	Urosevac, Pojatiste, Kosare, Sojevo, Staro Selo
Gora / Dragash	Buce, Brod
Kosovska Kamenica / Kamenice	Donja Sipasnica
Decani / Decan	Dasinovac, Drenovac, Pobrdje, Broliq, Donji Ratis, Junik, Locane, Dubovik, Papracane, Babaloc,
Obilic / Obiliq	Ade
Unknown	Gurbadhe, Terdovc

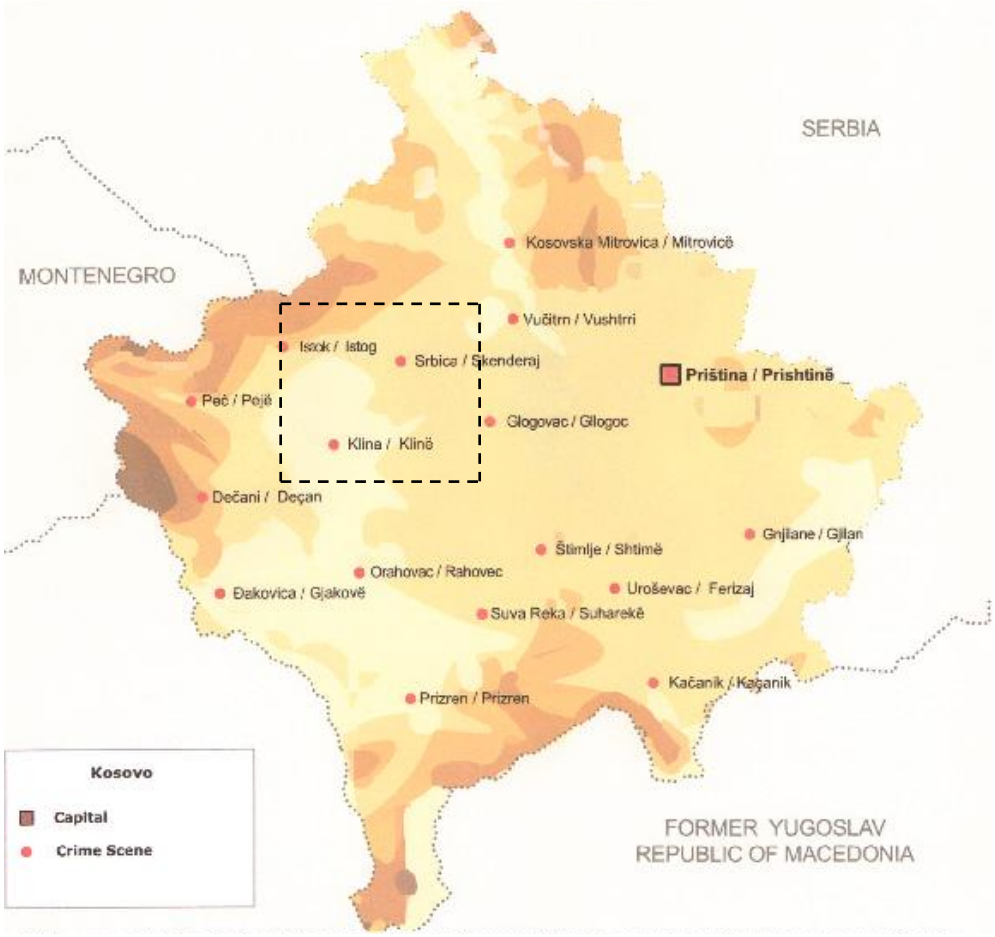
Although it can be seen from Figure 6 that the sites are relatively evenly spread across the municipalities in Kosovo, there are differences in the numbers of villages within them where incidents took place and in the numbers of bodies retrieved. This is illustrated in Figure 7 which shows the numbers of cases relating to each municipality. A case could comprise any type of evidence, e.g. a bullet or a ligature, an identity card or a body. The graph compares the total number of cases recorded to the number of cases which were actually body parts.

Figure 7: Municipalities in Kosovo included in the integrated forensic database, showing total numbers of cases at each site, and those which are bodies or body parts



The graph above demonstrates that a large proportion of the bodies were recovered from the southern, south western and central regions of the country. Some of these areas, particularly those around the Drenica valley in the centre of Kosovo, were known as KLA strongholds (Human Rights Watch, 2001: 155). Figure 8 shows the approximate location of the Drenica Valley, indicated by the square drawn in dotted lines.

Figure 8: Approximate Location of the Drenica Valley, Kosovo (ICTY, 2008b, with annotation from Judah, 2000a)



Prior to 1998 Glogovac and Srbica had an almost entirely Albanian population, and it was here that the KLA first began armed operations in 1996 (*ibid*). By 1997 the Kosovo Albanians were referring to it as "liberated territory" because of the KLA presence, whilst the government considered it to be a "hotbed of Albanian terrorism" (*ibid*). The Orahovac municipality was also tense and violent both before and during the NATO campaign, and in 1998 the KLA briefly captured Orahovac town (Human Rights Watch, 2001: 281). According to Human Rights Watch mass killings and forced expulsions were common in Orahovac, Suva Reka and Djakovica "where many villages had long supported the insurgency" (*ibid*, 2001: 4).

Table 4 compares the municipalities which had the greatest number of executions reported to Human Rights Watch (2001: 245), with the numbers of bodies actually recovered by the forensic teams and recorded in the forensic database. The forensic data does appear to broadly support the interpretation that KLA strongholds were primary targets, but it also reveals that there were other areas such as Pristina, Prizren, Istok and Pec, which suffered almost as much as, or more greatly than, some of the regions identified by Human Rights Watch. The reasons for this are considered in more detail in Chapter Six, Section 6.4. and Chapter Seven, Section 7.1.

Table 4: Comparison of number of executions reported to Human Rights Watch and actual bodies or body parts recovered.

Municipality	**Executions Reported to HRW "top municipalities of reported extrajudicial executions" (2001:245)**	**Number of bodies or body parts recorded in forensic database**
Djakovica	645	**309**
Orahovac	583	**341**
Srbica	431	**276**
Glogovac	368	**296**
Suva Reka	248	**239**
Pristina	No numeric data, listed as 12th most badly affected municipality	**332**
Prizren	No numeric data, listed as 8th most badly affected municipality	**312**
Istok	No numeric data, listed as 10th most badly affected municipality	**245**
Pec	No numeric data, listed as 6th most badly affected municipality	**271**
Vucitrn	No numeric data, listed as 9th most badly affected municipality	**225**

With regard to Prizren there appears to be a discrepancy between the Human Rights Watch information and the actual forensic evidence. Although the forensic data showed

Prizren yielded the third highest number of bodies (n= 312), behind Orahovac and Pristina, the Human Rights Watch report claimed that:

> *"The "ethnic cleansing" of Prizren was carried out with a lesser degree of violence and fewer wanton attacks than in many other parts of Kosovo. Thus, Jamie Shea, NATO spokesman during the air strikes, was either exaggerating or misinformed when he stated on May 17 1999 that Prizren was the city that "has probably suffered the most over the last months in the whole of Kosovo"* (Human Rights Watch, 2001: 338).

The forensic and anecdotal evidence of killings and forced expulsions appear to support Mr Shea's claim rather than the Human Rights Watch interpretation of events. OSCE too reported that from December 1998 to March 1999 "the situation (in Prizren) remained tense and volatile as in most of the rest of Kosovo" (OSCE, 1999a: 584). In addition to this they stated that they had investigated a large number of abductions, reports of missing persons, and murders, some of which were killings by the KLA (*ibid*).

With the exception of Pristina, there appear to have been fewer non-judicial executions in the north and north eastern municipalities, perhaps because of their proximity to the Serbian border. The figures from Pristina (n=332 bodies or body parts) are higher than in all other areas except Orahovac. As with Prizren this is not reflected in the Human Rights Watch data which listed it as only 12th in terms of numbers of extra-judicial executions. In fact, Human Rights Watch stated that "Pristina was spared the large scale killing that occurred to the west in Drenica during the spring of 1999" (2001: 118). Clearly the forensic evidence does not support this, although proportionally this number of deaths might be less significant than in other less densely populated areas.

Amongst those victims who had been identified there were a number of family names which appeared more frequently than others and who shared their family names with leading figures in the KLA. These victims included some very young children. It is equally true, however that the family names of some of the most prominent members of the KLA were represented only sparsley or not at all amongst the identified victims. Further analysis of the forensic data may help to establish these links more clearly.

Negative evidence of KLA associations, either in relation to family names or locations, would seem to indicate that the mass killings and expulsions cannot be explained in such simplistic terms as the Serbian authorities attempting to rid Kosovo of perceived and actual terrorists. It is certainly clear from the OSCE report and other literature that other groups of individuals such as doctors, university professors, and Albanian politicians were deliberately targeted as well as known members of the KLA and their extended families (OSCE, 1999: 250; Judah, 2000a: 244). It is also likely that the extreme ethnic cleansing witnessed in municipalities such as Pec (Human Rights Watch, 2001:298; Judah, *ibid*) had more to do with historical-cultural reasons than terrorist related activity. In the light of this, the suggestion offered by Human Rights Watch that "Whilst the government campaign seems to have been an attempt to crush the KLA it clearly developed into something else once the NATO bombing began" (2001: 4), seems quite plausible. That is, what was initially a response to escalating discontent and violence amongst certain sectors of the Albanian population was somehow turned into an opportunity to rid Kosovo of all ethnic Albanians in line with the Serbian nationalist agenda (Judah, 2000a: 48; LeBor, 2003: 120; Glenny, 1999: 625).

3.5 Sites in Bosnia and Herzegovina

Figure 9 shows the locations where alleged or proven crimes were investigated by ICTY, indicated by red coloured dots (ICTY, 2008c). The approximate locations of the actual burial sites where ICTY undertook exhumations have been superimposed onto the original map and are represented by blue stars. Only the major cities are labelled on the map but the individual towns and villages where serious crimes were investigated are listed in Table 5. This information was derived from the web-link to Figure 9 (*ibid*), not the integrated forensic database. Data relating to only a small number of the locations listed in Table 5 were included in the integrated forensic database (see Section 3.2 and Chapter Four, Section 4.1 for reasons why). Those grave sites are listed in Table 6.

Figure 9: Map showing sites investigated by ICTY in Bosnia-Herzegovina (ICTY, 2008c)

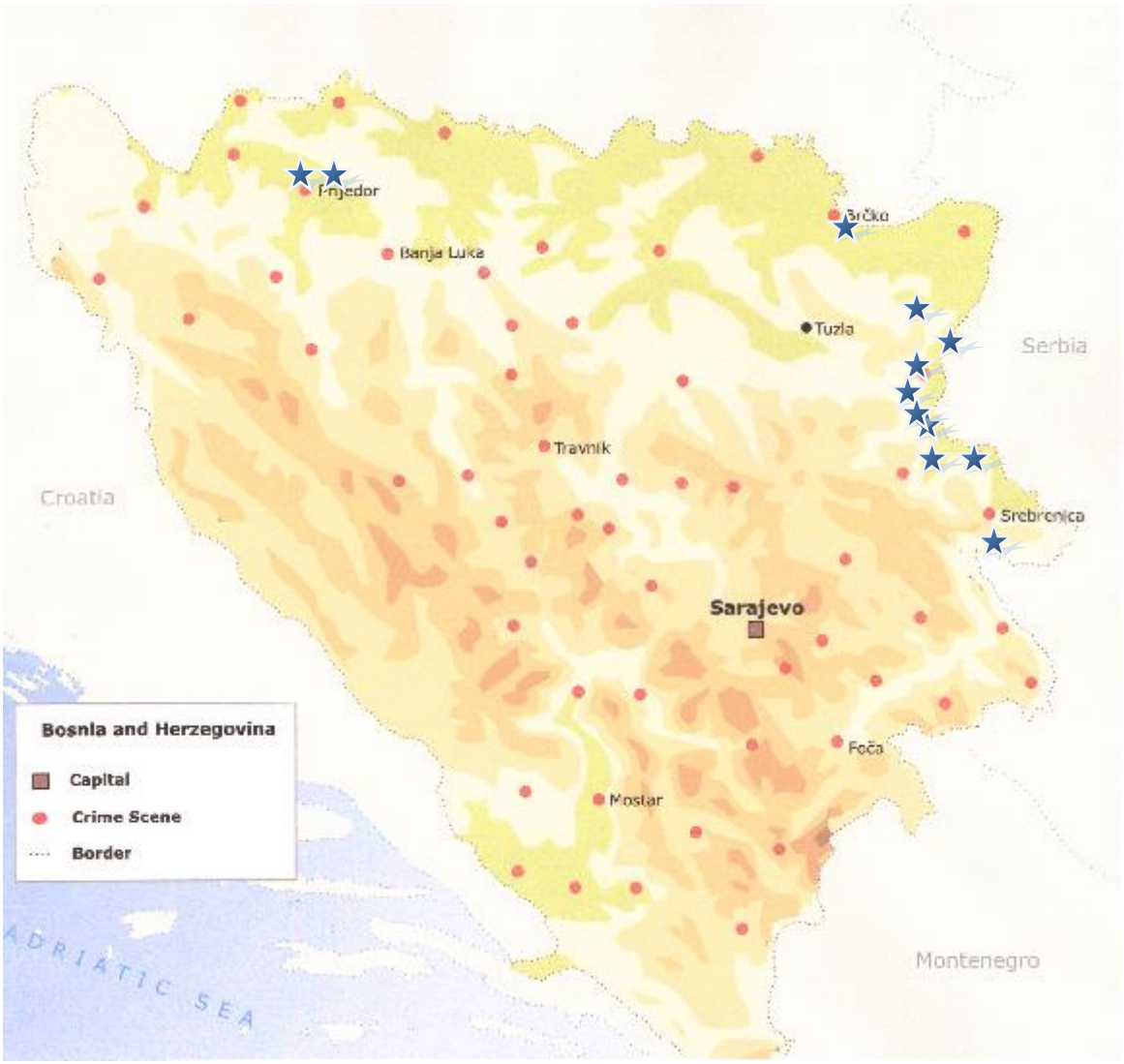


Table 5: Sites shown in Figure 9, with summary details of alleged or proven crimes which took place there (ICTY, 2008b).

*Data from those locations with an asterisk are included in the integrated forensic database

Location of Crime Scene	Region of Bosnia	Alleged or Proven Crimes
Travnik	Central	Fighting, executions and kidnapping, all ethnic groups
Zavidovici	Central	Beatings, torture and killings of Serb civilians
Skender Vakuf	Central	Mass executions on Mount Vlasic
Vares	Central	Detentions, killings and sexual assaults
Konjic	Central	Detention, mass execution, imprisonment and rape for a period of years
Jablanica	Central	Detention, killings and abuse. Croats and Bosnians
Prozor	Central	Muslim casualties caused by Croat attacks, detention camps, forced labour and sexual assault. Croats killed by Muslims in retribution
Vitez	Central	Detention camps, killings and beatings of Muslims by Croats
***Sarajevo**	Central	3 year siege, shelling and sniping, thousands killed and wounded
Kiseljack	Central	Detention, killings and rape of Muslims by Croats
Kotor Varos	Central	Shellings, beatings, rapes, executions of non-Serbs
***Srebrenica**	East	Detentions and physical abuse. Genocide, around 8000 Bosniak men and boys believed to have been killed.
Bratunak	East	Expulsions, killings, rapes, mass executions. Serbs and Muslims
***Visegrad**	East	Multiple mass executions, including women, children and elderly people
Rogatica	East	Detentions, killings, mass execution, rapes, beatings
Gorazde	East	Beseiged, fighting, snipers and shelling
Pale	East	Shelling, detentions, beatings
Rudo	East	Detentions and beatings
Cajnice	East	Detention centres including Mostina Hunting Lodge where a massacre took place

Sokolac	East	Detention camps, killings and mass executions, beatings
Bosanski Samac	North	Detention camps, executions, beatings , physical and sexual abuse
Doboj	North	30 detention centres including Spreca Prison, beatings and killings
Celinac	North	Detentions and killings
Brko	Northeast	Detention camps, including Luka Prison Camp, killings, beatings, torture
Bijeljina	Northeast	Campaign of killing and terror, detention camps such as Batkovic
Zvornik	Northeast	Multiple detention centres and mass executions, e.g. Pilica, Karakaj, Celopek, beatings and sexual abuse
Vlasenica	Northeast	Detention centre, Susica camp, mass executions, rape
***Prijedor**	Northwest	Omarska, Keraterm and Trnopolje detention camps: physical and sexual abuse including rapes, executions
Banja Luka	Northwest	Mass detentions including Manjaca camp, physical and sexual abuse, executions
Prnjavor	Northwest	Forcible evictions, detentions and beatings
Teslic	Northwest	Detentions, beatings, killings, rape
Bosanski Gradiska	Northwest	Detentions, expulsions, beatings and killings
Kakanje	Northwest	Fighting between Muslims and Croats, detention of Muslims by Croats, and Serbs by Muslims, beatings and abuse
Prnjavor	Northwest	Mass expulsions detentions and beatings
Bosanski Dubica	Northwest	Detentions, beatings and killings
Bosanski Novi	Northwest	Large detention camps, beatings, killings, mass expulsions
Bihac	Northwest	Expulsions, detention camps, killings
Trnovo	Southeast	Beseiged, detentions
Foca	Southeast	Detention camps e.g. “KP Dom”, multiple imprisonments and rape in private houses, beatings and killings
Kalinovik	Southeast	Detention camps, killings, rapes
Gacko	Southeast	Detentions, beatings, sexual abuse, killings

Nevesinje	Southeast	Detention, mass execution, imprisonment and rape for a period of years
Bileca	Southeast	Detention camps, beatings and torture resulting in deaths
Mostar	Southwest	Siege, shelling, sniping, arrests and killings
Stolac	Southwest	Mass expulsion of Muslims by Croats, detentions and beatings
Capljina	Southwest	Detention camps, inhumane treatment and killings of Muslims and Serbs by Croats
Ljubuski	Southwest	Prison and labour camps for Muslims, run by Croats
Siroki Brijeg	Southwest	Prison and labour camps for Muslims, run by Croats. Beatings and torture

It can be seen from Table 6 that crimes including murder, beatings, sexual assaults, imprisonment in detention camps and mass executions, were committed across the entire country. It was, however, the northern and eastern regions which housed some of the most notorious prison camps and witnessed the largest, most systematic mass executions.

The execution and grave sites in Bosnia-Herzegovina were not necessarily close to the homes of the victims, as large numbers of people were systematically rounded up from the places where they lived or had been hiding, and taken to detention centres where they were imprisoned. They were then either executed at the detention centres or transported to alternative execution sites where they were killed and buried in large mass graves, which had been dug using heavy machinery (ICTY 1995b: 3, 6; Wright 2001). This *modus operandi* is described in the ICTY indictment against Mladic and Karadzic:

> *"(21) Many of the Muslims who surrendered to Bosnian Serb military personnel were not killed at the location of their surrender, but instead were transported to central assembly points where Bosnian Serb soldiers held them under armed guard. These assembly points included, among others, a hangar in Bratunac; soccer fields in Kasaba, Konjevic Polje, Kravica, and Vlasenica; a meadow behind the bus station in Sandici and other fields and meadows along the Bratunac-Milici road."* (ICTY, 1995b: 3).

> *"(49) Thousands of Bosnian Muslim men who fled Srebrenica and who surrendered or had been captured were transported from various assembly locations in and around Srebrenica to a main assembly point at a school complex near Karakaj. (50) On or about 14 July 1995, Bosnian Serb military personnel, under the command and control of Ratko Mladic and Radovan Karadzic, transported thousands of Muslim men from this school complex to two locations a short distance away. At these locations, Bosnian Serb soldiers, with the knowledge of Ratko Mladic, summarily executed these Bosnian Muslim detainees and buried them in mass graves"* (ICTY, 1995b: 6).

These accounts are corroborated by Gojko Beric, a Bosnian Serb journalist who chronicled the events during the war (Lovrenovic, 2002: 11).

> *"During this time the executioners' volleys were heard all around. The mass murder of Bosniaks in Potocari, Konjevic Polje, Kravica, Glogova and elsewhere lasted a full five days. Thousands of women and children, whom Mladic's soldiers had already brutally separated from their sons, husbands, fathers and brothers, were deported in packed cattle trucks and rickety buses to Tuzla. Among the men who were taken away were a large number of boys. All of them.....were driven off to nearby killing fields where they were systematically exterminated and buried in mass graves"* (Beric, 2002: 82)

Table 6, below, lists the grave sites which it was possible to include in the integrated forensic database. As discussed in section 3.1, the exhumations were concentrated largely in the east of the country and the complete records for the graves which were excavated in the north were not available. Information used to compile the table was taken from the integrated forensic database, supplemented by the following reports: Manning 2003; Clark, 2001; Haglund, 1998; Wright 1999, 2001, and ICTY 2001d.

Table 6: Summary of Grave-Sites in Bosnia-Herzegovina Excavated by ICTY between 1996 and 2001

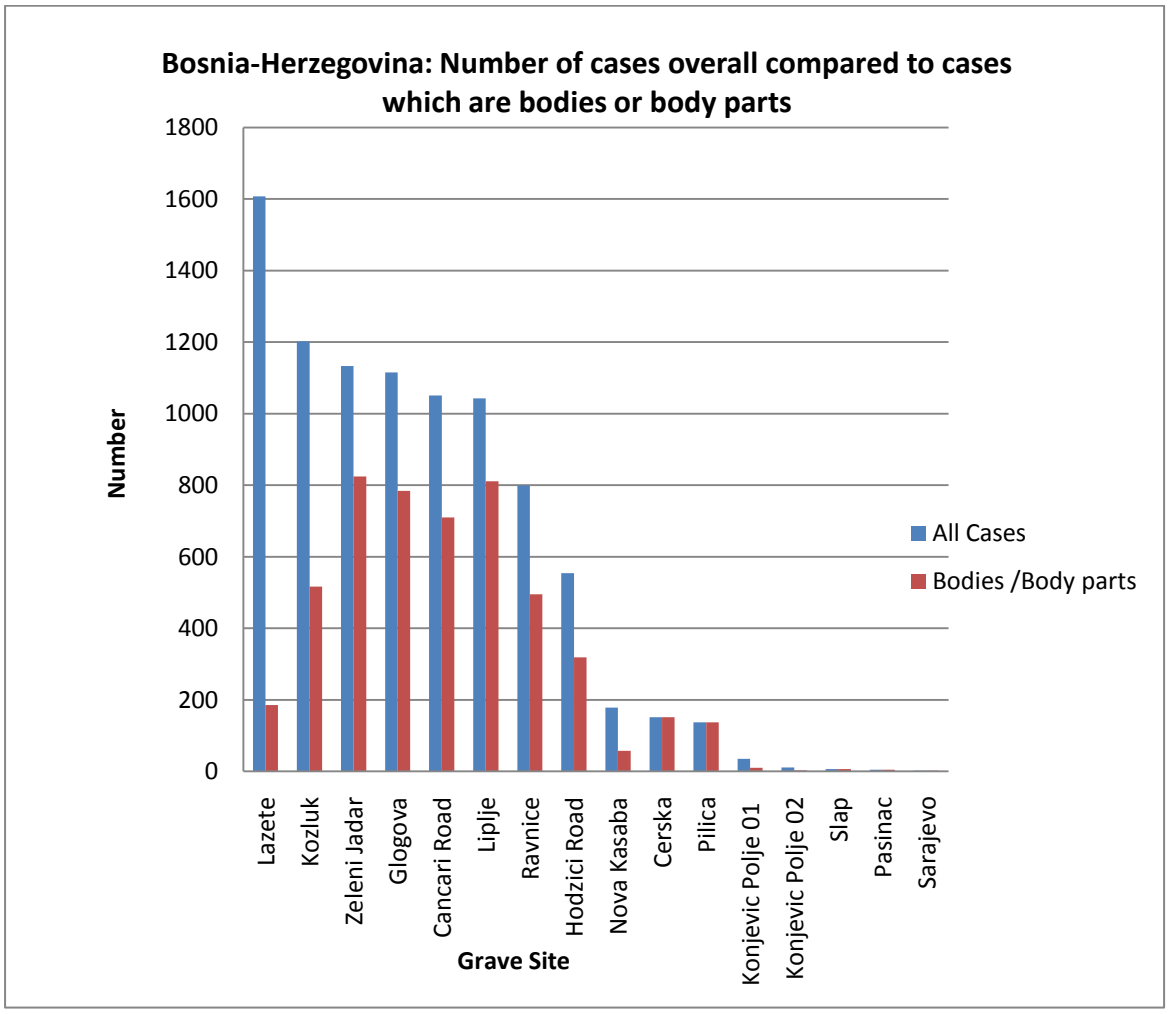
Grave Site	Type and Location	Execution Site
Cerska	Undisturbed primary mass grave	Cerska
Nova Kasaba	Undisturbed primary mass grave	Nova Kasaba
Konjevic Polje 1 and 2	Undisturbed primary mass grave	Unknown
Pilica (also known as Branjevo military farm)	Disturbed primary mass grave	Branjevo military farm / Pilica Dom
Lazete 1 and 2 (also known as Orahovac)	Disturbed primary mass grave	Lazete. Detained at Grbavci school prior to execution
Kozluk	Disturbed primary mass grave	Kozluk
Glogova 1 – 9	Disturbed primary mass grave	Kravica Warehouse
Brnice Dam	Disturbed primary mass grave	Brnice Dam
Cancari Road 3	Secondary mass grave. Bodies derived from Kozluk	Kozluk
Cancari Road 12	Secondary mass grave. Bodies derived from Branjevo military farm	Branjevo military farm / Pilica Dom
Hodzici Road 3, 4 and 5	Secondary mass grave. Bodies derived from Lazete 2	Lazete. Detained at Grbavci school prior to execution
Liplje 1 and 2	Secondary mass grave. Possibly linked to Hodzici Road	Brnice Dam
Zeleni Jadar 5 and 6	Secondary mass grave. Bodies derived from Glogova 1 and 2	Kravica Warehouse

Ravnice 1 and 2	Undisturbed primary deposition site close to Glogova. Bodies unburied	Unknown
Pasinac	Formal cemetery with individual graves, Prijedor	Prijedor region, some victims from prison camps
Slap	Formal cemetery with individual graves, nr Visegrad	Visegrad
Sarajevo	Sarajevo State Hospital	Sarajevo

The "Type and Location" column in Table 6 demonstrates that some of the relationships between the graves were quite complex and many could be identified as related primary and secondary burial sites. In some cases it was possible to link the graves to specific execution sites by archaeological and anthropological examinations and analysis of soils and pollen – this is discussed in more detail in Chapter Six. In addition to this, graves sites which had been completely robbed were identified. For example, at Potocari, north of Srebrenica, a backfilled hole measuring approximately 8 m square and 2 m deep, was located (Wright, 2000a). No body parts were identified in the hole, but it had all the characteristics of a mass grave including a backfill which contained mixed in lumps of putrid blue-green clay (*ibid*: 16).

Figure 10, illustrates the number of cases from each site and compares the total number of cases (which include all evidence types, e.g. ballistic evidence, personal effects, or bodies) with those cases which are just bodies or body parts.

Figure 10: Sites included in the integrated forensic database, showing total numbers of cases at each site, and those which are bodies or body parts



The graph above reveals something about the nature of the sites. For example, Lazete showed a large number of cases (most of which were ballistic evidence) in comparison to bodies and body parts. This supports the interpretation that the offenders had exhumed a proportion of the bodies from this primary grave and moved them to a secondary grave (in this case at Hodzici Road), in an attempt to hide the evidence of their crimes. The large number of shell cases at the site also provided an indication that the victims were executed at the grave site rather than at an alternative location. Conversely Liplje and Zeleni Jadar, which were secondary graves, showed a much higher ratio of body parts to all types of cases. Caution must be exercised when making these inferences based on the relative numbers of artefacts and bodies / body parts alone, however, as some of the data is not truly representative. This applies to those sites such as Cerska, an undisturbed

primary mass grave, where a record of all the individuals exhumed was available for entry into the database, but a full record of all the associated evidence was not.

The sites for which there are few records were derived from individual autopsy reports. It is difficult to determine the number of body parts from the graph due to the scale which was required for the larger sites, but only six, five and two records were available for Slap, Pasinac, and Sarajevo, respectively. All of these records were bodies or body parts.

To conclude this preliminary discussion on sites, it should be re-iterated that it was not possible to include all the data from Bosnia-Herzegovina and Kosovo in the final database. With regard to Bosnia, even though a good sample of the graves from Srebrenica are represented there were significant numbers, including many from the large complexes at Cancari and Hodzici Road, that had not been excavated prior to ICTY transferring responsibility to the International and the Bosnian Commissions for Missing Persons. It will still be possible, however, to identify any trends in the available forensic data, particularly with regard to child involvement, and to make valid comparisons between the sites in Bosnia-Herzegovina and those in Kosovo.

The numbers of children affected at each site in Kosovo and Bosnia-Herzegovina, and a closer examination of the location and nature of each site can be found in Chapter Six, Section 6.4.

CHAPTER FOUR

COLLECTION AND EXAMINATION OF EVIDENCE IN THE FIELD

4.1 Methodology Relating to the Exhumations and Data Collection

4.1.1 Terminology

Although the term "excavation" is occasionally used in some of the specialist reports (Wright 2001), recovery of the bodies of the victims from the graves is more commonly referred to as "exhumation" (ICTY 2000b; OTP, 2004; Haglund 2002). The degree to which archaeological excavation techniques were employed during the exhumations in Kosovo and Bosnia-Herzegovina is discussed below.

Prior to discussing exhumation methodologies and the variation in grave types it is helpful to clarify the term 'Mass Grave'. There is no universally accepted single definition, although several have been proposed which specify a range of criteria including the number of individuals present, the way in which the bodies are organised and the degree of contact between them (Haglund, 2002; 244; Jessee and Skinner, 2005). For the purposes of this research, the term has been interpreted simply as a grave which contains multiple individuals. A distinction has not been made based on whether the individuals were touching or commingled as this research is concerned primarily with the demographics of the deceased and their cause of death, rather than the unique taphonomic characteristics associated with this type of burial environment (Haglund, 2002). It is, however, acknowledged that there is a crucial difference in terms of the respect afforded to those dead who were buried side by side in neat rows and those who were thrown into graves haphazardly on top of each other and, when discussing individual grave sites, reference is made to details concerning the numbers of individuals within each grave and how they were positioned within it.

4.1.2 Background and Collection of Data

In Kosovo, the exhumation of remains for the specific purpose of presenting forensic evidence to the Office of the Prosecutor (OTP) in The Hague, was conducted in 1999 and

2000. These exhumations were undertaken by employees of ICTY or NGOs and *Gratis* teams working on their behalf. The NGOs included Physicians for Human Rights (PHR), and the *Gratis* teams comprised forensic teams of different nationalities such as the British, Spanish, German and Finnish Forensic Teams who were funded by their own governments (Rainio *et al* 2001; British Forensic Team 1999; 2000, ICTY 2000a). In 2000 the International Commission on Missing Persons (ICMP), created in 1996 at the behest of President Clinton, formally established its forensic programme (Huffine *et al* 2001). In 2002, the Office on Missing Persons and Forensics (OMPF) was formed which took direct responsibility for the exhumation and, together with ICMP, identification of the deceased (UNMIK, 2004; 2005). Since then they have recovered the remains of over 3,800 missing persons (Bureau of Democracy, Human Rights and Labor, 2009) and their work is currently continuing under the auspices of the European Union Rule of Law Mission (EULEX) who superseded the United Nations Interim Administration Mission in Kosovo (UNMIK) in 2008 when Kosovo declared her independence from Serbia (*ibid*). As well as continuing to exhume and examine the remains of victims in Kosovo, the OMPF and ICMP initiated the process of excavating and returning Kosovan remains from Serbia (UNMIK, 2005; ICMP, 2004b; IWPR, 2003).

In Bosnia-Herzegovina, ICTY directed and conducted the excavation of war graves and the examination of remains from 1996 until 2000 (ICTY, 2000b; Wright, 2001). During this time the Tribunal were assisted by a number of NGOs and private contractors including PHR, and the Argentine Forensic Anthropology Team (EAAF, 1998). In 2000, the ICTY team at "Ravnice 2" were assisted by members of the Bosnian Commission for Missing Persons and the ICMP (ICTY, 2001d), and on the January 1st, 2001, the Office of the High Representative transferred responsibility for coordination of the inter-entity exhumation process in Bosnia-Herzegovina to the ICMP (Huffine, *et al* 2001). The ICMP continued with their work until 2008 when they handed over control to the newly launched Missing Persons Institute (MPI). The MPI had originally been founded in 2000 but it was unable to operate prior to 2008 because of disagreements between the three separate ethnic commissions within it (Alic, 2008).

The exhumations carried out in Kosovo and Bosnia-Herzegovina since 2000 have been primarily for humanitarian purposes, focusing on the identification and repatriation of the deceased (UNMIK, 2004; Krasniqi, 2009; ICMP, 2008). However, evidence from the

mass grave sites at Glogova, Ravnice and Zeleni Jadar in Bosnia-Herzegovina, excavated by PHR in 2001, was submitted to the OTP. ICTY have also been involved in exhumations since 2000, where the burials could be linked to specific indictments, particularly where new evidence has come to light (ICTY, 2002). The exhumations of victims believed to have been murdered by the KLA or Serb forces continued in Kosovo after 2000 under the auspices of the OMPF and UNMIK (Kimmerle and Baraybar, 2008:205). With the exception of two death certificates from Sarjevo dated 1995 (Vuletic, 1995; Kasumagic, 1995), the exhumations referred to in this research concern only those carried out under the direction of ICTY between 1996 and 2000 as these are the sources from which the forensic data used in the analysis was derived.

4.1.3 Identification of Sites

In both Kosovo and Bosnia, the primary means of identifying the location of burial sites between 1996 and 2000 was by intelligence (ICTY, 2008a; Manning, 2003). Teams of ICTY investigators gathered eye-witness statements and they also received and acted upon reports from organisations such as Human Rights Watch and the Organisation for Security and Communication in Europe (*ibid*, Human Rights Watch, 2001; OSCE, 1999a).

Where archaeological techniques were used to locate graves, it tended to be after their presence had already been established or indicated by intelligence and witness information. For example, in 2000 an area within Dragadon cemetery (a legitimate Kosovo Albanian cemetery just outside Pristina, Kosovo) was identified by a witness as a clandestine burial site. The topsoil in the area was removed by machine under archaeological supervision and a grave cut became visible which could then be more clearly defined and excavated by spade and trowel (British Forensic Team, 2000). This proved to be a mass grave which contained 28 bodies piled on top of each other, some of whom were wearing hospital name-bands (*ibid*). This added credence to the witness account which had stated that the victims were murdered whilst they lay in their hospital beds (*ibid*; Roberts, 2000).

A similar approach to grave location was used by the PHR-ICTY team in Bosnia-Herzegovina, for example, at Cerska mass grave site. There, acting on intelligence

information, a number of trial trenches were dug using machinery. The back-hoe was then used to remove the overburden of soil where required, and the grave cuts which had been uncovered were defined by trowel and excavated using standard archaeological techniques (Haglund, 1998).

Aerial survey and photography was undertaken in both Bosnia-Herzegovina and Kosovo between 1995 and 2000 as a means of locating graves, often in response to witness information (ICTY, 2001e, Wright 2001; Brown, 2006; Manning 2003, BBC News, 1995, CNN, 1999). Prior to this, U.S. planes had actually identified primary mass graves in the Srebrenica region as the massacres and burials were taking place (Kimmerle and Baraybar, 2008:102). The use of aerial photographs also assisted in establishing the dates when a number of the graves had been dug and sometimes subsequently disturbed (Wright, 2001)

Since 2000 the work of searching for mass graves has continued, and additional methods such as the use of satellite imagery, vegetation and soils analysis, and geophysical survey (in particular, resistivity) have been employed to locate more graves (Skinner 2005; Kampschror, 2005; International Herald Tribune, 2005)

4.1.4 Types of Grave and Deposition Sites Investigated

Numerous types of grave and body deposition sites were encountered by the forensic teams working in Kosovo and Bosnia-Herzegovina. In Kosovo many were individual graves, usually (but not always) found in groups or lines side by side (OTP, 2004; Roberts, 1999a; Panhuysen, 1999; British Forensic Team, 2000; Canadian Forensic Team, 1999a, 1999b, 1999c). Some of these graves were in formal cemeteries and a good many of them had actually been dug by family and friends who had recovered their loved ones from various execution sites only to request that they be exhumed at a later date by the investigation teams so that their evidence could be presented to the Office of the Prosecutor (*ibid*). A number of small mass graves, such as the one in Dragadon cemetery described above, and that at Sisman in Djakovica (OTP, 2004) were identified in Kosovo but these were infrequent and do not appear to have occurred on the same scale as in Bosnia-Herzegovina (*ibid*).

In Kosovo, Human Rights Watch documented attempts to hide or dispose of bodies in Trnje, Djakovica, Izbica, Rezala, Velika Krusa, Mala Krusa, Suva Reka, Slovinje, Poklek, Kotlina and Pusto Selo (Human Rights Watch, 2001:7; 121). They also reported the alleged mass incineration of between 1,200 and 1,500 bodies at the Trepca mining complex, and the transportation of bodies to Serbia where they were dumped in the River Danube or buried (*ibid*). Some of these reports have since been corroborated (ICMP, 2004b). Sites where human remains had been left scattered on the ground surface, lying on hillsides or sometimes in burnt out houses, were frequently found in Kosovo, particularly in the Drenica Valley and Orahovac (OTP, 2004; Human Rights Watch, 2001: 49). In Srbica, and Djakovica, human remains were found in wells (Roberts 2002; ICTY, 2008b; Landesman, 1999), and at one of these locations there was evidence that women had been raped prior to being drowned and dumped in a well (OTP, 2004).

In Bosnia-Herzegovina there were many more large mass graves which had been dug by the perpetrators prior to and immediately following the execution of large numbers of Bosniak men and boys (Haglund, 1998; Wright. 2001; Skinner, *et al* 2002). The mass graves identified were both primary and secondary, as extensive efforts had been made to conceal the murders. Around Srebrenica and other parts of north-eastern Bosnia, there were numerous examples of primary graves, including those at Glogova, Kozluk, Lazete, and Pilica, from which bodies and body parts had been removed prior to the ICTY investigations (Wright 2001; ICTY, 2001e). Other mass graves in the region were identified as secondary burial sites and it was possible to link some of them to primary sites and execution points by the analysis of pollen, soil, ballistics and other forensic evidence types (Brown 2006; ICTY, 2001e). The links between these mass graves and execution points were summarised in Chapter Three and are discussed in more detail in Chapter Six.

A large number of unburied bodies were recovered from Bosnia-Herzegovina. In July 1996, the Finnish Expert Team recovered the remains of 30 victims from "cleared paths and other areas" (ICTY, 2001d: 17) in the Kravica area, and examined the remains of approximately 250 individuals collected by local authorities from the same area (*ibid*). In November 1997, PHR, assisted by representatives of the Bosnian Muslim Federation Commission for Missing Persons conducted "surface exhumations" (*ibid*) in the areas of Kravica, Nova Kasaba, Konjevic Polje and Lolici, and recovered a total of 73 individuals

from paths, path intersections, destroyed or abandoned villages and isolated sites away from paths (*ibid*). In 2000 and 2001, Teams from ICTY and the Bosnian Commission for Missing Persons recovered and examined 175 bodies and 324 body parts from a site at Ravnice, just a few kilometres away from Glogova (Clark, 2001: 6). The bodies had been dumped down the side of a steep wooded embankment, some had been partially covered by soil, and they had subsequently become dispersed over a wide area (*ibid*). In addition to these surface depositions there are reports of multiple individuals having been executed and thrown into caves in Bosnia-Herzegovina (Simmons, 2002; Hawton, 2006). ICMP conducted exhumations at one such site in the Hrgar region and found that it contained approximately 70 individuals (Simmons, 2002).

Bodies were excavated from individual graves in formal cemeteries as well as mass graves in Bosnia-Herzegovina. For example, Pasinac, which contained victims from the Prijedor region including Keraterm Prison, and Slap where the bodies were alleged to be those of people who were killed in or around Visegrad in 1992 (Clark 2000a; 2001a). The data relating to those killed in besieged towns and cities such as Mostar, Sarajevo and Gorazde was not available for inclusion in the research, but it is likely that their bodies were buried within formal cemeteries like those from Visegrad and Prijedor.

A full discussion of the different grave types in both Kosovo and Bosnia-Herzegovina can be found in Chapter Six, Section 6. 4

4.1.5 Exhumation and Recovery of Evidence

Standard approaches to the excavation and collection of forensic evidence from single and mass graves have been documented extensively (Hunter, 1997; Haglund 2002; Skinner 1987; Schmitt, 2002, Tuller and Duric, 2006; JPAC, 2005). In reality, the methods adopted to excavate the graves in Kosovo and Bosnia-Herzegovina were governed by the resources available, the training and experience of the individual teams conducting the work, the nature of the grave and the burials within it, and the cultural background and expectations of the local population.

Standard Operating Procedures (SOPs) for the exhumation, surveying and recording of mass graves around Srebrenica were outlined by PHR and ICTY teams in their specialist

reports for the Office of the Prosecutor (Wright, 2000a; 2001; Haglund 1996b; 1998). These provide information about pre-excavation survey, excavation methodology, photographing, mapping and logging the remains, as well as how to deal with fragmented and commingled bodies, and other evidence types (*ibid*). The approaches used at all sites were broadly similar and included the following stages:

1. De-mining and establishment of crime scene and security cordons
2. Reconnaissance of the area believed to contain the grave, either field survey or aerial and field survey
3. Mapping and recording of the grave and any surface evidence prior to excavation using a Total Station, grid system, global positioning system (GPS), or a combination of these techniques
4. Pre-excavation photography of the site, the area believed to be the grave and surface evidence, production of photographic log
5. Metal detection over top of grave to maximise recovery of evidence (this was not employed at all sites), recovery and logging of surface evidence in accordance with normal crime scene procedures (see Section 4.1.6)
6. Probing, trial trenching and visual examination to establish the parameters of the grave
7. Clearance of surface vegetation and removal of spoil and topsoil. This was done using hand tools such as shovels and picks where the grave was perceived to be shallow or there appeared to be little soil covering the burials, and by machine (backhoe) where the over-burden was deeper
8. Exposure and definition of bodies for exhumation by "pedestalling" them using trowels, brushes and "sharpened chopsticks" (Haglund, 1998: 11)
9. Mapping of remains and evidence *in situ* using Total Station. Minimum datum points recorded for whole bodies were cranium, hips and feet
10. Photography of bodies, body parts and evidence *in situ*
11. Completion of exhumation forms for whole or partially complete bodies, assignation of numbers to all bodies and body parts
12. Removal of disassociated body parts, clothing and evidence by lifting separately, bagging and labelling in accordance with normal crime scene procedures
13. Lifting body and associated clothing, wrapping in body sheet and placing in labelled body bag for transfer to mortuary

14. Inspection of soil underlying burial and establishing that bottom of grave had been reached.

In addition to this, soil and environmental samples were taken and an examination of the stratigraphy, and any machine, tool or footwear marks in the graves was made in order to establish whether the graves were primary or secondary, disturbed or undisturbed (Wright, 2000a; 2001; Haglund 1996b; 1998).

No such detailed written protocols for exhumations in Kosovo in 1999 and 2000 could be found and the level of documentation relating to excavation and recording techniques appears to have been heavily dependent upon individual expertise, particularly between and within the *Gratis* Teams. Forensic archaeologists were not employed within the British Forensic Team and anthropologists were responsible for overseeing exhumations at scenes. If the anthropologist happened to be dual trained as an archaeologist, then the recording and interpretation of the burial context was generally more thorough than if they had no archaeological training. That said, in both countries, the level of archaeological intervention required and undertaken was heavily dependent on the complexity of the scene, and the large multi-phase primary and secondary mass graves encountered in Bosnia-Herzegovina undoubtedly required more skilled archaeological expertise and interpretation than did the single graves of victims in Kosovo, a large number of whom had been buried by members of their own family.

In Kosovo many of the exhumations were conducted by local villagers (at their own insistence), under the supervision of the forensic teams who would take over the procedure once the remains had actually been reached. Whilst on a technical level because of the simplicity of the graves and the circumstances surrounding their construction this presented no problems, it did introduce a series of different challenges. Particularly during the early months when memories were still fresh and emotions raw, a sometimes shocking level of involvement from family members was observed. Wives, mothers and children would sit at the side of the grave as the body was being exhumed and on more than one occasion family members were witnessed jumping into graves so that they could touch and kiss the decomposing remains within it. The requirement for the international forensic teams to respect these cultural differences and the needs of the grieving families had to be carefully balanced with ensuring that the integrity of the evidence was maintained to a

standard which would be acceptable to the International Criminal Tribunal. This was not always easy and it was achieved largely because of the skill and experience of the individual Senior Investigating Officer in charge of each scene.

In addition to the recovery of bodies and body parts, an important aspect of the exhumation process was the recovery of associated evidence including clothing, personal effects and other forensic evidence such as ballistics, blindfolds and ligatures. The clothing of the deceased formed an integral part of the identification process, and in Kosovo, magazines were produced for the local populations which combined anthropological data with photographs and details of clothing and personal effects (see Figure 11). In both Kosovo and Bosnia–Herzegovina, defects in the clothing were also examined in conjunction with injuries to the skeleton in decomposed remains, in order to assist in determining cause of death.

Fig 11: Example of magazine matching clothing and personal effects with anthropological data, compiled for local population in vicinity of temporary mortuary at Suva Reka (British Forensic Team, 1999)

4.1.6 Integrity and Continuity of Evidence

The ability to demonstrate the integrity of evidence from initial recovery through to presentation in court is vital for the success of any criminal case (Weston, 2002). At all the sites in Kosovo and Bosnia-Herzegovina investigated by, or on behalf of, the ICTY, Scenes of Crime Officers (SOCOs) were present to record and number bodies, body parts and associated evidence in order to maintain chain of custody. All these items (referred to as exhibits) were photographed and logged at the scene, and scene and mortuary reports were completed for each case. Included in the reports were details of what each exhibit was, where it was recovered from and who had possession of it at any given time. This is standard procedure for any criminal investigation, and is designed to prove that at no point could the evidence have been tampered with (*ibid*).

Transportation of the bodies and other evidence from the scenes to the mortuaries is also an important aspect of the chain of custody. In Kosovo this was undertaken in military vehicles with the assistance of the protection force governing the area from which they had been removed, e.g. members of the German army would assist with the transportation of bodies within the German sector. The bodies and other evidence would also be accompanied by a member of the civil police force who had attended the scene so that he or she could hand over the evidence at the mortuary. In Bosnia-Herzegovina, after exhumation each body was put into a 'chiller-van' to prevent further deterioration of the tissues" (Wright 2001: 14). The bodies were then transported to the mortuary for examination (*ibid*) and whilst the protocols do not make specific mention of the fact that they were accompanied by a Scenes of Crime Officer, it is assumed that this was the case in order to meet the standards required by the Criminal Tribunal.

4.2 Methodology Relating to the Determination of Age at Death, Sex and Stature in Decomposed, Skeletonised, Fragmented, Burnt and Incomplete Remains

The primary anthropological criteria used to establish biological identity were age at death, sex and, to a lesser extent, stature. In a population group such as this, it is virtually impossible to distinguish between the different ethnic groups by anthropological means. Therefore although an assessment of ancestry was made during the post-mortem

examinations, conclusions relating to this parameter were based on witness and other information provided by ICTY.

As one of the primary aims of this research was to examine any differences in the demographic profiles of the victims of war crimes in Kosovo and Bosnia-Herzegovina, it was necessary to examine the accuracy of the methods used by the forensic teams to determine their age at death and sex, and specifically to understand how they reached their decision to classify an individual as adult or juvenile, male or female.

4.2.1 Limitations of Anthropological Evidence

The process of determining age at death, sex and stature in human remains, particularly when they are in a poor condition is fraught with problems which are compounded by the inherent variability of the human species, lack of reference standards for different populations across the world, and difficulties in conducting research because of ethical concerns and legislation governing the use of human tissue (Walker *et al*, 1988; Duric *et al*, 2005; Komar and Potter, 2007; Iscan, 2005; Duric *et al*, 2007; Human Tissue Act, 2004). As a result, anthropologists often have to refer to population and period specific standards which are not always directly comparable to the populations that they are examining.

The following techniques are those commonly used to establish the age at death and sex of the deceased in the field or temporary mortuary during the investigation of war crimes. It is not an exhaustive list or discussion, as that is outside the remit of this research. It is also recognised that there are more in-depth analytical methods which can be employed that yield higher degrees of accuracy. Such techniques, however, are more frequently used in situations where there is less concern regarding the constraints of time and money, for example, in the investigation of an individual suspicious death or as part of a research project. The techniques described below are recognised, published methods with which all professional anthropologists engaged in the investigation of war crimes should be familiar, although individual and national preferences do exist.

Before entering into a discussion on the advantages and disadvantages of specific techniques it should be made clear that the accuracy of the data ultimately produced is

highly dependent on the state of preservation and condition of the remains examined. Certain skeletal elements are essential in order to establish specific parameters with any confidence. For example, the pelvis provides the most accurate indicator for biological sex and the cranium for estimation of ancestry. Methods based on other skeletal elements can be used but they are less definitive and therefore the margin of error will be greater (Byers, 2005: 183, 170).

4.2.2 Estimation of Age at Death

Any age assigned to an individual should comprise a range rather than a single value. Current methods are simply not sufficiently refined to provide an exact age and attempts to do this can be misleading and cause false identifications or potential victims to be excluded from consideration (Simmons and Haglund, 2005: 164; Burns, 2007: 201). Margins of error can vary enormously depending on the developmental stage of the individual being examined and the methods used. It is true to say that the margin of error will always increase with age, and whilst it may be possible to estimate the age of a new born baby to within weeks, in older adults, age ranges may be tens of years, or even open ended, e.g. 50 or 60 plus (Krogman and Iscan, 1986; White and Folkens, 2005: 360). It has also been recognised that current methods have a tendency to under-estimate the age of adults over 40 years (Cox, 2000). This was found to be the case in a recent study of 136 legally identified Kosovo Albanians recovered from a mass grave in Batajnica, Serbia, where the sex and age of younger and middle aged adults was reliably determined, but the older adults were "markedly under-aged" (Djuric et al, 2007). At the present time, age estimation in children remains more accurate than in adults providing the relevant parts of the body are present.

Dentition

Assessment of the development of the teeth is considered to be the most accurate means of determining age at death in those individuals aged less than 21 years, as the teeth develop and erupt at predictable rates and are less affected by environmental conditions than the skeleton (Scheuer and Black, 2000). Tooth development begins in the embryo at just 14 to 16 weeks, eruption begins at around six to nine months and development and eruption continues until approximately 15 years ± 36 months, although there is often variability in the third molar (*ibid*; Hillson, 2002; White and Folkens 2005; Ubelaker

1989; Moorees et al 1963). Charts featuring graphic representations of deciduous and permanent tooth development and eruption have been produced which can be referred to during the examination of dentition to assist in the assignment of a chronological age (Ubelaker 1989). It should be noted however that dental development is influenced by ethnic origin and sex (White and Folkens 2005) and, as with any method, the standard deviations increase with age.

When dental development is complete other features in the teeth can be assessed as a means of determining age. The method devised by Gustafson which examines multiple indicators in adult teeth, including attrition, root transparency, resorption and secondary dentin is considered to be one of the most reliable means of determining age from dentition in adults over 21 years (Gustafson 1950). Gustafsen's technique was subsequently modified (Lamendin *et al*, 1992) and whereas the original method requires the tooth to be thin-sectioned, the modified method can be applied to whole teeth, thereby making it more 'user friendly' when dealing with large numbers or when working in a temporary mortuary. The technique has been used by the ICMP at the mortuary in Sarajevo, although they do recommend separate formulae for individual teeth (Burns 2007), and also by ICTY in Visoko in 2001 (Clark *pers com*). Methods based on tooth wear and attrition alone (Miles 1963; Brothwell 1981; Buikstra and Ubelaker 1994; Ajmal *et al*, 2001) are less accurate due to factors such as variability in diet and lifestyle, the genetic makeup of the individual and the geographical location they inhabited.

The level of accuracy attainable when estimating age from teeth is not just dependent on the age of the victim, but also on the condition of the dentition. Problems may arise where there is widespread decay or excessive attrition, or where the teeth are absent either because of disease or old age – a frequently occurring situation in the rural communities of Kosovo and Bosnia-Herzegovina. The teeth may also be absent because of disruption to the skull by ante-mortem or post-mortem traumatic injury. Teeth do not survive extreme heat well as the enamel crowns tend to shatter, although the un-erupted teeth of the juvenile are often protected by the jaw. As such, victims of shellings, explosions or post-mortem burning, often present with no dentition or dentition that is not suitable for examination.

Skeletal Development

The bones of the skeleton develop from multiple primary and secondary ossification centres which mature to form individual bones. During growth and development the primary centres of ossification, the main part of the bone, remain separated from the secondary centres of ossification, the epiphyses, by cartilage. These elements will grow independently and epiphyseal union (where the different elements become joined) will eventually occur as the cartilage ossifies and the development of the bone becomes complete. This process of fusion is a progressive one and occurs at different ages in different bones (Scheuer and Black, 2000). Age ranges have been calculated for each skeletal element (*ibid*; Buikstra and Ubelaker 1994; Ubelaker 1989) and knowledge of these enables the anthropologist to estimate age at death in the developing skeleton with relative accuracy depending on which bones have survived and their completeness. Some epiphyses such as the medial end of the clavicle have a relatively long time-span during which closure can occur, whilst in others, such as the greater trochanter of the femur or the proximal end of the radius, the duration of closure is relatively short, meaning that they are potentially more useful in producing a narrower age range. For example, the development of some of the cranial bones in the young infant is predictable to within weeks or months making it possible to assign an age with relatively little margin of error (*ibid*).

The medial end of the clavicle and the bodies of the first and second sacral vertebrae can remain un-fused until the early to late twenties, making it possible to estimate age using epiphyseal closure well into adulthood. The practise of large scale longitudinal cutting of humeral and femoral heads for age at death assessment, as recommended by the Workshop of European Anthropologists (1980), has shown that epiphyseal fusion lines frequently stay visible long after adolescence, and they may even be seen in the elderley (Maat, *pers comm*.). It will also remain visible for many years on x-ray (Viner, *pers comm*.). As with dentition there is variability between the sexes and different ethnic groups in rates of epiphyseal fusion. In a study comparing epiphyseal union in North American and Bosnian male skeletal material, Schaefer and Black (2005) found that closure in the Balkan group consistently occurred two years in advance of the American group. The result of applying American standards to Balkan remains therefore would be to over-age the young males by two years or more. This finding is particularly significant

when considering the murders of adolescents during the conflicts and interpreting the demographics of the mass graves and executions

Long bone length can be used as a guide to age at death in children, although this method is considered by some to be reasonably accurate only up until the age of 10 years (Byers 2005). Age ranges have been formulated for the lengths of the major bones in the body (Scheuer and Black 2000) but accuracy has been found to vary according to the sex and life stage of the individual, decreasing the older the child gets (Scheuer and Black 2007).

Age Determination in Older Juveniles and Adults

Once dental and skeletal development is complete the anthropologist is reliant on standards that are based primarily on degenerative change. The methods most commonly used include assessment of the appearance of the pubic symphysis of the pelvis (McKern and Stewart 1957, cited in Ubelaker, 1989; Gilbert and McKern 1973; Katz and Suchey, 1986; Brooks and Suchey 1990), the auricular surface of the ilium (Lovejoy *et al*, 1985; Buckberry and Chamberlain, 2002), the sternal ends of the ribs (Iscan *et al*,1984; 1985) cranial suture closure (Meindl and Lovejoy 1985; Krogman and Iscan 1986; Ubelaker 1989; Buikstra and Ubelaker 1994), presence of degenerative joint disease (Ubelaker 1989; Stewart 1958; Roberts and Manchester 1997), and ossification of cartilaginous tissue (Scheuer and Black 2007).

Age determination using the pubic symphysis is based on observing the changes that occur in the surface morphology of the pubic symphyseal face with advancing age. These changes continue throughout life and have been graded into stages, which have been assigned an age range. The anthropologist compares the actual pubic symphysis to a set of male or female casts which represent each stage, and each cast also has an accompanying written description. The method developed by Brooks and Suchey (1990) is regarded as being the most accurate. Age ranges are given at 67% and 95% confidence intervals and have been found to be very accurate in the younger age groups. Unfortunately in the later stages which relate to the older age groups the age ranges become so wide they are unusable in a forensic context (e.g. Stage 6 gives an age range of 34 to 86 years in the male). Additional problems include the poor survivability rate of the element, and the fact that even in extensively decomposed remains it is still often covered in thick cartilage which is difficult and time consuming to remove. This problem is not insurmountable

however, and the technique remains a valuable one for the age assessment of individuals in their mid teens to early thirties.

The sternal ends of the ribs are more easily accessible and despite their location at the front of the chest often survive well. As with the method applied to the pubic symphysis, the age related changes that occur at the ends of the ribs where they join to the sternum through cartilage, have been graded and casts made for comparison (Iscan *et al*, 1993). The changes are based on the deterioration of the bone and progressive ossification of the hyaline cartilage which ultimately results in an apparent hollowing out of the rib at the end and the production of long bony projections. There are differences in the ossification patterns of males and females therefore sex specific casts have been developed and must be used (*ibid*). As the rib is not sexually dimorphic in the same way as the pubic bone, it can be a problem knowing which standards to use if the rib is from an incomplete set of remains that cannot be sexed. It is also necessary to identify the right fourth rib as this is the bone on which the research was undertaken, although a study by Yoder *et al* (2001) found that there was little variation between the changes that occur in the right fourth, and those that occur in the right and left fifth to ninth ribs. They do, however, advise caution when using ribs one to three, and 10 to 12, and recommend the use of a composite score as "questions concerning statistical significance" arose during their research (Yoder *et al*, 2001:223).

Ossification of hyaline cartilage can occur in other parts of the body including the trachea, the larynx and the thyroid, and this too can provide an indication of advancing age. Fusion of the xyphoid process to the body of the sternum, and fusion of the manubrio-sternal joint also occur as a result of the aging process (Scheuer and Black, 2007). Although ossification of cartilaginous tissue is seen less frequently in individuals under the age of 40 years, it can still be highly variable, is sex and population specific, and may even be affected by such things as diet (Brothwell, *pers comm*). As such it should really only be used as a guide to age, or in conjunction with other techniques.

The cranium consists of 22 separate bones which gradually fuse together with age (Gray, 1977: 55). Researchers have devised methods of calculating composite scores based on the degree of closure of individual ectocranial sutures which can be related to chronological age. For example, Meindl and Lovejoy (1985) selected 17 sutures which

could be graded on a scale of 0 (unfused) to 3 (completely obliterated). The scores are then added and the composite score is assigned a mean age with a standard deviation. Endocranial suture closure has also been used to categorise adults as young, middle, or older (Krogman and Iscan 1986). Cranial suture closure can be a useful means of estimating broad age ranges, when used in conjunction with other methods but it must be emphasised that rates of closure are extremely variable between individuals. An additional problem with the use of this method in the investigation of war crimes is that quite frequently the skull will be damaged by severe traumatic injury such as a gunshot wound, and all the sutures required to make the composite score will not be present for examination.

Like the pubic symphysis and the ribs, the auricular surface of the ilium, which articulates with the sacrum, displays changes which are related to age. Lovejoy *et al* (1985) devised a method to categorise these changes and produced a series of photographs with written descriptions which were then assigned an age range. The method has the advantage that this particular part of the pelvis is fairly resistant to damage, but it has been criticised because interpretation of the changes can be quite subjective and although the age ranges given are narrower than for the pubic symphysis, there are large errors of estimation associated with it due to variability in the amount of degenerative change that can occur at this joint (White and Folkens 2005; Burns 2007). Lovejoy *et al*'s method was tested and revised by Buckberry and Chamberlain (2002), who looked at different features on the auricular surface from which they created a composite score. Although there are still some concerns over its accuracy (Falys *et al*, 2006; Mulhern and Jones, 2003) the revised method has now been adopted by The Central Identification Laboratory in preference to the pubic symphysis, for determining age at death in servicemen (McKinnon *pers. comm.*).

Degenerative joint disease or osteoarthritis can be used as an indicator of advancing age, based on the fact that age is commonly regarded as one of its primary causes (Roberts and Manchester 1997; Lovell, 1995; Ubelaker 1989). Degenerative changes to the joints occur as cartilage continues to mineralise into old age. The brittle ossified cartilage will eventually break down and bone begins to rub against bone (Maat, *pers comm.*). Manifestations in the skeleton include porosity of the joint surfaces and osteophytosis – the development of bony projections around the margins of the joints. Stewart (1958)

studied the development of osteophytes in the spine and categorised them into five stages according to severity, and then made an attempt to correlate this to age. Whilst it is true to say that degenerative joint disease is more frequently observed in the older rather than the younger adults, changes must be looked at in conjunction with other factors such as the lifestyle of the individual or population and genetic predisposition. For example, in the mortuary in Kosovo quite extensive spinal joint disease was observed in individuals who had been categorised as middle adults by other means. It was evident, however, from simply observing the living population that most people in rural communities were engaged in heavy physical labour from an early age, including constant repeated flexion of the spine in order to plant the fields. This would have made them susceptible to developing osteoarthritis of the spine at a much earlier age than many of their sedentary western European contemporaries. When using degenerative change as a guide to age, care should also be taken to distinguish primary osteoarthritis from secondary osteoarthritis. Whilst the former is more often than not age related, the latter can occur in specific joints even in children as a consequence of traumatic injury or the joint being structurally abnormal (Roberts and Manchester, 1999: 101; Ortner and Putscher, 1981: 419).

Quantitative bone histology can be used to indicate age at death. The method is based on the principle that the microstructure of bone changes over time and that secondary osteons, the number of which increase with age, can be identified and counted. Several different criteria for the inclusion of secondary osteons in counts have been devised (Robling and Stout, 2000; Stout, 1992). There are, however, many factors which can influence cortical bone remodelling such as sex, nutritional status, underlying pathological conditions, and physical activity (*ibid*). This means that age estimates are not always consistent and there are differing opinions as to the success of the technique (White and Folkens 2005). From a practitioners' point of view, the main drawback to the method is that it requires a histology laboratory and technician to prepare the thin sections of bone and a specialist skilled in the examination and interpretation of the samples. For this reason, despite its potential, it is rarely used in the investigation of war crimes.

4.2.3 Estimation of Sex

In the adult skeleton, the determination of sex is based on differences in pelvic and cranial morphology which can be supported by metric data including the dimensions of the joint surfaces, and the lengths of long bones (Buikstra and Ubelaker 1994; Krogman and Iscan 1986; Bass 1995; White and Folkens, 2005; Ousley and Jantz 1996).

The pelvis is the most reliable indicator of sex in the human skeleton as the sexually dimorphic features are directly related to the function of childbirth (Byers, 2005). The female pelvis needs to be wider, flatter and more spacious than the male in order to accommodate the growth and delivery of a baby. When examined in terms of individual features this means that the greater sciatic notch and the sub-pubic angle are wider, the pelvic inlet is larger and the sacrum (which is part of the pelvic girdle) is less curved anteriorly and shorter in length. The alae are also proportionally longer than those of the male. In order to compensate for the differing mechanics produced by a flatter and wider pelvis, the acetabuli (hip sockets) are placed further forward and are deeper in the female. Methods have been devised for scoring these individual features on a scale of 0 to 5, with 0 being the most female expression and 5 the most male (Buikstra and Ubelaker 1994). The female will also often display a groove at the anterior inferior edge of the auricular surface called a pre-auricular sulcus which is rarely present in the male (*ibid*). There are additional differences which relate to muscle attachment sites on the pelvis, such as the ischial tuberosity, which provides attachment for some of the large muscles of the thigh, which is generally larger and more rugged in males than females. This bone is also more flared in the female, again to create more space in the pelvic cavity (Krogman and Iscan, 1986; Mays, 1999). Criteria have been devised for distinguishing the male and female pubic bone, based on the presence of a ventral arc (Phenice, 1969; Anderson, 1990).This can be useful although it is sometimes difficult to identify the trait, particularly in relatively fresh remains, and interpretation of its presence can be subjective.

The cranium is the second most reliable indicator of sex and, like the pelvis, it displays a number of features which have been graded according to masculinity or femininity (Buikstra and Ubelaker 1994). These include the supra orbital ridges which are more pronounced in the male and differences in the shape of the orbits, the orbital rims, and the slope of the forehead. The male generally has a larger more rugged external occipital protruberance and mastoid processes although these are related to function so they could also be pronounced in a female with well developed neck muscles. The shape of the jaw is

different in the male and the female, with the female having a more pointed chin and obtuse angle of the jaw (Bass, 1995; Buikstra and Ubelaker, 1994; Rogers, 2005)

Discriminant function analysis can be applied to measurements taken from the skull and pelvis as a means of establishing sex, and metric data can be entered into computer programmes such as CRANID and FORDISC (Wright 1992; Ousley and Jantz 1996) where both sex and race are assigned on the basis of probability. These programmes have been employed more frequently to analyse archaeological populations rather than remains recovered in large scale forensic investigations, but they could potentially be of use.

Differences in the male and female pelvis and cranium are sometimes ambiguous and many individuals will possess both male and female traits (Burns, 2007). There may also be variations according to ancestry and individual lifestyles, and experience has shown that there is a tendency for very elderly males and females to be much harder to distinguish skeletally. In these instances the balance must be considered and a sex or probable or possible sex assigned on the basis of whether male or female traits predominate, with the most credence generally being given to those of the pelvis as these are most closely related to function (Byers, 2005). As with age at death, sexually dimorphic traits are often population specific and recent research in the Balkans has focussed on the identification of those traits which appear to be the single most accurate indicators of biological sex (Duric *et al*, 2005).

Observations based on morphology can be supported by postcranial metric data, and measurement ranges have been formulated for the lengths of the bones and the maximum diameter of the joint surfaces (Bass 1999; Chamberlain, 1994; McCormick *et al*, 1991). These can be useful, although if a population is not particularly sexually dimorphic there is a tendency for measurements to fall between the two ranges in the overlap zone.

Sex determination in the pre-pubescent individual is extremely difficult, as the secondary sexual characteristics only become more apparent when hormone levels increase (Lewis and Rutty, 2003). A great deal of research has been undertaken in this area and dimorphic traits have been identified in specific elements such as the teeth (Hunt and Gleiser, 1955), the ilia in foetal and infant remains (Weaver, 1980), the orbit and mandible (Molleson *et al*, 1998), and the basi-cranium (Veroni *et al*, 2010). Unfortunately these methods all

require further testing and although it is acknowledged that slight differences do exist between the male and female juvenile skeleton, these are currently considered to be too slight to be of use in forensic cases (Scheuer and Black, 2000). DNA analysis therefore remains the best option for determination of sex in children. If the remains are sufficiently well preserved a sample can be analysed to determine the presence of a Y chromosome, which will indicate whether the child is a male or a female (Gunn 2006; Goodwin *et al*, 2007).

4.2.4 Estimation of Stature

A short summary of the methods currently used to estimate living stature in extensively decomposed and skeletonised remains has been included in this section as this is considered with regard to perceived age in Bosnian teenage males (Chapter Six, Section 6.4.5).

The technique most frequently used by anthropologists to estimate the height of a living person from skeletal remains is that developed by Trotter (1970), based on previous methods devised by Trotter and Gleser (1958). This involves measuring the length of one (or more) intact skeletally mature long bone from the upper or lower limb and then entering the value into a population specific regression formula (Ubelaker, 1989: 61). The reference population comprises American white and black males and females, and "mongoloid" and Mexican males (*ibid*). For each height calculated there is a standard deviation which provides a margin of error and the size of this depends on the bone used. The femur or femur and tibia combined have proved to be the most accurate (*ibid*).

A different technique was developed by Fully (1956, cited in Bidmos, 2005), based on the measurement of the skull, vertebrae, femur, tibia, talus and calcaneus, and the addition of a soft tissue correction factor. The method is complex and it has been shown to provide good estimates, although the use of an age factor has been suggested to improve accuracy (Bidmos, 2005; Raxter, 2007). Research into height estimation from dimensions of sacral and cocygeal vertebrae (Pelin, *et al*, 2005) and the estimation of stature using foot and shoe dimensions (Ozden, *et al*, 2005) has also been undertaken, but these are not standard methods routinely used by forensic anthropologists.

Whilst estimation of stature plays an important role in the identification of unknown victims, it is rarely attempted in juvenile remains, unless the body is well preserved and it is possible simply to measure cadaver length. Cardoso (2009) conducted a study which compared the accuracy of three methods which had been devised to estimated stature from long bone lengths in children aged between 1 and 14 years (Feldesman, 1992; Telkka *et al*, 1962; Smith, 2007, in Cardoso, 2009). He found that all three methods consistently underestimated stature and advises caution in their use, particularly when extrapolating the estimates widely beyond the study groups on which the research was based (*ibid*).

The living height of the children in this research was calculated in less than ten cases and it appears that the majority of these were based on long bone measurements. It may have been appropriate to use adult formulae in those children aged 15 years if skeletal maturity had been attained, but stature also appeared to have been calculated from the skeletonised remains of children as young as 6 months. It is possible that where this occurred the anthropologist was using one of the methods described by Cardoso, but this is not specified, so the accuracy of the data cannot be verified. There were three cases where it was stipulated that the remains were well preserved and with some skin and soft tissue, or that they were mummified, and it is presumed that in these instances full body length was measured.

4.2.5 Specific Methodological Problems for this Research

The methods used to *record* age at death and sex in adult and juvenile remains are unfortunately not as standardised as the techniques used to *determine* them, and there are extensive variations and inconsistencies in the way that anthropologists from different teams and of different nationalities present their data. These variations include methods of charting dentition, the type of skeletal inventories used, the terminology used to describe different age ranges and the breadth of age ranges given. For example, Buikstra and Ubelaker use the term "young adult" to describe someone aged between 20 and 35 years (Buikstra and Ubelaker, 1994: 9), whereas many practising forensic anthropologists might reserve this classification for adults aged 18 to 25 years, or anyone aged greater than 18 years who has not yet reached skeletal maturity.

There is often variation in the classification of "child" or "adolescent" too and this can cause serious problems when trying to interpret reports where the raw data is not available. Buikstra and Ubelaker define an adolescent as an individual aged between 12 and 20 years (*ibid*). This category includes both children and adults and seems inordinately wide given the obvious differences that would exist in most of the bones and certainly the teeth of individuals at the lower and the upper ends of that range. It is true to say that there are real difficulties in determining age in the mid to late teens group as closure times of the epiphyses in the long bones often bridge this gap (Krogman and Iscan, 1986; Schaefer *et al*, 2009), but these can be mitigated to a certain extent by providing numerical age ranges rather than descriptive terms. Specific problems relating to the estimation of age in this research population included very wide age ranges, incorrect calculation of mean ages, inconsistencies between ages cited in different fields within the same record (i.e. relating to the same individual), and the use of descriptive terminology instead of numerical age ranges.

It would have been preferable to narrow down individual assessed ages at death, after having applied multiple methods, but variation in the original recording of data by the investigators made it impossible to do so.

These problems and how they were addressed are discussed in detail in Chapter Five, Section 5.6.2.

4.3 Methodology Relating to the Identification of Traumatic Injury and Cause of Death in Decomposed, Skeletonised, Fragmented, Burnt and Incomplete Remains

4.3.1 Characterisation of Traumatic Injury

Skeletal trauma can be categorised into three basic groups based upon the type of force used: (1) blunt force trauma (2) sharp force trauma and (3) gunshot and projectile injuries (Galloway *et al*, 1999: 5). The injuries in each of these categories will display specific features, but can include a wide range of different causes.

Blunt force trauma may be defined as a "relatively low velocity impact over a relatively large surface area" (*ibid*). It might be produced by a variety of objects including fists or

feet, a hammer or other tool, a baseball bat, metal pipe, weapon, e.g. the butt of a rifle, or indeed any other "weapon of opportunity" (Murphy, 2005: 98; Strauch *et al*, 2001). Characteristic features will include bone breakage at the point of impact, which may reflect the shape of the item used to create it, and secondary fissures which run into the surrounding bone mainly away from the direction of the force indicating the direction from which the blow has been struck (Galloway *et al*, 1999; Simpson and Knight, 1985).

Sharp force trauma involves "forces directed along a very narrow surface" with the bone being physically interrupted by a foreign object such as a knife, saw or the blade of a machete (Galloway *et al*, 1999: 6). Knife points and different types of blade can produce very specific patterns in bone, for example, injuries caused by a severe hacking blow will typically show a smooth flat surface on one side where the blade enters the bone and a corresponding rough edge on the other, where the fracture terminates (Humphrey and Hutchinson, 2001).

Gunshot and projectiles that impact bone with enough force to penetrate its surface will generally cause complete discontinuities together with displacement of fragments and usually fracture lines. Depending on the velocity of the projectile, the entire structure which it impacts on may shatter (Byers, 2005: 295). Bullet damage to bone may be high or low velocity (Clark, 2005:368) although it often involves "substantially higher velocities distributed over small areas" than those seen in blunt and sharp force trauma (Galloway *et al*, 1999: 6). Whilst bullets are the most common type of projectile encountered in war crimes, shrapnel from explosions, arrows, spears, or indeed any flying object can fall within this category (Byres, 2005: 295; Clark, 2005).

A typical gunshot wound will have an entry and an exit wound with bevelled edges, and associated linear fractures which generally conform to certain characteristic patterns, taking the paths of least resistance (Fenton *et al*, 2005: 1; Spitz and Fisher, 1980). However, the appearance of the injury will be highly dependent on the proximity and trajectory of the shot as well as the calibre of the bullet, its velocity, and the type of weapon that fired it (Byers, 2005; Fenton *et al*, 2005). In the young child, projectile injury can lead to severe disruption of the skeleton and because the bones of the skull are so thin and even after reconstruction it may still be difficult to determine the type of projectile involved and the direction of the path it took (Di Maio, 1999).

Clearly a combination of different types of trauma may be found in any single individual and interpretation of the cause and sequence of multiple injuries can be extremely problematic, particularly where remains are decomposed, fragmented or burnt. In addition to genuine ante-mortem injuries, deliberate or incidental post-mortem damage might also be present. This further complicates differential diagnosis in skeletonised and modified remains and may make determining cause of death impossible. Prior to discussing the criteria used to distinguish ante-mortem from post-mortem trauma, it is necessary to consider the normal healing process which occurs following a fracture to bone, as the presence or absence of the changes described is fundamental to determining when the injury was sustained.

4.3.2 The Mechanism of Fracture Healing

Although there was little information recorded in the original data which related to fractures which may have been sustained by the victims some time before death, distinguishing between fractures which occurred around the time of death and those which were a result of post-mortem damage was a very important aspect of the examinations. Determination of whether a fracture occurred before or after death (and specifically how soon before or after) requires knowledge of the process and timing of fracture healing.

The earliest stage of fracture healing is the inflammatory phase which begins as soon as the bone is fractured and lasts for up to five days (Malcolm, 1996a: 72). When a bone is broken, blood from the ruptured vessels within it and around it will quickly form a haematoma between the two fractured ends. Simultaneously, there will be necrosis of the cortical bone around the edges of the fracture site and osteoclasts will start to resorb the dead bone (Galloway *et al*, 1999; Malcolm 1996a). The earliest histological change to the bone is necrosis of the haemopoietic or fatty marrow cells which, together with the haemorrhaging causes an acute inflammatory response.

After approximately five days to one week, the reparative phase will commence, during which time osteoblasts and chondroblasts will move to the fractured area and start to form callus. During this time there will be a periosteal, a medullary, and a cortical reaction. The

periosteal reaction will produce external provisional callus, the medullary reaction will cause resorption of dead trabeculae within the medullary canal and production of an internal callus and the cortical reaction will result in osteoclastic resorption of bone at the fractured ends. The latter may be seen histologically as the haversion systems become wider, or on a radiograph as the fracture gap initially becomes wider (*ibid*). According to Malcolm (1996a) the reparative phase will normally last for approximately six weeks, but Galloway states that the callus will take a week to mineralise then between four weeks and four months to complete (1999: 13). The callus should eventually bridge the two fractured ends and hold them together.

The fibrin clot between the two fractured ends will persist for some time until it is eventually replaced by bone. How long this takes will depend on the location of the fracture and the type of bone affected, the stability of it whilst the healing process occurs (i.e. how well it has been immobilised), the type and complexity of the fracture, and the age, health and nutritional status of the affected person (Crawford-Adams, 1987). Consolidation of the fracture will take between one to five months depending on the above factors, with it generally occurring much faster, in young children (*ibid*). Complete remodelling can take between one to four years, again depending on the type of fracture, its treatment, and the age and health of the individual concerned (Galloway *et al*, 1999: 13).

It is of course possible that a fracture may never heal for a number of reasons including, continued movement and disruption of the callus, interposition of soft tissue between the fractured ends of the bone, infection, or simply because the affected individual died before healing had chance to occur (*ibid*; Singh, 2008).

In the context of this research, the general health and nutritional status of the victims from Kosovo and Bosnia-Herzegovina must be considered when interpreting evidence or lack of evidence of healing in fractured bone. Some of the victims, for example, the elderly and those who were in long-term hiding, prison, or simply unable to find adequate food in the shops, would have been deficient in the vitamins and minerals required for good fracture healing. Similarly the treatment or lack of treatment received by those in concentration camps could have delayed the union of any fractures indefinitely. In

practical terms this could mean that fractures that were a number of days or even weeks old might not show any evidence of healing on post-mortem examination.

4.3.3 Distinguishing between Ante-mortem and Post-mortem Fractures in Decomposed and Skeletonised Remains

In the recently deceased or bodies which have been in burial environments that favour good preservation, evidence of associated bleeding into the soft tissues surrounding the bony injury can provide a good indication that the damage occurred prior to death rather than after it. However, where remains are extensively decomposed or completely skeletonised any early reactive changes such as initial haemorrhaging, clotting or even early callus formation will not be seen. Where no signs of healing are evident and there is a question regarding timing of the injury, the pathologist is dependent upon the characteristics and location of the defect in order to make a decision. Sorg and Haglund note that,

> *"The morphology of peri-mortem wounding to bone cannot, by that alone be differentiated from post-mortem damage to fresh or nearly fresh bone…as during the early post-mortem period before bone loses its moisture and organic components it tends to respond to modification agents as if it were fresh"* (Haglund and Sorg, 2002: 11).

However, whilst it is true to say that bone in the very recently deceased will respond to trauma in the same way as it would if the individual were still alive, some distinctions can sometimes be made in terms of the nature and location of ante-mortem and post-mortem injuries. Clark states that "certain patterns of injury are characteristic of post-mortem damage, for example, lines of fractured ribs down each side of the chest, crushing fractures of the pelvis and separation of the limbs" (2005: 368). When unhealed fractures are seen in places where post-mortem damage is not usually observed this should give cause for suspicion. Clear examples of this were identified by Clark during his post-mortem examinations of 143 bodies and body parts from the Kevljani Grave site in Bosnia-Herzegovina. This grave contained the remains of individuals who had been imprisoned in the infamous Omarska Camp, the subject of Hucanovic's book *The Tenth Circle of Hell: A memoir of life in the death camps of Bosnia* (1997). Clark found that by

far the most common injuries he encountered were fractures of one or more ribs. The fact that the fractures only affected one or two ribs in each individual, rather than all the ribs in symmetrical lines, was strongly suggestive that the injuries were ante-mortem rather than post-mortem. In addition to this he observed that,

> *"the detailed appearance of many of the injuries indicated that they had been caused by the rib bending inwards and fracturing, first on the inner surface, a pattern suggestive of blows from the outside; some were also horizontal or spiral, particularly suggestive of something like a pole or a bar striking the chest lengthways"* (Clark, 1999: 6).

He described the occurrence of injuries caused by blunt force trauma as being "almost universal", with only five out of the 143 having "no obvious fractures" (*ibid*). In this instance the high frequency of the fractures in uncharacteristic locations could also be considered as a factor when interpreting the injury patterns amongst the group as a whole.

Once the moisture from bone has been lost, the colour of any fractured edges may also be used to assist in distinguishing post-mortem from ante mortem injuries. The broken edges will appear lighter than the surrounding undamaged bone, and the contrast will be particularly noticeable where the undamaged outer surface is weathered or stained a different colour by minerals in the soil or certain types of leaves on the ground (Sorg and Haglund, 2002; Byres, 2005). Different breakage patterns will also be observed in dry and wet bone, as they respond differently to force. Dry bone is more likely to "snap like a dry twig" (Byres 2005: 291) when impacted by a force and long bones will usually break nearly at right angles with ends that are almost flat (*ibid*). Bones which still contain moisture however, are more likely to have a jagged, uneven fractured end (*ibid*).

Certain types of trauma such as that caused by gunshot are distinctive enough, even in skeletal remains, to allow post-mortem damage to be discounted as a cause. That is not to say, however, that gunshot wounds may not have been inflicted post-mortem perhaps by a perpetrator wishing to make sure that the deceased were actually dead. At a crime scene in the village of Caralluka, Kosovo, several close range shots to the heads of individuals who had undoubtedly already been killed or injured by semi-automatic weapon fire were observed (Roberts, 1999a). The reasons for arriving at that unofficial conclusion (cause of death being the remit of the pathologist!), were the additional devastating injuries to the

torsos and crania caused by high velocity gunshot, and the corresponding marks in the walls of the house where the victims had been stood whilst they were executed. A large proportion of these victims were children (see Chapter Six, Section 6.4)

4.3.4 Distinguishing between Ante-mortem and Post-mortem Fractures in Fragmented Remains

The problems associated with distinguishing between post-mortem and ante-mortem trauma, are compounded when dealing with incomplete bodies, single body parts and extensively fragmented remains. Whilst gunshot wounds are undoubtedly distinctive, it can often be difficult for the pathologist to identify an entry and an exit wound if the affected bone has fragmented due to the impact of the force. As such, the anthropologist will often play a key role in reconstructing the remains in order that the true nature of the defect can be determined. In the child, projectile injury may lead to severe disruption of the bone, particularly the cranium, and even after reconstruction it may still be difficult to be certain of the direction of the path of the projectile or to determine the type involved (Lewis and Rutty, 2003).

Simmons describes the difficulties experienced when trying to distinguish between deliberate blunt force trauma and post-mortem injuries sustained as bodies were thrown down the cave shaft at Karstic in Bosnia (Simmons, 2002). In this instance, the distinction was ultimately made following reconstruction of cranial fragments and examination of the focal points of impact, together with an assessment of the environment within the cave shaft.

There may also be additional, non-accidental post-mortem damage present on remains if the body has been deliberately dismembered in an attempt to hide evidence or confuse subsequent investigations. In such instances it is necessary to identify all the different types of post-mortem trauma present in order to ascertain the full circumstances surrounding the death and disposal of the remains. As described above, sharp force trauma has some unique characteristics, and the presence of things such as striation or saw marks might enable the type of weapon used to be identified.

4.3.5 Identifying Evidence of Trauma in Burnt Remains

A body may be burned as a direct consequence of the event which caused death, for example an explosion, or it may represent a deliberate attempt by the perpetrator to conceal evidence of ante-mortem trauma (Knight, 1997: 144).

When the body is subjected to extreme heat it will undergo a number of predictable changes: the skin will harden and split, the subcutaneous fat and muscle will burn, there will be dehydration and oxidation of the organic component of the body and eventually, at very high temperatures, there will be re-crystallisation of the mineral component of the bone (Mayes, 1998: 207; DeHaan and Nurbakhsh, 2001; McKinley, 1994; Shipman *et al*, 1984). As the body burns, it will adopt what is known as the pugilistic pose which is caused by contraction and shrinkage of the muscles in response to the heat. The orientation of skeletal elements may become rotated, flexed and repositioned, which in turn can cause actual fracturing and warping of bone (Symes *et al*, 1999; Smith *et al*, 2001). Smith *et al* state that the pugilistic pose "can be expected to occur regardless of body position" (2001: 214) and advocate caution if it is not present. They also claim that absence may reflect conditions where the body has been restrained (Symes *et al*, 1999). Whilst this is true, there may be other factors to consider: in the first instance, the body has to be fleshed and reasonably fresh in order for the muscle contractures to be strong enough to modify the skeleton. An absence or only slight adoption of the pugilistic pose could also be an indication that the heat was not very intense or that it did not last for long, as in a flash fire (Redsicker and O'Connor, 1997). It might also be absent or reduced if full *rigor mortis* was present at time of burning (*ibid*) although this opinion is the subject of some debate (Shepherd *pers. comm.*)

Burning fleshed bone typically produces characteristic curved, transverse, thumbnail, and step fractures (Ubelaker, 1989) which are very different in appearance to the fractures caused by ante-mortem trauma. Rockhold (1996) divided heat induced modifications into seven categories: longitudinal fractures, step fractures, transverse fractures, patina, splintering and de-lamination, curved transverse fractures, and burn line fractures, all of which have unique identifying features (Rockhold, 1996, cited in Symes *et al*, 2001). Familiarity with the appearance of these fractures is the key to being able to differentiate between post-mortem modification caused by burning and ante-mortem trauma,

particularly the radiating fractures caused by blunt force trauma. Attention should be paid to any fractures which do not fit the descriptions of those above, particularly if they are seen to extend into un-burnt bone.

The skull will behave in a specific way when subjected to heat. It may display some of the characteristics described above and in addition, the tabula externa will often split away from the tabula interna to expose the diploe between (Symes *et al*, 2001; Pope and Smith, 1994). Redsicker and O'Conner (1997), Edland (1980) and Byers (2005) describe "explosive fractures" associated with burning of the skull. This, they claim, occurs as a result of the fire causing the fluids in and around the brain to boil and expand, with the resulting steam producing enough pressure to cause an explosive reaction. The validity of this is disputed by Pope and Smith (2004) who explain these injury patterns in terms of either normal heat fractures or post-mortem damage. As with the other bones in the body, the skull can become warped as a result of extreme heat, with the affected fragments tending to warp outwards. If the fragments around a fracture site are seen to be depressed inwards, then this may be evidence of blunt force trauma, or perhaps post-mortem damage (*ibid*).

Lewis and Rutty observe that in burnt remains "the pattern of cracking related to the fire commonly resembles a spider's web and affects the side of the skull often bilaterally" (2003: 206). They also note that fractures to the base of the skull caused by heat are "virtually unheard of" (*ibid*), an opinion supported by Edland (1980). If depressed fractures and fractures to the base of the skull are apparent then, depending on the characteristics of the defect, ante-mortem injury should be considered.

Evidence of ante-mortem trauma and other pathological conditions will quite often survive the process of burning, although in cases of extreme fragmentation and incomplete recovery of burnt remains, the pieces of bone containing the defect may be lost (Reinhardt and Fink; 1994). Pope and Smith conducted a comprehensive study on the identification of blunt and sharp force trauma and gunshot injury in burnt cranial bone (Pope and Smith 2004). They used cadaver heads and burned them in a number of different environments which simulated forensic fires. They found that all trauma types survived the heat and retained their diagnostic features, although the edges of linear fractures became "bevelled, ragged, blunted, deformed or otherwise altered" (*ibid*, 2004:

436) at high temperatures when the bone became calcined. De Gruchy and Rogers (2002) carried out a preliminary study in which they made chop marks on fresh, fleshed animal bones, using a knife and a cleaver. They found that in the majority of cases the chop marks were largely unaffected by burning, with the noticeable exception that the size of the roughened point of exit increased in response to the heat. The chop marks became no longer visible in only the rib bones, because they were almost completely destroyed in the fire (De Gruchy and Rogers 2002).

In laboratory conditions it has been proven that the colour of bone changes progressively and predictably according to the temperature of the heat source, ranging from white, yellow, through to red /brown, black, grey and finally, when all the organic matter has combusted and the bone is calcined, white (Shipman *et al*, 1984; Holden *et al*, 1995; Mays, 1999: 207). There are, however, other factors which need to be taken into account when interpreting the colour of bone which has been subjected to heat, such as tissue thickness, relative distance to the source of the heat, and the duration of burning. A range of different colours may be present in a single individual or indeed in an individual bone, and this differential combustion might reflect a number of things including the position of the body in the fire, the amount of body fat or muscle tissue present on different body parts, and any wrappings or coverings on the body (Holck, 1986). Abnormal colour patterns may signify the presence of pre-existing trauma, or trauma which has occurred whilst the body has been burning, for example, the collapse of building structures, or deliberate "stoking" of a fire and movement of the body within it to speed up combustion. Uneven or abrupt changes in colour on reconstructed fragments may be indicative of such things and can therefore provide useful information regarding both ante-mortem and post-mortem traumatic events (Pope and Smith, 2004).

4.3.6 Determining Cause of Death in Decomposed, Fragmented and Otherwise Modified Remains

The pathologist Bernard Knight described death as "not merely the absence of life, as in a stone, but the cessation of life in a previously viable organism" (Knight, 1997: 9). He goes on to explain, "there is no single definition for death, rather it is a process whereby different parts of the body die at different times" (*ibid*). The specific incident which

initiates this process, whether it is an injury or a disease lasting for a brief or prolonged period of time, is referred to as the cause of death (Wright, 2005: 43).

There are many medical conditions that can lead to death in human beings, for example, myocardial infarction, cerebro-vascular accident, acute infectious disease, malignant disease or soft tissue injury and internal or external bleeding. The skeleton is often unaffected in such cases therefore the pathologist is reliant on the presence of soft tissue in order to determine cause of death. Unfortunately when investigating war crimes the forensic pathologist will often be dealing with bodies that are extensively decomposed, fragmented and burnt, which will have little or no soft tissue remaining. He or she is therefore reliant on identifying any bony injuries which may have occurred in association with the soft tissue injuries that were the actual cause of death. Whilst it is often possible to identify skeletal trauma even in extensively modified remains, the pathologist has to be able to demonstrate that by implication, the injury which caused the defect would have been fatal (Clark, 2005). For example, if a gunshot wound was to the head, even if there was no surviving brain tissue it could be argued convincingly that the victim would not have survived this injury, particularly if the trajectory of the bullet can be reconstructed. During the trials conducted by ICTY in The Hague, Clark used this line of reasoning to explain how cause of death could be determined in incomplete bodies. In a comprehensive answer to a question regarding the limitations of pathology in skeletonised remains, he described how even if only a head and torso survived, if that skull had a gunshot wound through it, then a cause of death could be given. The same logic could also be applied to gunshot trauma to the chest which must have occurred in conjunction with disruption to the major organs and blood vessels in the chest (Clark, 2000).

It is often the case that juvenile remains will decompose faster than those of adults, and they are more susceptible to taphonomic forces such as environmental degradation and scavenger activity (Morton and Lord, 2002). The bones are generally thinner and will break more easily and this can make physical reconstruction more difficult (Lewis and Rutty 2003). Poor preservation and fragmentation can therefore make the identification of ante-mortem trauma and determination of cause of death even more problematic.

Radiography can be particularly useful in assisting the pathologist to determine cause of death in decomposed remains. It is used routinely in the examination of victims of war

crimes both as a preliminary health and safety check, and as a tool for the pathologist to identify and locate ballistics and shrapnel prior to opening the body bag and disturbing the remains. Quite often ballistics can move once the body is disturbed, for example during recovery and transportation. Radiography provides the pathologist with the earliest opportunity to view the projectile before further movement can occur. Brogden *et al* (2003) list the basic radiological information that can be provided regarding gunshot. They include the number of bullets, their location, the type and calibre of the bullets, the angle and direction of fire, and the discovery of concealed gunshot wounds which might not otherwise be visible in extensively decomposed remains (Brogden *et al*, 2003: 161). This information may ultimately be crucial in enabling the pathologist to decide upon a cause of death.

CHAPTER FIVE

THE DATA

5.1 Introduction to the Data

Previous chapters have outlined the historical and political context of the data, provided a background to the sites used in the research, and detailed methods relating to how the forensic evidence was collected and analysed. This chapter aims to examine in detail the nature of the primary forensic data including format and content, how it was recorded and stored and how it was amended for the purposes of this research. It will include an in-depth discussion of the methodological problems associated with some of the tables and fields within the original databases, and the problems encountered when attempting to merge the datasets and organise the data into a manageable format that would allow meaningful analysis to be undertaken. Finally it will provide an overview of how these problems were overcome and the fully integrated database was produced, together with a short summary of its capabilities and limitations.

The reason for creating a single integrated database from the primary records was to bring together the data collected by the many different forensic scientists and investigators in a format which could be easily queried. The capacity for the database to be expanded and developed for the purposes of future research was also considered when selecting the fields and tables which would comprise the final integrated database.

For the purposes of clarity throughout this thesis, the names of tables in the final database are presented in Calibri, small capitals, bold, e.g. **PATHOLOGY AND ANTHROPOLOGY** table. The data fields within the tables are presented in Calibri, small capitals, italics, e.g. *CAUSE OF DEATH.*

5.2 Summary of Research Questions and Criteria for Data Selection

The questions for this research which the database was designed to answer can be summarised as follows:

- In what condition were the bodies of the victims, and to what extent did this influence the information that could be retrieved from them?
- How many children died in Kosovo and Bosnia-Herzegovina as a direct result of being injured in the wars and what proportion of all the victims did they represent?
- What were the ages at death and sex of the child victims in both countries, could any trends and patterns be identified in the demographic data, and were there any differences in these between the two countries?
- What were the locations and characteristics of child burial and deposition sites in Kosovo and Bosnia-Herzegovina? Were there differences between and within the two countries? Were there differences in the post-mortem treatment of children and adults?
- What were the causes of death in children, what types of injury patterns were seen and did this vary according to age, sex and geographical location? Did cause of death in children vary from that seen in adults?
- Were there any artefacts associated with the victims which provided evidence of criminal activity and if so, what were the implications of this?
- Were there any artefacts associated with the victims which provided information about their identities and lifestyles and if so, what were the implications of this?
- Did the artefacts found with children differ from those found with adults?
- Does the forensic evidence support witness and anecdotal accounts as presented in NGO reports and literature relating to the wars

Bias in the original data set has been discussed at length in Chapters Three and Four. It is important to point out, however, that whilst the choice of sites may have been pre-determined, it was still possible and necessary to exercise choices regarding which data from those sites were suitable for inclusion in the research. With regard to this it must be emphasised that where tables and fields were removed from the original data sets, it was because the information they contained was surplus to the requirements of this research

and not because it was not useful in itself. Copies of the original databases which include the tables and fields not used in the research were retained, and these tables, or aspects of them, can be added back into the final integrated product should they be required for future studies. It should also be noted that in some cases the data available was recognised as being potentially useful but unusable in its current format. How it was rationalised and transformed into something which could be included in the research is described in detail in this chapter.

The data fields selected were all chosen to address the research questions outlined above. Figures 12 to 14 summarise which data fields and tables were used to address which research questions.

Figure 12: Research questions, tables and data fields relating to age and sex of the victims, and cause of death

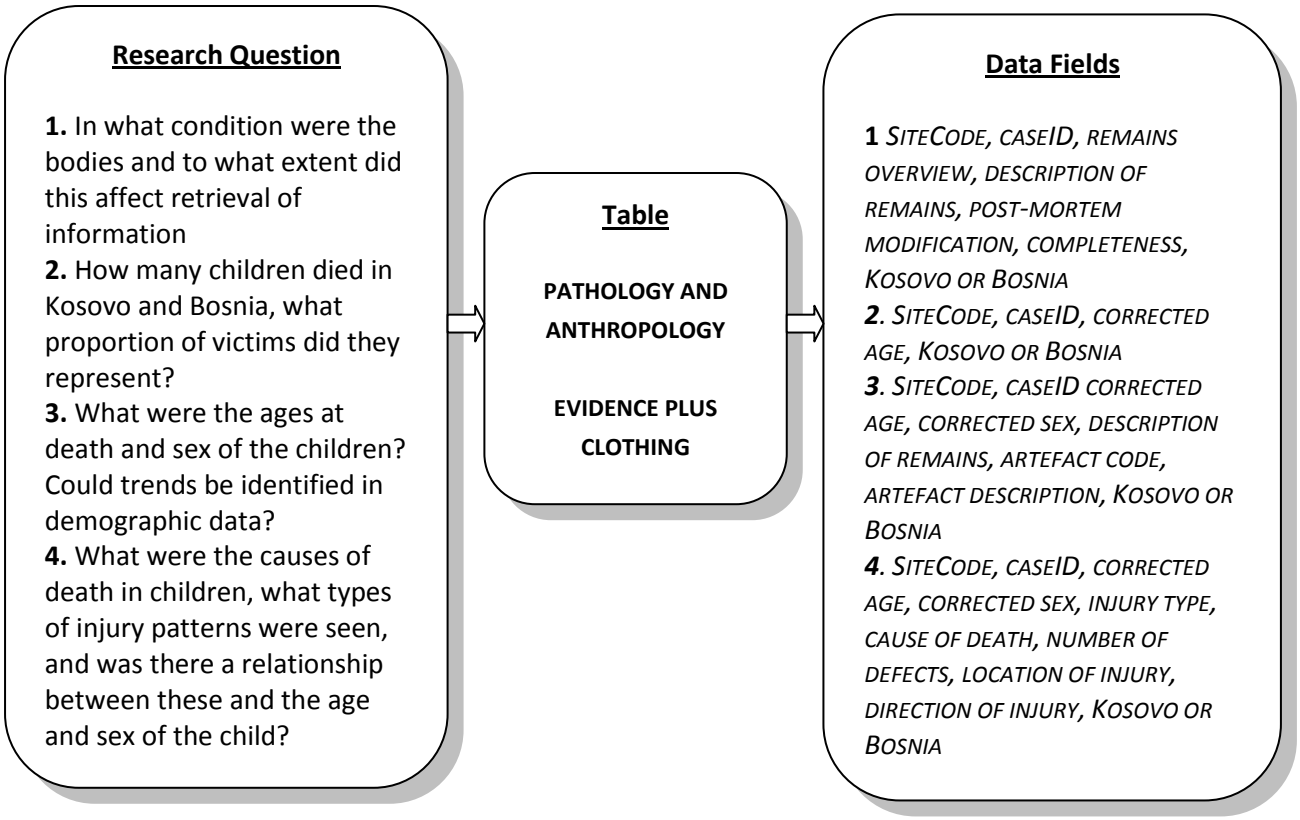


Figure 13: Research questions, tables and data fields relating to age and sex of the victims, cause of death, and location and characteristics of burial and deposition sites

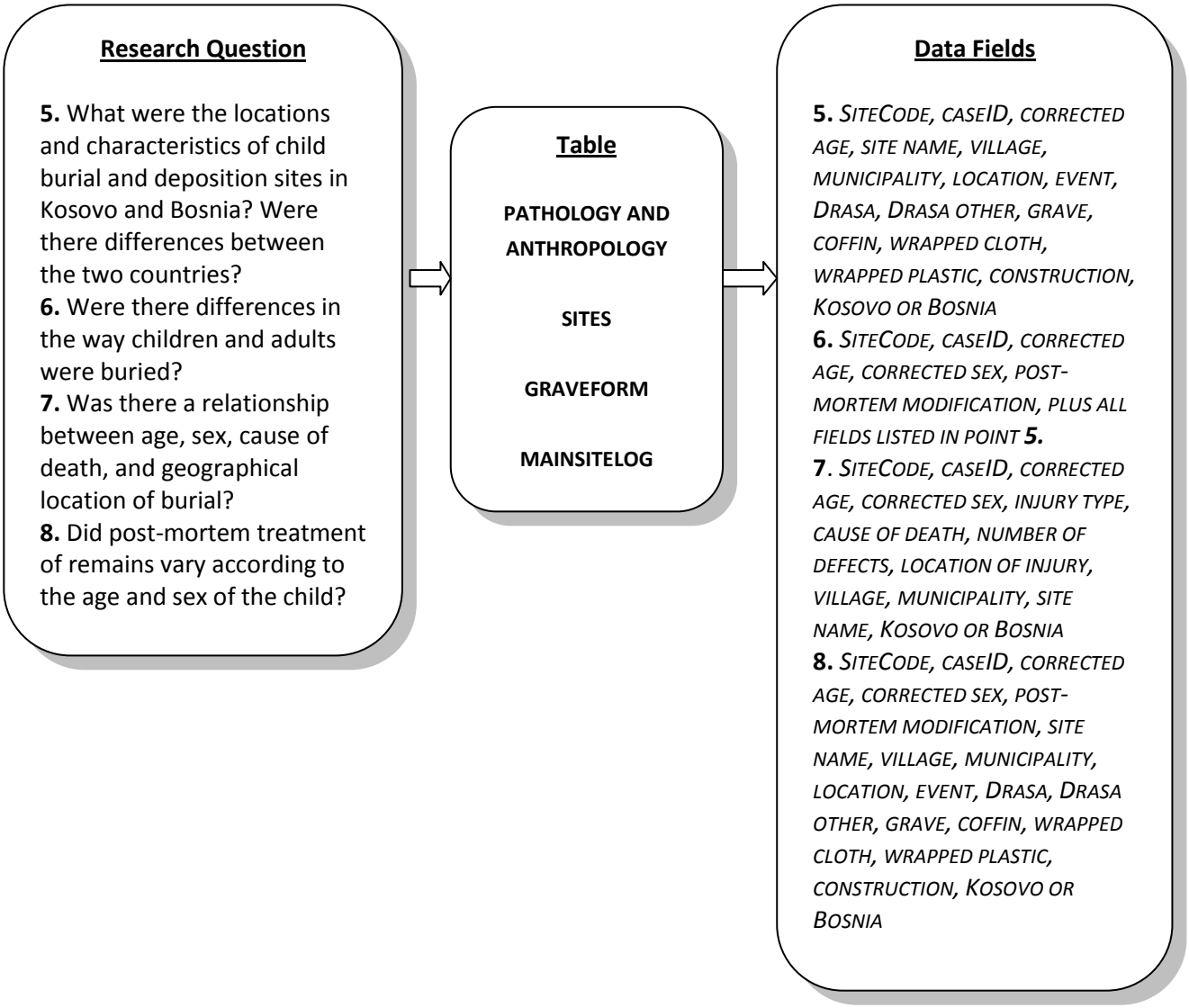
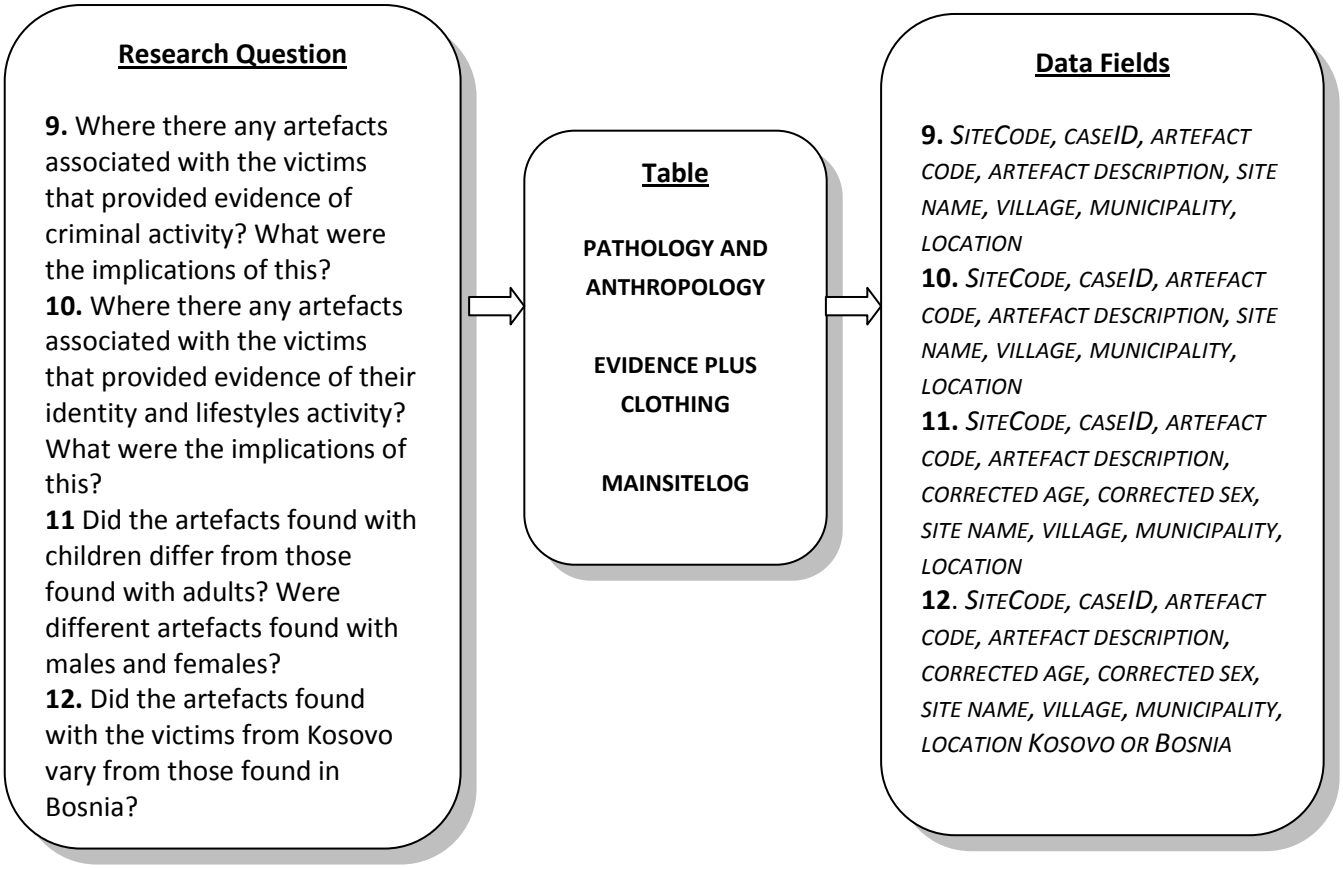


Figure 14: Research questions, tables and data fields relating to artefacts associated with the deceased



It can be seen from the diagrams above that the number of fields chosen varied according to the complexity of the research question being addressed and, generally speaking, the more complex the question and the more factors which needed to be considered, the more data fields were required (this is discussed in more detail in Section 5.3 below). Some of the more basic research questions, such as "How many children died as a direct result of violence in the conflicts in Bosnia-Herzegovina and Kosovo?" utilised just three fields *SITECODE*, *CASEID*, and *CORRECTED AGE*, to produce the records of all those individuals aged less than 15.1 years. A fourth field, *KOSOVO OR BOSNIA* could be added when it came to determining which country a child was from. As the questions became more complex more fields had to be added into the query in order to generate the results required. For example, in order to analyse cause of death and number and location of injuries in children of known sex, in conjunction with the location of their burial and grave type, 11

or 12 fields (depending on whether the remains were in Kosovo or Bosnia-Herzegovina) would have to be utilised in the query: *SITECODE, CASEID*, *CORRECTED AGE*, *CORRECTED SEX*, *CAUSE OF DEATH*, *NUMBER OF DEFECTS*, *LOCATION OF DEFECTS*, *LOCATION OF SITE*, *SITE NAME*, *MUNICIPALITY*, *VILLAGE*, *KOSOVO OR BOSNIA*. If even more detail was desired, extra fields could be added from the **GRAVEFORM** such as *DRASA*, *DRASA OTHER*, *COFFIN*, *GRAVE*, *PIT*, *WRAPPED CLOTH*, *WRAPPED PLASTIC,* and so potentially the number involved in the query could increase to 18 or 19.

5.3 Quality of the Data

The quality of the data relating to child deaths was assessed by examining the criteria and information recorded in each case. This revealed the following:

- 249 (100%) of the cases recorded the age of the child, their nationality and the site name or village from which their bodies were recovered
- 235 (94%) of the cases recorded any clothing and other artefacts associated with the remains, in addition to their age, nationality and burial location
- 180 (72%) cases recorded cause of death. Supplementary to this, the location of injuries was recorded in 176 (98%) of the 180 cases and the number of injuries in 178 (99%) of the 180 cases.
- 108 (43%) cases recorded the sex of the child. This figure excludes those children where tentative sex had been assigned on the basis of associated artefacts and clothing (see Chapter Six, Section 6.3.2). All of these children also had their age, sex, nationality, burial location and associated items recorded. They did not all have a cause of death.
- 93 (37%) cases recorded the sex of the child, their age, nationality, burial location, associated items and cause of death.

The degree of success with which a research question could be answered was obviously dependant both on the question being asked and the amount of information recorded in any given case. It can be seen from the figures above that the number of cases in which the sex of a child was recorded was comparatively low. Thus when this was a required criteria for a query the number of cases which could yield a satisfactory answer to the

question was reduced. This also had the effect of limiting how closely certain patterns could be analysed. For example, cause of death could be determined in 72% of cases but when the question was changed to look at cause of death in children of known sex, in order that any differences between cause of death in males and females could be analysed, the percentage dropped to 37%.

The assessment of the quality of the data relating to children showed that it was possible to determine the numbers of children killed, what proportion of all the victims they represented, their age, nationality, cause of death (including number and location of injuries), the location of their graves or deposition sites, mode of interment, and associated personal effects, in between 70 and 100% of cases. With regard to this the overall quality of the data was good. It was only when the sex of the child was introduced into the query that the quality was compromised. Unfortunately this meant that detailed analysis of sex specific mortuary patterns could be made in only 37% of cases. It was not possible to surmount this problem during the course of this research, but it might be possible to address it in the future based on new information derived from DNA analysis and recent identifications (ICMP, 2008; 2010).

5.4 Content and Format of Primary Forensic Data

The primary data was in a number of different formats which had been created from paper records made at scenes of crime and mortuaries in Kosovo and Bosnia-Herzegovina. The majority of the information obtained from the Evidence Unit in the Office of the Prosecutor (OTP) at The Hague was contained within two electronic databases, one which had been constructed by the OTP and the other by Physicians for Human Rights (PHR). The OTP database contained records from ICTY and *Gratis* teams working in Kosovo and Bosnia-Herzegovina between June 1999 and March 2001. The PHR database contained records from PHR teams and ICTY teams working in Bosnia-Herzegovina between May 1998 and September 2001.

In addition to this, 326 individual autopsy reports in electronic format and numerous summary reports written by chief pathologists, anthropologists, archaeologists and crime scene investigators, were received (Baraybar, 1999; Burton et al, 2000; Canadian Forensic Team, 1999a, 1999b, 1999c; Clark, 2000a, 2001, 2001a; Adams, 1999; Haglund 1998;

Wright, 1999, 2000, 2000a, 2001). These summary reports contained background information about the sites, the work undertaken at the scenes and in the mortuary between 1996 and 2001, some preliminary statistics, and in two cases a further 169 individual records (Adams, 1999; Haglund, 1998) which together with the electronic autopsy reports could be entered into the integrated database (See Section 5.6.4)

The original databases were not designed to be integrated together and their overall structure was extremely problematic. They consisted of large numbers of tables, some of which appeared to be incomplete or redundant. Within those tables, many of the fields had either not been utilised or they contained excessive amounts of free text from which it was difficult to extract the data required. In addition to this multiple entries had been made into single fields, there were errors and inconsistencies within single records, there was duplicated data in many fields and tables, and data in some fields which should rightly have been in other dedicated fields. These problems and how they were rectified is discussed in detail in Section 5.5., which also provides an account of how the multiple datasets were merged.

Figures 15 and 16 are reports exported from the original PHR and OTP databases which show the number of tables and their relationships. It was difficult to generate a report which included the many tables on one page and so the relationships are not entirely clear from the diagrams, it was also not possible to show all the fields contained within each table. The original databases are, however, available for study for the purposes of future research, subject to permission from ICTY. A relationship report for the final integrated database, which illustrates how the final integrated database had been pared down to contain only the information necessary for the research is included in Section 5.7.

Figure 15: PHR relationship report (OTP, 2004)

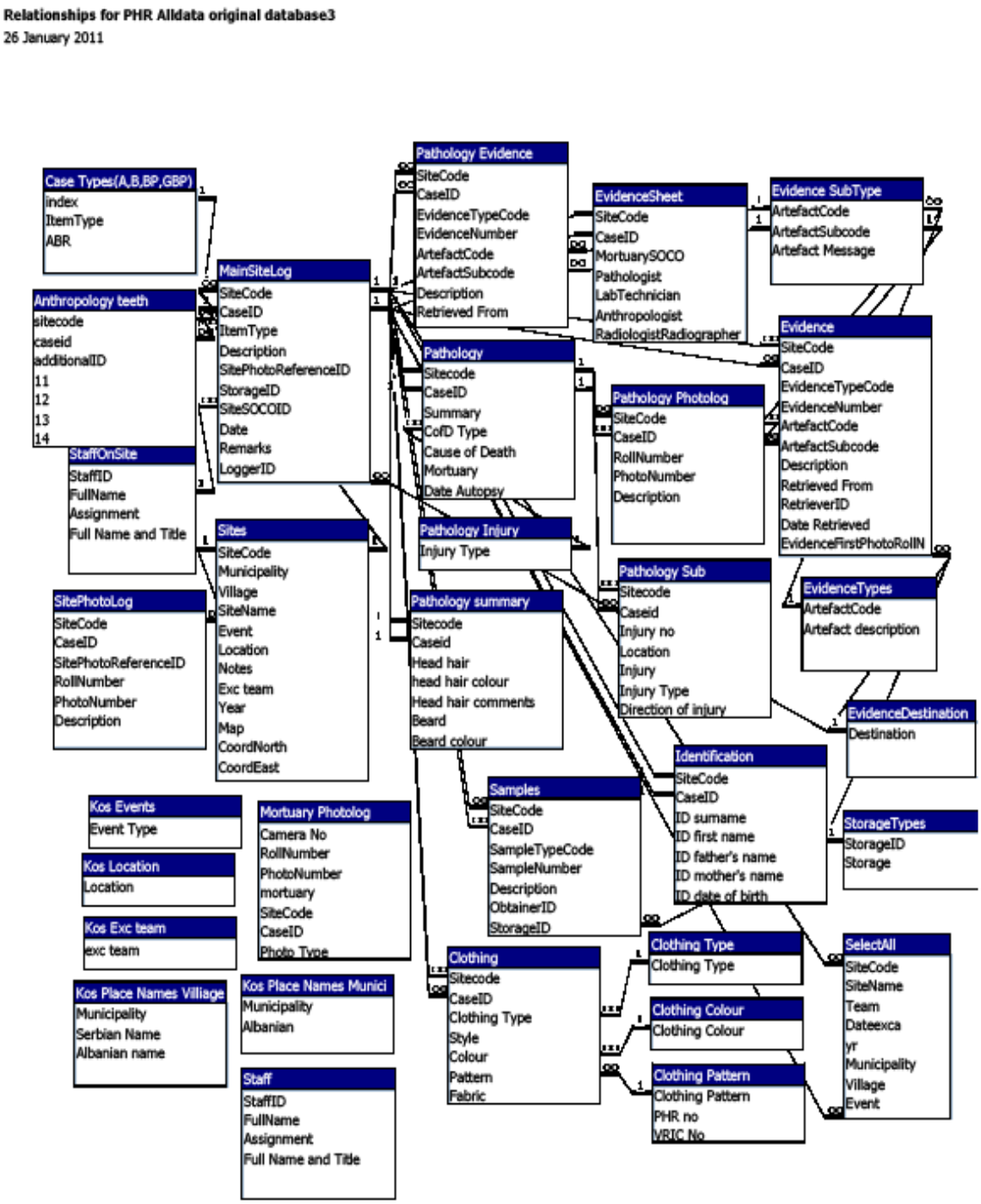
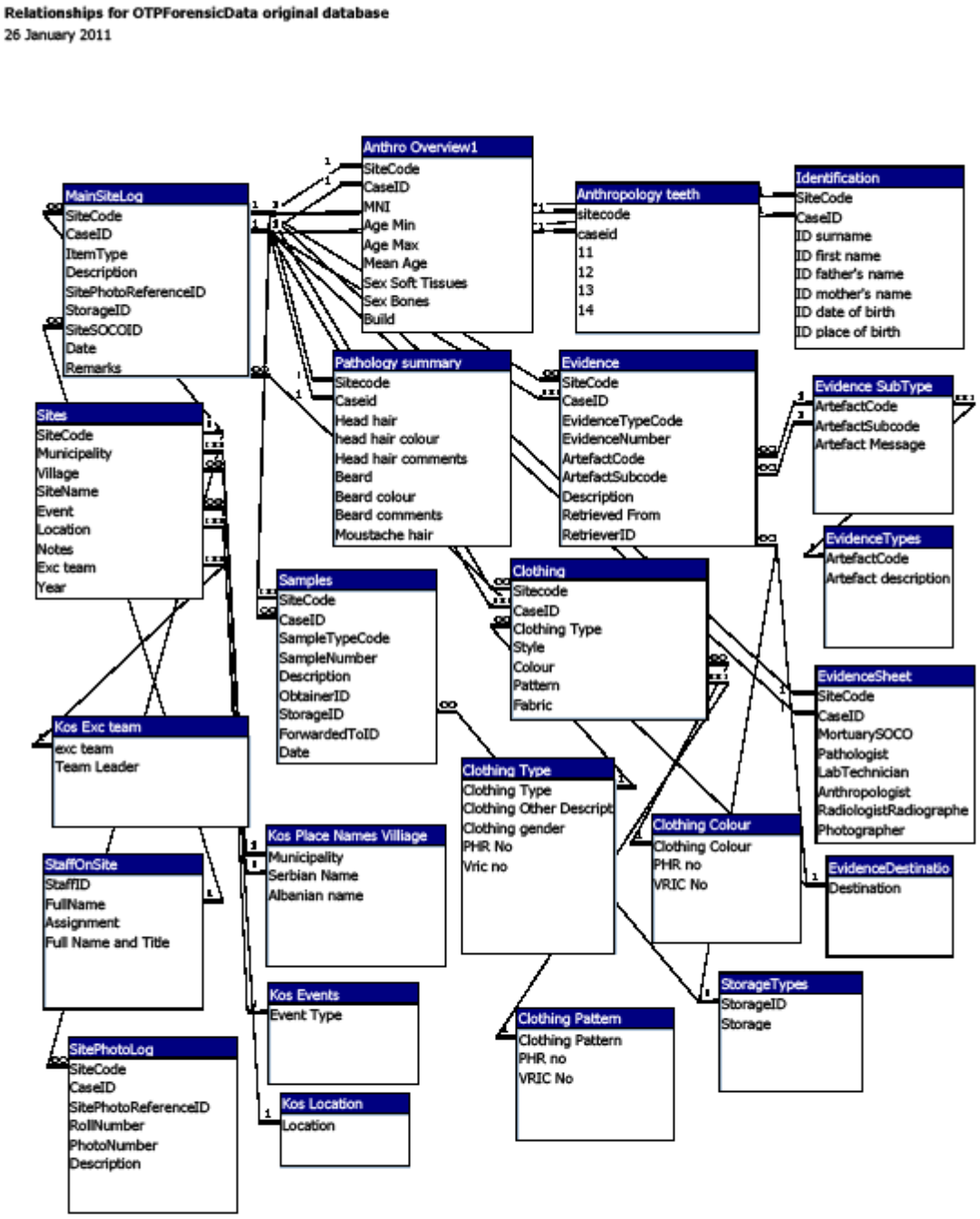


Figure 16: OTP relationship report (OTP, 2004)



5.5. Specific Problems Encountered

5.5.1 Problems Relating to Format

It was clear that the OTP and the PHR databases functioned as working documents and as such they had sufficient capability to record and store information. In their original state they could not, however, be used to review the whole body of evidence recovered and they were not suitable for the purposes of questioning and analysing the data which they stored, or generating any kind of meaningful reports or statistics.

The databases consisted of a large number of tables (see Figures 15 and 16). For example, the original PHR database had over 40 tables in total. Some of these tables appeared to have overly complex relationships whilst others were not linked at all, and many appeared to be incomplete or redundant. This in itself would not have presented a problem if there had been some form of documentation to accompany the database which explained its structure and organisation. Unfortunately this was not the case for the PHR or the OTP database, so a long time had to be spent establishing what the relationships were between tables and in some cases what was their purpose.

The size of the tables in both databases varied. Some were only lookup tables with three or four fields, whilst others, such as **PATHOLOGY** in the PHR database contained up to 65 fields. Some of the tables were very large, for example **ALLANTRODATA 99** which comprised 29,295 records representing individually coded skeletal elements, and 40 fields. All of the larger tables contained fields which displayed infrequent entries, or had not been used at all.

The other major problem with the way in which the data had been stored related to the amount of text within each field, which was in some cases unmanageable. Figure 17 is a typical entry from the *SUMMARY* field in the PHR **PATHOLOGY** table. It consists of 146 words and contains information relating to the condition of the remains, skeletal elements present, minimum numbers of individuals, ages at death, cause of death, and post-mortem damage, all of which had their own dedicated fields which in some cases duplicated or contradicted the information in the free text. In other cases the dedicated fields had been

left blank. In addition to illustrating an excessive amount of text placed within a single field, this excerpt also provides an example of multiple individuals, described in the *SUMMARY,* having been entered as a single case when in fact each individual should have been represented by a separate *CASEID* and *SITECODE*. This problem, which was identified in a number of cases, is explained in more detail in Sections 5.6.2 and 5.6.3.

Figure 17: Sample of Data from the SUMMARY Field in the **PATHOLOGY** *table, PHR Database. SITE CODE GL01, CASEID 17*

Pathology
Summary
A very large collection of bones from at least 6 different people, five of them adult and the other much younger, someone under the age of 17. They comprised of portions of at least 3 skulls, 2 lower jaws, several ribs, vertebrae and other bones from the trunk, many arm and leg bones and a few feet bones. There were a few remnants of clothing mixed in. Many of the bones were fractured, but it was not possible to be sure what caused the damage or whether it occurred before or after death. The one exception was with one of the portions of skull, where there was what appeared to be the edge of a gunshot hole. As there was so much commingling of the remains and so many parts of the bones missing, the cause of death for all of these people should remain undetermined.

This format limited the extent to which the data within individual fields could be queried as supplied and it was recognised that unless it was modified, it would be extremely difficult to extract specific information. In addition to this, the information contained within these large chunks of texts was often duplicated elsewhere in other fields within the same record. Worse still, in some instances it was repeated but with inconsistencies or errors so that as well as having to redistribute the information to the correct fields it had to be established which piece of information was correct. This was sometimes not possible if the primary data was not available.

5.5.2 Errors and Inconsistencies in the Primary Data

Some of the key issues which had to be addressed in order to create the fully functioning final integrated forensic database related to the following:

Minimum Number of Individuals (MNI)

There were over two hundred cases from 23 sites where multiple individuals had been entered as a single record and the number given in the *MNI* field did not match the number given in *DESCRIPTION OF REMAINS*.

The majority of these sites were in Kosovo and included the NATO cemetery, the firing range at Prizren and Mala Krusa in Orahovac. The three exceptions from Bosnia-Herzegovina came from one of the mass graves at Zeleni Jadar, the body deposition site at Ravnice, and a number of the graves from Glogova, although these were for the most part just fragments of bone commingled with whole bodies or body parts.

A typical example of the discrepancies identified, is illustrated by a set of records from "157 Millosh Gillic Street", a site in Djakovica excavated by the FBI *Gratis* team in June 1999 (recorded in the OTP Database). Eleven records (*SITECODES* Milg1 to Milg11) all cited an MNI of 1, but it was evident from the *DESCRIPTION OF REMAINS* that most of the records actually contained various combinations of multiple individuals, such as one adult and three sub-adults (*SITECODE* Milg1, *CASE ID* 1), one adult and one sub-adult (*SITECODE* Milg2, *CASE ID* 1) and a single adult female and a child (*SITECODE* Milg9, *CASE ID* 9). In these examples there was insufficient data within the *DESCRIPTION OF REMAINS* field to isolate the individuals and enter them as separate records.

In some cases, e.g. at the Firing Range in Prizren, where groups of commingled individuals had been described as a single entity, the number, age and sex of each person was given in the *SUMMARY* field, giving the impression that it would have been possible to identify and record them individually. At least where the information was stored in that format it was possible to extract it from the text and re-enter the data as separate records (see section 5.6.3)

Age at Death.

There were numerous errors and inconsistencies observed in relation to the age at death fields, and the excessive number of fields added to the confusion. The more serious discrepancies are described below:

The field properties for the *MINIMUM AGE* and *MAXIMUM AGE* fields in both the OTP and the PHR database showed that they had default settings of 0 and 100. The *MEAN AGE* field, however, which could reasonably have been expected to relate to the minimum and maximum ages, often seemed to bear no relationship to them in the OTP database. For example, a large number of records which had a minimum age of 0 and a maximum age of 100, showed a mean of 0 (which was not a default setting), whereas in other cases the mean was given as 46, 22, 69, 15, or one of many other single value ages. There were records where it could be seen that this mistake had occurred because an age had been given to an identified individual by a family member and it had been erroneously entered into the *MEAN AGE* field, but there were other cases where the cause of the problem could not be determined. The PHR database did not utilise the *MEAN AGE* field at all.

In some cases there were differences between the age given in the *MEAN AGE* field and that described in the text in *DESCRIPTION OF REMAINS*. An example of this was identified in *CASEID* 1, *SITECODE* Milg6, the site at Millosh Gillic Street in Djakovica. In this instance the MNI was correct, but the individual had been assigned a minimum age of 0, a maximum age of 100 and a mean age of 14 years, whilst being described as "approx. age 2-3 years" in the *DESCRIPTION OF REMAINS* field. Where there were so many discrepancies within one record, it was difficult to identify and rectify the problem, particularly if the full autopsy report was not available for reference.

Further problems included ages that were given in descriptive terms, such as 'adult', 'juvenile' and 'young adult', rather than as a numerical range or value, and age ranges which were excessively wide. The use of descriptive terminology was not a widespread problem, but it was one which had to be corrected in order that the records could be included in the analysis of age specific mortality patterns. The reasons why wide age ranges are likely to have been adopted were discussed in Chapter 4, Section 4.2. Where these existed, an assessment of the probable accuracy of the data had to be made and where possible a corrected value was produced (see section 5.6.3).

Sex

Information relating to the sex of the deceased was relatively unproblematic with the exception of 266 entries in the original PHR and OTP databases. The sex of these individuals had been recorded as either "X" or "Y" in the *SEX BONES* field, instead of "F" or "M". This was a strange and inconsistent thing to do, as all other entries relating to the sex of the deceased in the PHR and OTP tables used the letters "F" or "M" to denote biological sex. The letter U was also used, presumably to indicate unknown sex, and the letter "D", the meaning of which remains a mystery.

The *SEX* field in the British Forensic Team database created as part of the merger process had been populated with "Male", "Female", "M", "F" or "Unknown", so these entries had to be made compatible with the OTP and PHR data. How this was done, together with how the "X", "Y" and "D" entries were corrected, is described in section 5.6.1.

Data in the Wrong Tables and Fields

The **EVIDENCE** tables in both the PHR and the OTP database were found to contain records of clothing, which should have been entered into the **CLOTHING** tables. There were also errors in the **GRAVEFORM** relating to the *WRAPPED PLASTIC* and *WRAPPED CLOTH* fields which provided additional information about what (if anything) the body was wrapped in prior to burial. In some instances this information was either in the wrong field, or it had not been entered into any field and could be found only in the summary text. These inconsistencies and errors were relatively minor but they could potentially have had an impact on the conclusions relating to post-mortem treatment of remains. A description of how they were corrected can be found in Section 5.6.2.

5.5.3 Omissions

The omission of entire datasets from sites such as Liplje and Brnice Dam has been discussed in Chapter Three, so it is not the intention to repeat it here. It does merit further consideration in this chapter however, as it was possible to rectify some of the omissions, where the primary data was available in the form of individual autopsy reports, or

included as individual records within summary site reports. How this data was transferred into the final integrated database is described in Section 5.6.4.

A brief mention should also be given here to omissions of data within individual fields. In some cases, for example, where a *SITECODE* or *CASEID* was missing this presented a serious problem. In other cases where fields such as *MEAN AGE* or *POST-MORTEM MODIFICATION* were empty (sometimes because they had been created as part of the merger process) this was less of a problem and the field could be populated by extracting information from the large blocks of text in *DESCRIPTION OF REMAINS* (see section 5.6.2). It is important to understand, however, that the ability to correct any omissions, whether large or small, was governed by the availability of primary data.

5.6. Integration of Datasets and Correction of Errors

The process of integrating the datasets and correcting errors was a long and drawn-out one, and it is not an exaggeration to say that it would have been far easier to have created an entirely new database from scratch had all the primary data been available. The databases had already been designed, however, and the data recorded to varying standards. The challenge, therefore, was to modify and adapt what had already been created, retaining the good features and discarding the elements which did not meet the criteria for the research.

According to the Microsoft Office Access 2007 training manual, an Access database should be created using the "seven stages of database design", that is:

1. Identify database purpose
2. Review existing data
3. Determine fields
4. Group fields into tables
5. Review for maintenance problems and revise
6. Designate primary and foreign keys
7. Establish table relationships

(*Microsoft® Office Access™*, 2007: 35)

Despite the fact that the databases had already been designed and contained large amounts of information, it was still possible to follow these stages although it was necessary to revisit Stage 5 on many occasions as unforeseen problems with the data continued to crop up throughout the course of the research.

Before entering into a detailed description of how the final integrated database was produced it is important to mention another very important part of the process not included in the "seven stages of database design" (*ibid*), that is, the 'back-up' stages. Back-ups were repeatedly created throughout the construction of the database. Work was always undertaken on a copy of the database and each time a major change was made, a new copy was started. This resulted in a considerable number of versions of the integrated database which reflect the different stages in the history of its construction. In addition to this, the original copies of the OTP and the PHR databases, provided by the Head of the Evidence unit in the Office of the Prosecutor for ICTY, were retained.

Another key principle which was adhered to rigidly was that the original data inputted by ICTY or PHR staff was never altered. During and after the merging of the datasets new replacement tables were created and where amendments to the data were made, new fields such as *ACTUAL MNI*, *CORRECTED AGE*, and *CORRECTED SEX* were always created. By doing this it was always possible to return to the original data and to identify and correct any errors.

5.6.1 Merging The Data

Prior to merging the OTP and PHR databases an interim British Forensic Team (BFT) database was created in Excel. This was done because it was identified in the early stages of the research that not all of the data recorded by the British Forensic Team in 1999 had been entered into the OTP database. The additional information used to create the Excel database was taken from primary anthropology and pathology reports provided by SO13 (now SO15), the Counter Terrorist Branch of the Metropolitan Police, who provided the police support for the British *Gratis* team in 1999. The BFT database was in a simple format with spreadsheets for **SITE INFORMATION, INTELLIGENCE, EXHUMATION, ANTHROPOLOGY** and **PATHOLOGY**. An attempt was made to keep the fields within the spreadsheets consistent with the fields in the corresponding tables from the OTP and PHR

databases in order to minimise the chance of errors when the data was transferred from Excel into Access. Before describing how this was achieved there follows a discussion of how the PHR and OTP databases were merged.

It was decided that the PHR rather than the OTP database would form the basis for the final integrated forensic database, and the data from the OTP database would be imported and merged into the PHR database, rather than the other way round. This decision was made because although the PHR database consisted of more tables than the OTP, those tables were generally more concise and contained fewer fields which were not relevant to the research.

Prior to merging the OTP and PHR databases it was necessary to review the tables and fields in the PHR database and to modify them so that only the information relevant to the research was included in the final integrated product. Examples of some of the tables retained and discarded are shown in Tables 7 and 8, as a means of illustrating the thought process behind the streamlining of the data. This is by no means an exhaustive list and some of the tables initially retained were subsequently removed in the final review of the database.

Table 7: Examples of tables from original PHR database which were retained

Examples of Tables Retained	Reason for table being retained
SITES	Contained fewer records than **MAINSITELOG** but some information, e.g. location of burial and excavation team which was not included in **MAINSITELOG**
MAINSITELOG	Contained key information about the location of the sites
PATHOLOGY AND PATHOLOGY SUB-TABLES	Contained information about cause of death and injury types
CLOTHING	Listed and described clothing associated with deceased
EVIDENCE AND EVIDENCE TYPES	Listed all evidence associated with deceased and definitions of artefact codes
GRAVEFORM	Contained detailed supplementary information relating to some of the burials in Kosovo, e.g. whether remains were buried in coffins, wrapped in blankets etc
ANTHRO SUMMARY	Contained some useful information relating to stature and item types, and detailed information on estimation of age

Table 8: Examples of tables in original PHR database which were discarded

Examples of tables discarded	Reason for table being discarded
STAFF ON SITE	Information not required for research
ANTHRO HAIR	Relevant for identification but not for this research
ANTHROPOLOGY TEETH	Relevant for identification but not for this research
ANTHRO OVERVIEW1	Contained only four records which were repeated elsewhere
MORTUARY PHOTO LOG	Relevant for continuity of evidence but not for this research
PATHOLOGY PHOTO LOG	Relevant for continuity of evidence but not for this research
SITE PHOTO LOG	Relevant for continuity of evidence but not for this research
VRIC EVIDENCE	Supplementary information not required for this research
STORAGE TYPES	Relevant for continuity of evidence but not for this research
EVIDENCE DESTINATION	Relevant for continuity of evidence but not for this research
CLOTHING TYPE / PATTERN / COLOUR	Information contained in main **CLOTHING** table which was retained

In addition to removing tables and fields which were not required in the PHR database, it was also necessary to delete fields which were not required in the corresponding OTP tables which were going to be imported. The aims of this were to remove any irrelevant material whilst retaining equivalent material, even if held in fields of different names, and to ensure that the tables in the two separate databases were as broadly equivalent as possible. Tables 9 and 10 provide examples of two tables in which the fields were reduced and they include the rationale for retaining or deleting data fields.

Table 9: Examples of fields retained in two OTP tables prior to the data being imported into PHR database

Table	Fields Retained	Reason for retaining fields
MAINSITELOG	*SITECODE, CASEID, ITEM TYPE, DESCRIPTION, DATE, REMARKS, CLOTHES, COORD NORTH, COORD EAST, LOCATION*	*SITECODE* and *CASEID* were designated primary keys and therefore had to be retained in all tables. , *ITEM TYPE* enabled bodies and body parts to be distinguished from other evidence types. Other fields provided details relating to the appearance and condition of the remains, and burial location
EVIDENCE	*SITE CODE, CASE ID, EVIDENCE TYPE CODE / NUMBER, ARTEFACT CODE / SUB-CODE, DESCRIPTION, RETRIEVED FROM*	*SITECODE* and *CASEID* were designated primary keys and therefore had to be retained in all tables. Evidence types and artefact codes enabled these evidence types to be queried. Other fields contained information describing what the artefacts were and how closely they were associated with the bodies

Table 10: Examples of fields deleted in two OTP tables prior to the data being imported into PHR database

Table	Fields Deleted	Reason for deleting fields
MAINSITELOG	Site photo ref., storage ID, site SOCO ID, logger ID, excavator find, photographer, clothes destination, clothes digital, work needed, transfer, hold for transfer	These fields were necessary either for continuity or as an *aide memoire* whilst fieldwork was in progress. They document the transfer and storage of evidence but knowledge of this was not necessary for the research
EVIDENCE	Evidence 1st photo roll no., evidence 1st photo no., evidence other photo refs, photographer, storage ID, destination, ID used, store location, store date in, store date out, comments	As above

The selection and deletion of tables and fields described above was part of an overall mapping process whereby an attempt was made to match the two databases as closely as possible. This involved ensuring that the field names in the tables from different databases were the same, and that there were no duplicate field names within the same tables. If the field names in different tables did not match exactly but the field content was the same or similar, the names of the fields which were being imported were changed in the new copy, leaving the original unaltered.

Before the data was imported from the OTP into the PHR database, the fields were reviewed to ensure that they were organised into appropriate groups within the correct tables, i.e. that they all related to the same subject matter, and that the OTP fields were in the same order as the PHR fields.

In order to prevent the duplication of any records, the *SITECODE* and *CASEID* were designated as primary keys. The OTP tables were then imported into the modified version of the the PHR database and action queries were run to merge the data.

As a safe-guard so that the source of the data could be re-located if necessary, a field was added entitled *ORIGINAL TABLE* which showed which table and which database each of the records had originally come from and was automatically populated during the merger process.

The process for importing and merging the data from the BFT Excel database into the newly merged OTP and PHR combined Access database was similar, although more corrections to the tables were required and a number of interim stages had to be introduced. New BFT tables were created in which some fields had to be changed from date or numeric format into text, duplicate columns were removed, and some of the fields were re-named to make them compatible with the combined database. The **ANTHROPOLOGY** and **PATHOLOGY** tables were also linked prior to the merger. The mapping process is demonstrated below in Table 11 which illustrates how the **MAINSITELOG** Table from the combined OTP/PHR database and the equivalent **SITE INFO** spreadsheet from the BFT database were matched up so that they could be merged.

Table 11: Equivalent fields in combined database and BFT database

OTP/PHR Combined Database		BFT Database
MAINSITELOG	=	**SITE INFO**
SITE CODE	=	*SITE CODE*
CASE ID	=	*CASE ID*
ITEM TYPE	=	No Field.
DESCRIPTION	=	No Field (Data from *WHO BURIED REMAINS* could be placed here)
DATE	=	No Field (Data is contained in BFT **INTELLIGENCE** table in *DATE REMAINS RECOVERED* field)
COORD NORTH	=	*COORD NORTH*
COORD EAST	=	*COORD EAST*
LOCATION DETS	=	*LOCATION*
No Field	=	*SITE NAME*
No Field	=	*MUNICIPALITY*
No Field	=	*VILLAGE*

New fields were also created within the combined database tables as a result of this process, for e.g. *SITE NAME*, *MUNICIPALITY* and *VILLAGE*, were imported into the **MAINSITELOG** table from the BFT **SITE INFO** table, which subsequently proved to be very useful when analysing the data.

After the BFT fields and tables had been modified, the key tables in the OTP/PHR merged database were copied and given the prefix "New", so that core of the database comprised **NEWPATHOLOGY, NEWANTHROPOLOGY, NEWMAINSITELOG**, **NEWGRAVEFORM, NEWEVIDENCE** and **NEWCLOTHING**. Back-ups were made of all these tables. All the validation rules and indexes were removed from the new tables so that it would be possible to append the BFT tables to them and to merge the data. When this process was complete the old tables were deleted, and the new tables were re-named as follows:

- **PATHOLOGY AND ANTHROPOLOGY**
- **MAINSITELOG,**
- **CLOTHING**
- **EVIDENCE**
- **GRAVEFORM.**

A number of minor problems were encountered during the process of merging the data, such as the identification of a small number of duplicate cases, but it was possible to rectify these manually once the extent of the problem had been established. Once the merger of all the databases was complete the *SITECODE* and *CASEID* were re-established as the primary keys, and a further assessment could be made regarding whether all the tables and fields were required and the data was in a suitable format to be queried.

5.6.2 Editing the Integrated Database

It was apparent from both the preliminary review of the individual databases and the review following their merger, that the large amounts of text in some fields and the omissions in others would present problems when it came to analysing the data. It was clear also that the data were not always in the correct field (see Sections 5.5.1 and 5.5.2). Specifically, this meant undertaking a detailed review of the 6,217 records in the **PATHOLOGY AND ANTHROPOLOGY** table, the 11, 593 records in the **CLOTHING** table, the 14,727 records in the **EVIDENCE** table, and the 1,949 records in the **GRAVEFORM,** and re-assigning the data to the appropriate fields where necessary.

In order to facilitate this tedious task, three forms were created which were linked to the main tables by their primary keys, the *SITECODE* and *CASEID*. The structure of the forms was such that the information was automatically updated in the relevant table.

i) Editing **PATHOLOGY AND ANTHROPOLOGY** *SUMMARY:*

This form displayed the large chunk of text in the *SUMMARY* field and provided blank fields into which specific pieces of data, copied from the *SUMMARY*, could be entered. These new fields were chosen on the basis that they could contain key pieces of information, relevant to the research questions, which related to cause of death and post-mortem treatment of the remains. As they were designed to accommodate only a limited number of characters the data could be stored in a short and manageable format which could easily be incorporated into queries.

The empty data fields included *INJURY TYPE, CAUSE OF DEATH, NUMBER OF DEFECTS, LOCATION OF DEFECTS, DIRECTION OF INJURY, REMAINS OVERVIEW, COMPLETENESS, PM MODIFICATION DELIBERATE* and *PM MODIFICATION INCIDENTAL*. The latter two fields were subsequently merged into a single field *PM MODIFICATION*, because of the difficulties encountered when trying to determine whether modification was deliberate or not.

ii) Editing **CLOTHING** and **EVIDENCE**

This form allowed the **CLOTHING** table and the **EVIDENCE** table to be seen side by side, together with each related record. The records could be scrolled through simultaneously and from this view it could be seen whether any clothing had been entered into the **EVIDENCE** table or any evidence into the **CLOTHING** table by mistake. If mistakes were identified it was possible to delete or add records into either of the tables via the form. Ultimately, in addition to the separate **CLOTHING** and **EVIDENCE** tables, a combined **EVIDENCE PLUS CLOTHING** table was created which combined the two datasets (see Section 5.7.3).

iii) **PATHOLOGY AND ANTHROPOLOGY** with **GRAVEFORM**

This form displayed the fields *DRASA*, *WRAPPED CLOTH* and *WRAPPED PLASTIC* from the **GRAVEFORM,** together with the *SUMMARY* and *DESCRIPTION OF REMAINS* fields from the **PATHOLOGY AND ANTHROPOLOGY** table. This was designed so that any discrepancies between the information given in the *SUMMARY* or the *DESCRIPTION OF REMAINS* and the information recorded in the fields from the **GRAVEFORM** could be seen. It also provided an opportunity for any omissions to be corrected if data was present in the *SUMMARY* text, but not in the appropriate fields in the **GRAVEFORM.**

This editing process was a long and drawn out one although the use of the forms made it more time efficient. Once it had been completed it could be stated with confidence that the data were in the correct fields, that the structure and content of the fields were sufficiently robust to allow analysis without any important information being missed, and that any outstanding errors previously identified could be corrected.

5.6.3 Correction of Errors

Errors were generally rectified by setting up an appropriate query to identify the extent of the problem, and then producing an additional field into which the corrected data could be entered. Using a query in this way meant that data could be corrected or added with the underlying table being updated automatically. The original fields containing the data which had been corrected were not deleted or tampered with so that the primary data could still be seen.

Minimum Number of Individuals (MNI)

Where multiple individuals had been entered as single records and the *MNI* field did not reflect the true number of individuals present, this data had to be reviewed. It was decided that the best way to locate all the errors of this type would be to make a comparison of the *MNI* field with the *COMPLETENESS* field in the **PATHOLOGY AND ANTHROPOLOGY** table, as

data relating to *MNI* had been entered into this field during the editing process. A query was run for searching for the phrase "MNI" in the *COMPLETENESS* field and this produced a total number of 217 records. An *ACTUAL MNI* field was created in the database, the existing MNI data was transferred across into it and then the changes required (which had been identified through the query) were made manually directly into the *ACTUAL MNI* field.

Where sufficient information was provided about the commingled individuals, it was possible to split the multiple cases, assign each individual a new *CASEID* and then to add them into the database as new records. This could be done using the "New Data Entry" forms designed for inputting the additional information from electronic autopsy reports (see section 5.6.4)

Age at Death

There were two fundamental problems relating to age at death in the primary data:

i) The errors and discrepancies described in Section 5.5.2
ii) The fact that in a number of cases, ages were recorded as ranges, as a "greater than" age such as 50+ years, or using descriptive terminology.

Recording ages as a range, or as an open ended value in older individuals is actually good practice in Forensic Anthropology terms, but for the purposes of this research in order that the data could be analysed using Access database tools, a single value was required.

A series of three queries were used to identify and correct the problems relating to age at death:

First, a query was created which showed the *AGE AT DEATH* field where the entries were not null. This provided a list of ages in different formats which could be converted into a single value (see below), and transcribed directly into a newly created *CORRECTED AGE* field in the **PATHOLOGY AND ANTHROPOLOGY** table. Secondly, a query was set up which identified age ranges or values in the *DESCRIPTION OF REMAINS* field. As with the query relating to *AGE AT DEATH*, this produced a list of ages in various formats.

Following on from the results of the two queries described above, where an age range was present the mean was taken as the *CORRECTED AGE* and where a symbol was used, such as 50+ or ± 50, just the numerical value was taken (in this example it would be 50 years). Where there were single values which did not resemble a mean they were retained as a *CORRECTED AGE* on the assumption that it was provided by someone who knew the deceased. Where no information was provided regarding age at death the *CORRECTED AGE* field was left blank. This left only the ages which were expressed as text, (such as "adult", "juvenile", "young" or "elderly adult"), to deal with. Fortunately these were an infrequent occurrence.

Because of the variations in terminology used by different anthropologists to describe individuals who fall within certain age ranges (see Chapter 4, Section 4.2.4), there was no one standard which could be referred to in order to assign a mean age to these descriptive terms. As such, new criteria were created and applied which are described below. It is acknowledged that these are based on assumptions and in some cases they are subjective, but an attempt was made to place them within the context of the research. These arbitrary subdivisions were made for pragmatic reasons and it is accepted that there may have been alternative, perhaps more consistent methods of choice, which might have been used to establish a single value age, rather than a combination of means and borderlines.

- Where the term "adult" was used, the corrected age given was 30 years, based on the assumption that skeletal and dental development was complete. This term was identified in 51 records.
- If an adult was referred to as "elderly" the age value 65 was assigned, based on the distinction made in the Census data from Bosnia-Herzegovinia and Kosovo (see Chapter 2, Section 2.2). This term was identified in two records.
- Where the term "Young Adult" was used, the mean of 18 to 30 years was given and the age of 24 was assigned. This occurred on four occasions
- If an individual was described as an adolescent or juvenile, the mean of 12 to 18 years was taken and an age of 15 years was assigned. Both these terms were used only once each
- It was not necessary to produce a value for the term "child" as it was always associated with an age range, or an assigned age.

The final correction to the age at death data was made following a second correction to the minimum numbers of individuals. As a result of this it was realised that because some of the records had been split into further cases there were additional individuals of known age who had not been assigned a corrected age. This was rectified by creating an "Amending Corrected Age" query which identified those in the *AGE AT DEATH* field with a corrected age of zero. Where additional information relating to these individuals had become available, this could be entered directly into the *CORRECTED AGE* field in the *PATHOLOGY AND ANTHROPOLOGY* table.

Sex

In the light of the many other errors identified in the original database, it was decided it should not be assumed that the seemingly random Xs and Ys entered into the *SEX BONES* field equalled female and male respectively. A query was therefore run so that the X, Y, and D entries could be compared against the *DESCRIPTION OF REMAINS* field. A *CORRECTED SEX* field was added to the **PATHOLOGY AND ANTHROPOLOGY** table, and any information relating to the sex of the deceased found in the description field was entered into it. If it was not made explicit in the text whether the individual was male or female or, based on professional experience the judgement seemed dubious (for example, if sex was based on the length of an ulna), the *CORRECTED SEX* was recorded as unknown.

It was interesting to note that whilst the X and Y entries did, for the most part represent females and males, the letter D represented both males and females at a ratio of approximately 3:1 (quite high given the total number of females in the sample). The individuals were from a wide range of sites, although all were in Kosovo, and it was still not possible to tell from the descriptive text what the letter D might stand for. Unfortunately this meant that sex remained undetermined in those who had been assigned a letter "D".

5.6.4 Inputting the Additional Data from the Autopsy and Summary Reports

When it was concluded that the database was complete and that all the corrections required had been made, a final review of all the data received from the Evidence Unit was undertaken. During this process it was discovered that many of the autopsy reports which had been received in electronic format from the OTP, had not been included in either the OTP or the PHR databases and therefore they were not in the final integrated product either. It also became apparent that two of the summary reports, one relating to the site at Cerska, Bosnia-Herzegovina, (Haglund, 1998) and one to Verbotza, Kosovo (Adams, 1999), contained individual records, which provided information about the age, sex and cause of death of the deceased, that were also not present in the original databases.

Most of the autopsy documents comprised a single report on the post-mortem examination of a single individual. There were, however, a small number of documents which consisted of multiple autopsy reports. The largest of these was the document which comprised 137 individual reports from the site at Pilica / Branjevo Military Farm, a mass grave in Bosnia-Herzegovina. Another document contained 20 individual autopsy reports on the remains from the mass grave at Cerska, Bosnia-Herzegovina, and a further 131 records from the same site were found in one of the summary reports (Haglund 1998).

The total number of individual autopsy reports which had to be reviewed was 326, of which 201 had to be transcribed into the database. The 131 records from the Cerska summary report and 15 records from the site at Verbotza, Kosovo also had to be added bringing the total number of new records which were not previously in the database to 347.

It was clear that whilst the data described above would be a valuable addition to the database, it would also be a very time consuming process to enter it into the correct fields and tables individually. A form was therefore created which facilitated the uploading of key information from the autopsy and summary reports into the relevant fields in the relevant tables within the database.

The first stage in doing this was to identify what information was important, and the appropriate fields within the existing tables into which it could be entered. Based on the aims of the research the following 'key' fields were identified:

- **MAINSITELOG**:

  SITE CODE and *CASE ID* (present as primary keys in all three tables), *SITE NAME, MUNICIPALITY, VILLAGE, DATE* (of excavation), *COORD EAST, COORD NORTH, ITEM TYPE, DESCRIPTION* and *LOCATION*.

- **PATHOLOGY AND ANTHROPOLOGY**:

  DATE OF AUTOPSY, DESCRIPTION OF REMAINS, COMPLETENESS, MNI, ACTUAL MNI, CAUSE OF DEATH, INJURY TYPE, NUMBER OF DEFECTS, LOCATION OF DEFECTS, DIRECTION OF INJURY, PM MODIFICATION, SEX, AGE MIN, AGE MAX, MEAN AGE, CORRECTED AGE, BUILD, HEIGHT ANTHROPOLOGICAL, TEETH GEN DESCRIPTION, TATTOOS, SCARS, PRE-EXISTING PATHOLOGY, OTHER FEATURES.

- **EVIDENCE PLUS CLOTHING:**

  ARTEFACT CODE, ARTEFACT SUB-CODE, DESCRIPTION, RETRIEVED FROM, DATE RETRIEVED

The form was constructed using **MAINSITELOG**, with **PATHOLOGY AND ANTHROPOLOGY**, and **EVIDENCE PLUS CLOTHING** as sub-forms. The **GRAVEFORM** was not included in this design because the autopsy reports and summary records did not contain any details relating to the burial context of the remains other than the location of the site and whether they had come from single or mass graves - information which was already included in the **MAINSITELOG.**

Constructing this form revealed a new problem: that most of the existing tables violated the rules of referential integrity, and that this problem had been carried over into the final merged database. In real terms this meant that relationships could not be set up between the tables and hence they could not be linked. For example, attempting to establish a relationship between the **MAINSITELOG** and **PATHOLOGY AND ANTHROPOLOGY** tables failed because there were records which appeared in **PATHOLOGY AND ANTHROPOLOGY** that did not appear in the **MAINSITELOG.** Similarly there were **SITECODES** which had records in the

EVIDENCE PLUS CLOTHING and **MAINSITELOG** tables, which did not appear in the **PATHOLOGY AND ANTHROPOLOGY** table.

Queries were run to identify records which were present in **PATHOLOGY AND ANTHROPOLOGY** which did not have equivalents in **MAINSITELOG**, and records which were present in **EVIDENCE PLUS CLOTHING** which didn't appear in **PATHOLOGY AND ANTHROPOLOGY**. A total of 38 problematic records were identified, which were reviewed individually. In most cases the problem had been caused by incorrect or inconsistent entry of the *SITECODE* and *CaseID* and this was easily rectified by manually amending each record.

In addition to this there were a large number of cases in the **PATHOLOGY AND ANTHROPOLOGY** and **MAINSITELOG** tables which did not appear in the **SITES** table. It was eventually decided that as the **MAINSITELOG** contained by far the most records and the widest range of information, **SITES** contained a number of fields which had not been utilised, and the two tables already shared several fields, they would be merged under the name of **MAINSITELOG**. As the **SITES** table contained some fields with relevant information which **MAINSITELOG** did not have, these fields were copied over as part of the process of merging the two tables.

Once the problems described above had been rectified it was possible for the tables in the database to be linked and for the newly created form entitled "New Data Entry" to be linked to the tables. The **EVIDENCE PLUS CLOTHING** sub-form allowed multiple entries to be made per record so that if an individual had clothing, personal effects and forensic evidence associated with them, these would all be automatically linked to the same *SITECODE* and *CASEID.*

Finally it should be noted that it was often not possible to complete all the fields in the three sub-forms as this depended on the level of detail present in the original report. All of the additional records did, however, fulfil sufficient information to answer the basic

criteria as outlined in section 5.2., and most provided the additional information necessary for in-depth analysis of the data.

5.7. The End Product

From all the primary evidence which had been collected, recorded, streamlined and corrected, four key areas of information were identified which related to:

- The sites from which the evidence was recovered
- The biological profile of the deceased and cause of death
- The clothing and personal possessions of the deceased plus associated forensic evidence
- The post-mortem fate of the deceased and disposal of their remains.

These groups of information formed the core of the new database as linked tables with full referential integrity. They are described in more detail below:

5.7.1 The Sites from which the Evidence was Recovered

Information relating to the sites and cases themselves is contained primarily within the **MAINSITELOG** Table (number of records = 14,039). It includes details of the location of the burial site; the site name, village, municipality if applicable, and in some cases the geographical coordinates. The location of the remains within the site is also described, for example, in a grave, lying on the ground surface in a village compound, or on a dirt track.

A description field includes various data either relating to the remains themselves or the burial method, and a remarks field sometimes provides additional information, most frequently relating to the identity of the deceased, for example, a name on a grave header. The remarks field had also been used for general brief notes relating to the recording of the crime scene. There is an *INTELLIGENCE* field in the **MAINSITELOG** which is largely redundant and contains only four entries – two of which give a brief summary of when and how the deceased were killed. There is also a *DATA SOURCE* field which was very infrequently used

In addition to this, the **MAINSITELOG** includes a field named *ITEM TYPE*, which was set up in the original databases. The item types are displayed as codes ranging from 1 to 5:

> 1 = Artefact. This could mean anything from a personal effect, to an item of clothing, to a piece of forensic evidence such as a bullet. A description of the item can be found in the corresponding record in the **EVIDENCE PLUS CLOTHING** table.
>
> 2 = Body.
>
> 3 = Body Part.
>
> 4 = Nothing. This code was used on 155 occasions and initially it was difficult to see the purpose of it, if it is assumed that a record has to represent an item type of one kind or another. Closer examination of the data, however, suggested that this code was used when a suspected grave site proved to be a negative feature in which no artefacts or human remains were found.
>
> 5 = General Body Parts. This code was not used at all, presumably because Item Type 3 was used in preference. It was, however, still retained in the original look up table.

The use of coded item types makes it possible to determine straight away what any particular record is, i.e. whether it is an artefact or an actual body or body part. As such it is a very useful field for narrowing down queries and examining records relating only to a specific aspect of the research.

5.7.2 The Biological Profile of the Deceased and Cause of Death.

This large dataset can be found in the **PATHOLOGY AND ANTHROPOLOGY** table (number of records = 6,384). The number of cases is less than that in **MAINSITELOG**, because not all of the cases in **MAINSITELOG** were bodies, for example many were artefacts such as ballistic evidence. The information in the **PATHOLOGY AND ANTHROPOLOGY** table includes the date and location of the autopsies, the minimum number of individuals per record, a description of the condition of the remains which includes, where possible, commentary on the level of decomposition, the age at death, sex and stature of the deceased and any

other features which might assist in identifying them for example, hair colour, scars, tattoos, dental work, previous surgery and medical conditions.

The data relating to cause of death was divided into manageable pieces of information which could be used together to build up an overall picture of how the victim died, as well as separately or in combination if for example sex and age specific mortality patterns in different geographical locations were being analysed. These fields include *CAUSE OF DEATH*, *INJURY TYPE*, *NUMBER, LOCATION* and *DIRECTION OF INJURIES*.

A consideration of post-mortem modification of remains is included as in some cases this might reflect the attitude of the perpetrator towards the deceased. For example, the bilateral crush injuries to the ribs sustained as individuals were thrown on top of each other in mass graves would suggest a casual disregard for the dignity of the deceased. The same could be said for those bodies which displayed evidence of gnawing by animals because they had been left lying on the ground, or deliberately dumped down wooded slopes, as at Ravnice, Bosnia-Herzegovina. Evidence of post-mortem damage is also one means of identifying subsequent criminal activity, for example, the truncation of bodies caused by moving them between execution sites, primary and secondary graves, usually with heavy machinery.

Initially an attempt was made to distinguish incidental from deliberate post-mortem injury, but the defining criteria were difficult to establish and in many cases it was simply just not possible to tell.

The *SUMMARY* and *DESCRIPTION* fields, which often contained large amounts of diverse data, have been described in detail in Sections 5.5 and 5.6. These fields were retained after the relevant information had been extracted from them, but it is envisaged that they will prove to be of limited use for in depth analysis and querying. They did, however, provide a useful check where the original information in other fields was unclear, e.g. the Xs and Ys in the *SEX BONES* field (Section 5.6.3).

5.7.3. The Clothing and Personal Possessions of the Deceased, plus Associated Forensic Evidence

Originally this information was divided between two tables, **CLOTHING** and **EVIDENCE**. For the purposes of expediency and in order to simplify the relationships within the database, these two tables were merged into the **EVIDENCE PLUS CLOTHING** table (number of records = 28,035). The separate tables **CLOTHING** and **EVIDENCE,** with links to the **MAINSITELOG** table, were retained together with the look up table **EVIDENCE WITH ARTEFACT TYPES**, which in turn was linked to the **PATHOLOGY AND ANTHROPOLOGY** table. A single individual could have multiple items of clothing or personal effects buried with them, and they could also potentially be associated with many items of forensic significance such as ligatures, cartridge cases and bullets.

Much of the information within the **EVIDENCE PLUS CLOTHING** table is coded, for example, *EVIDENCE TYPE, EVIDENCE NUMBER, ARTEFACT CODE* and *ARTEFACT SUB-CODE*. The last two fields enable the *ITEM TYPE* recorded in the **MAINSITELOG** table to be described. For example, in a randomly selected record *SITECODE* ZJ06, *CASEID* 454, "Ba" is a piece of shrapnel, described as "short rod like metal piece measuring about 13mm x 6mm diameter".

The only *EVIDENCE TYPE* recorded was "B", which represents a body, although confusingly the definition for this code was found in the **ITEM TYPE** look up table, rather than the **EVIDENCE TYPE** look up table, which actually describes the artefact codes. Although this sounds rather complicated, the reality of navigating and questioning these fields is actually quite simple. In addition to the coded fields there is room to describe any item associated with the deceased and there are also fields for recording where the evidence was retrieved from, who recovered it and on what date.

The information included in the **EVIDENCE PLUS CLOTHING** table relates to different aspects of the lives and deaths of the victims. The clothing for example, could indicate whether or not the deceased had military affiliations. It might also provide supportive information regarding the sex of the victim. If he or she were wearing many layers this might

represent internal displacement or homelessness and an attempt to keep warm by wearing all the clothes. If the clothing was in a poor state of repair this might indicate a fugitive lifestyle or detainment prior to death. It is also possible to compare defects in clothing such as holes and lacerations to injury sites on the body to give more conclusive proof of gunshot wounds, sharp force or blast trauma.

The ballistic evidence recorded in the table is obviously of importance in confirming cause of death, particularly if artefacts such as bullets, cartridge cases or shrapnel are found actually within the remains. Blindfolds and ligatures provide valuable supplementary information relating to the circumstances surrounding death as well as evidence of criminal activity. Analysis of this data can identify the frequency with which these items were recovered and any population or site specific patterns.

This table also enables any personal effects such as religious artefacts, medication and identification documents to be logged. This tells us not only about the lifestyle of the deceased but how they were treated both ante-mortem and post-mortem. For example if they were stripped of anything which might either bring them comfort or identify them, this might indicate a more organised systematic approach by the perpetrator, with the focus on destroying evidence and preventing identification of the deceased after the crime. Where the personal effects and ID of the deceased were left *in situ*, particularly in whole groups of individuals, this might suggest a more blasé, spontaneous approach, or perhaps even a desire that the victim should be identified in order to teach the rest of the family a lesson. It would also give a sense that the offenders considered themselves to be above the law to the extent that they had no fear of reprisal if the crimes were ever investigated.

5.7.4 The Post-mortem Fate of the Deceased and Disposal of Their Remains

Details of how the deceased were disposed of after death are found mostly in the **GRAVEFORM** and **MAINSITELOG** tables, although some related information can also be found in the **PATHOLOGY AND ANTHROPOLOGY** table. The **PATHOLOGY AND ANTHROPOLOGY** and the **GRAVEFORM** tables are linked, but not every record in the former

has corresponding information in the latter and there are only a total of 1,949 records in the **GRAVEFORM** table.

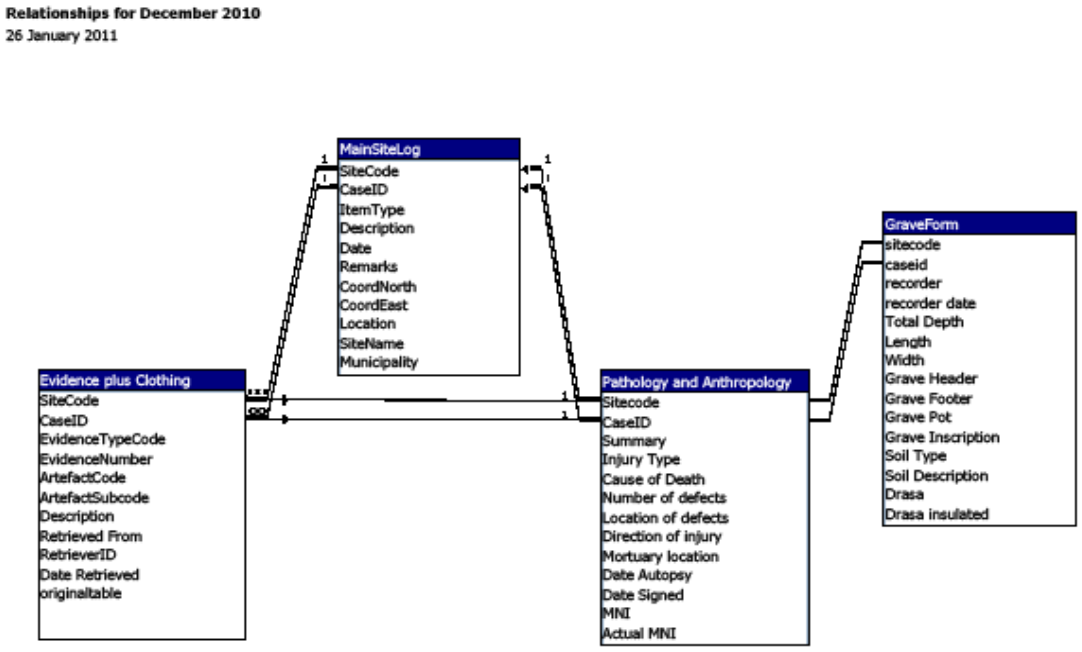
The information in the **GRAVEFORM** table relates primarily to individual graves, providing details of size (dimensions and depth), whether a header, a footer, or a grave pot were present, what form these might take and whether any inscriptions were present. It records whether the grave was hand or machine dug, and if it comprised a formal *Drasa* burial, typical of those seen in legitimate Kosovo Albanian cemeteries in which the body is wrapped, usually in a blanket, and placed in a void beneath a sloping piece of wood.

Additional information within the table includes a description of the soil type at the grave sites, evidence of insect activity, whether the body was wrapped or contained within anything, such as a coffin, plastic or a blanket, or indeed, whether they had actually been buried at all. The position and orientation of the body was recorded in some cases, as were details of the recorder and the date that the body was excavated.

Some of the information in the **GRAVEFORM** table is repeated elsewhere in the other tables and it is certainly not a complete set of records. There is however some useful data contained within it which may illustrate particular patterns primarily relating to formal burials within Kosovo. It is interesting because it provides a very detailed picture of a particular mode of burial - a subset of the overall sample - which serves as a contrast to some of the very different patterns seen elsewhere, for example in the mass graves of Bosnia. It also contains information which was not relevant to this research, such as soil type and insect activity, which might be useful for future research, for example, in relation to taphonomy.

Figure 18 shows the relationships between the four key tables described above, which are all are linked by the primary keys *SITECODE* and *CASEID*. It is evident from this diagram that the most significant relationships for the purposes of this research are the 'one to one' relationship between the **MAINSITESLOG** and the **PATHOLOGY AND ANTHROPOLOGY** tables, and the 'one to many' relationship between the **PATHOLOGY AND ANTHROPOLOGY** and the **EVIDENCE PLUS CLOTHING** tables.

Figure 18: The final integrated database, relationship report (does not show all data fields within each table



In its current form the final integrated forensic database serves as an accurate repository for the majority of the data collected by, or on behalf of, ICTY between 1996 and 2001. The level of detail it contains and the way in which the information is organised lends itself to detailed analysis, whereas prior to the changes described in this chapter that was simply not possible. Inaccurate records have been amended or removed in their entirety, any duplicate records have been eliminated and the large blocks of text have been broken down into short categories of information which are relevant to the research. Only data of a sufficiently high quality were retained or added to the database, therefore it is possible to be confident that any findings are based on primary records where the integrity and continuity of the evidence can be demonstrated. It is also important to re-iterate that all the changes made during the construction of the final database are transparent and that at any stage it is possible to retrace the steps taken and to identify how a particular decision was reached.

The end result is that the database is now capable of addressing all of the questions outlined in Chapter One within the parameters specified in Chapters Three, Four and Five. What the database cannot do is provide answers to questions relating to missing data (see Chapter Three, sections 3.1 and 3.2, Chapter Five, section 5.2) or data which were recorded following the handover of responsibilities from ICTY to local government agencies (Chapter 4, section 4.1).

CHAPTER SIX

ANALYSIS OF THE DATA AND RESULTS

This Chapter presents the results of analysis of the data contained within the final integrated forensic database. The findings relating to the condition and preservation of remains, numbers of deceased, age at death, sex, stature and cause of death are based primarily on analysis of the data in the **PATHOLOGY AND ANTHROPOLOGY** Table. Findings relating to the location of the sites and burial context are based on analysis of the **MAINSITELOG**, **SITES**, **GRAVEFORM**, and **PATHOLOGY AND ANTHROPOLOGY** Tables. The findings which relate to clothing, evidence and artefacts associated with the deceased are based on analysis of the **PATHOLOGY AND ANTHROPOLOGY** and **EVIDENCE PLUS CLOTHING** Tables.

It is acknowledged that due to the nature of some of the burials in the mass graves in Bosnia-Herzegovina there was the potential for some individuals to be duplicated in the records, e.g. a foot from Zeleni Jadar might belong to the same person as a largely complete body from Glogova. A study of the condition of the remains indicated that this was unlikely to apply to any of the children from Bosnia-Herzegovina. Where adult data was used for the purposes of comparison in Bosnia-Herzegovina, it is believed that the potential for duplicated individuals was minimal as only those remains which were in a reasonable condition could be used to generate findings relating to such things as age at death, sex and cause of death. Where there was any doubt over the integrity of the remains as an individual they were not included in the analysis. Where either age at death, sex or cause of death, were unknown in any given dataset being analysed and discussed, this is always made explicit.

6.1 Condition and Preservation of Remains

Before considering any of the results of analysis of the forensic data it is necessary to outline the general condition of the remains which were exhumed and examined. This was fundamental to the success of the examinations undertaken by the forensic teams in the field as the condition of any remains examined, will always dictate the level of biological

information that can be derived from them. As discussed in Chapter Four the better the condition and preservation of the remains, the more precise it is possible to be regarding determination of age, sex, stature and cause of death.

6.1.1 State of Preservation

The level of decomposition was recorded in 4,883 (76%) of the 6,384 individuals; 2,434 from Kosovo and 2,449 from Bosnia. Approximately 56 terms (more with various combinations of terms) were used to describe state of preservation, but these were standardised for analysis by assigning eight broad categories. The mapping process undertaken to achieve this is summarised in Appendix One. Sometimes a description fell within two of the designated categories and a decision had to be made as to where it belonged based on additional information in the *DESCRIPTION OF REMAINS* field. The final eight categories are listed below:

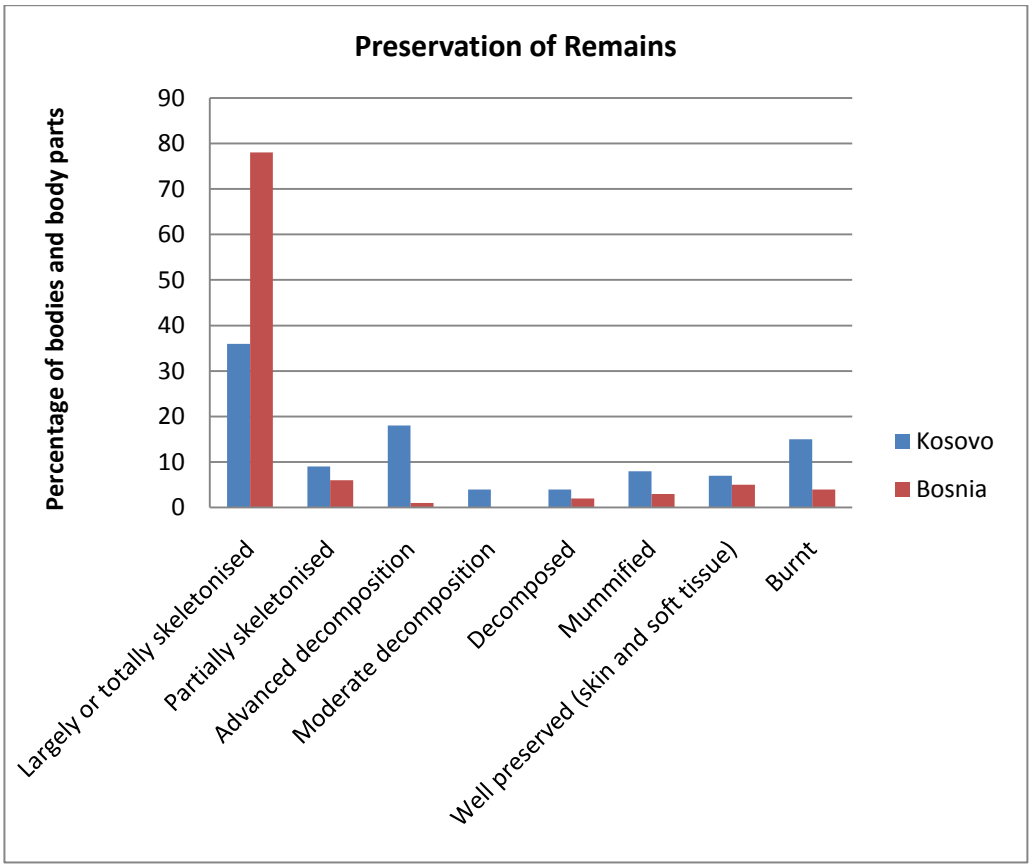
1. Largely or totally skeletonised
2. Partially skeletonised
3. Advanced decomposition
4. Moderate decomposition
5. Decomposed
6. Mummified
7. Well preserved with skin and soft tissue
8. Burnt

It was not possible to be absolutely precise about the condition of some of the remains due to lack of detail in the description, and some of the categories such as "decomposed" and "moderate decomposition" were more ambiguous than others, which meant that there was the potential for false distinctions to be made. Where these were the only descriptions available however they had to be utilised and it was at least possible to clearly distinguish between those remains which were skeletonised, those which were well preserved and those which were in altered states for example mummified or burnt. Table 12 compares the numbers of individuals in various conditions in Bosnia-Herzegovina and Kosovo, and Figure 19 illustrates the percentage of remains within each category.

Table 12: Condition and preservation of remains

Preservation	Kosovo	Bosnia-Herzegovina
Largely or totally skeletonised	874	1919
Partially skeletonised	228	159
Advanced decomposition	428	24
Moderate decomposition	96	0
Decomposed	95	55
Mummified	194	85
Well preserved (skin and soft tissue	161	114
Burnt	358	93
Total	**2434**	**2449**

Figure 19: Percentage of remains within each preservation category



It can be seen from Table 12 and Figure 19 that the majority of remains (78%) from Bosnia-Herzegovina were skeletonised. The figure was lower for Kosovo (36%) but there were a larger percentage of bodies and body parts which were described as decomposed or were in moderate or advanced states of decomposition - a total of 26% compared to 3% from Bosnia-Herzegovina. The percentages of those remains which were partially skeletonised were relatively equal at 9% in Kosovo and 6% in Bosnia-Herzegovina. Both countries showed low percentages of individuals who were well preserved with skin and soft tissue, 7% in Kosovo and 5% in Bosnia-Herzegovina. The frequency of mummified remains was higher in Kosovo at 8% than in Bosnia-Herzegovina where it was 3%. There were considerably more burnt remains examined in Kosovo, a figure of 10% compared to 4% in Bosnia-Herzegovina. This could be directly related to the types of injuries seen and cause of death (see Section 6.5).

6.1.2 Post Mortem Modification

Post mortem modification had been recorded in 1,136 of the 6,384 victims, 811 from Bosnia and 325 from Kosovo. The modifications could be divided into a number of basic types:

1. Burning (although it was not always possible to determine whether this took place post-mortem or ante-mortem)
2. Animal activity
3. Previous autopsy
4. Weathering or erosion
5. Fractures not caused by any of the above factors.

Table 13 illustrates the number of individuals from Kosovo and Bosnia-Herzegovina in whom each type of modification was observed, and Figures 20 and 21 show a more detailed analysis of the body parts damaged by fractures. A body or body part might have sustained more than one type of modification.

Table 13: Comparison of post-mortem modification in Bosnia-Herzegovina and Kosovo

Post-mortem Modification	**Number of Individuals with modification**		**% forensic population Kosovo n= 3529, BiH n = 2855**	
	Kosovo	BiH	Kosovo	BiH
Previous Autopsy	39	0	1	0
Animal Activity	41	0	1	0
Burning	358	93	10	3
Weathering/Erosion	2	8	0.05	0.3
Fractures	100	682	3	24

It can be seen from the table above that, with the exception of fractures in Bosnia-Herzegovina and burning in Kosovo, the frequencies for all types of post-mortem modification in both countries was very low. It cannot unfortunately be determined whether this reflects the true situation or whether the information was not recorded in a lot of cases.

The relatively high frequency of post-mortem fractures seen amongst the Bosnian victims is almost certainly due to the nature of the burials, i.e. large numbers of bodies piled on top of each other in mass graves, and also to the post-mortem disturbance and movement of bodies from primary to secondary mass graves (see Section 6.4.4). This observation is supported by the fact that higher percentages of bodies with fractures were seen at disturbed primary mass grave sites such as Glogova where 30% of all bodies had fractures and Kozluk where 40% of all bodies had fractures. This is a sharp contrast to the undisturbed primary mass grave site at Cerska where only 1% of the bodies had post-mortem fractures, and the undisturbed mass deposition site at Ravnice where the remains were largely unburied and only 14% of the bodies showed fractures. The situation at Zeleni Jadar appears to be slightly unusual in that although it was a secondary mass grave, the bodies having been brought there from Glogova, only 19% of the bodies were recorded as having fractures.

Figure 20: Distribution of post-mortem fractures in bodies from Kosovo

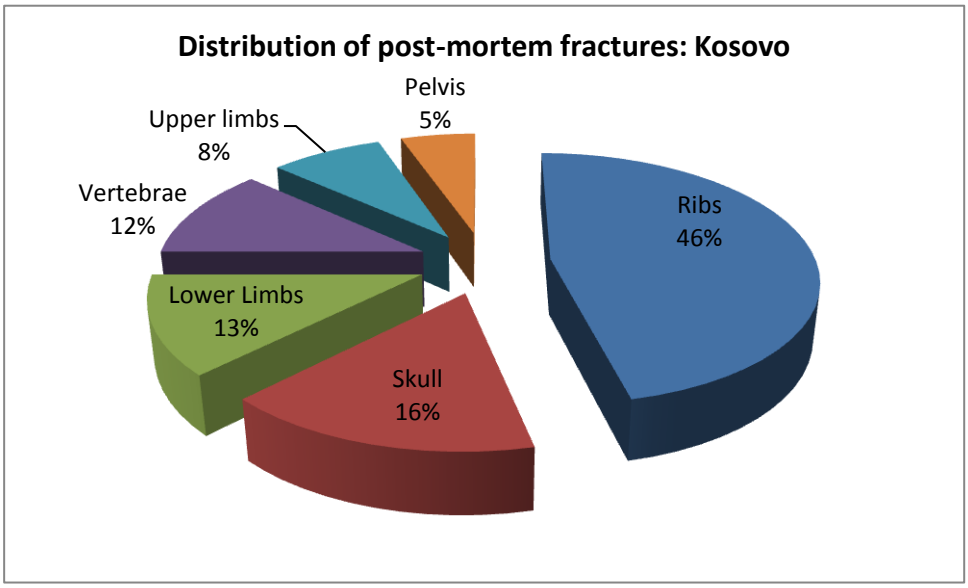
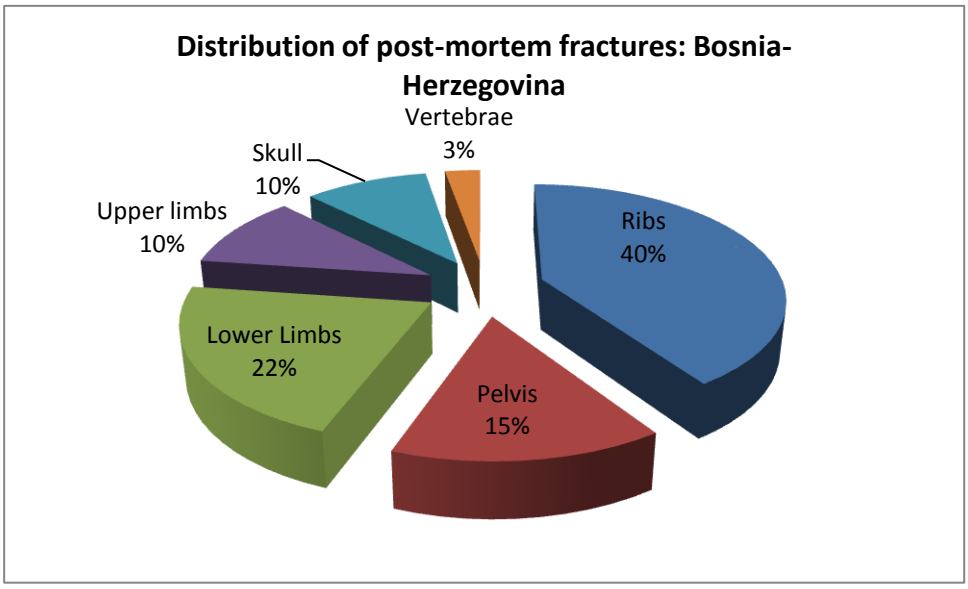


Figure 21: Distribution of post-mortem fractures in bodies from Bosnia-Herzegovina



There were both similarities and differences between the post-mortem fracture patterns seen in Kosovo and Bosnia-Herzegovina. In both countries fractures occurred most frequently in the ribs, and the percentage of remains in which they occurred was also very similar. This is not a surprise as the anatomy and position of the rib cage means that it is much more susceptible to damage than most other parts of the body which are more robust and might not be so close to the ground surface. There were also similar levels of

damage caused to the upper limbs in both countries, but a higher percentage of fractures were observed in the lower limbs in Bosnia-Herzegovina. The femora and tibiae are much harder to fracture than the upper limbs and the fact that more of these were broken almost certainly reflects the use of heavy machinery by perpetrators who were digging out the primary graves and removing the bodies to secondary locations (Clark, 2001: 3). More pelvic fractures were also observed in Bosnia-Herzegovina than Kosovo, and this is likely to relate to the same activity. A greater number of post-mortem skull and vertebral fractures were observed in the Kosovan remains. The reason for this is unclear although perhaps they could have been more susceptible to damage because of the effects of ante or peri-mortem blast or burning.

The higher percentage of burnt remains in Kosovo could be both incidental and deliberate in cause. Many of the villages in Kosovo were shelled during attacks by Serb paramilitary forces, houses were deliberately raised to the ground, and there were also a considerable number of deaths caused by NATO bombs which resulted in the bodies of the victims being burnt (see page 241). In addition to this it is very likely that deliberate post-mortem burning of the bodies of victims who had been shot or killed by other means was being practised. The atrocities in Kosovo occurred after the unsuccessful attempts of the Bosnian Serb Army to hide their crimes by burying large numbers of the people they had killed in mass graves and subsequently moving them around. This had plainly not worked as evidenced by the discovery and investigation of the graves which led to the indictments of prominent military and political figures. It is entirely feasible that having learnt from this, the Serbs in Kosovo were attempting to avoid the same fate by ensuring that the bodies of their victims were more thoroughly destroyed by burning, thereby hiding the evidence of their crimes.

6.1.3 Completeness of Remains

The term “completeness” was used to describe how much of the body was present. The terminology applied to this was slightly subjective as it was descriptive rather than quantifiable, e.g. an estimated percent of the body present, but this was the system which had been utilised in the original databases therefore it could not be changed without access to the original autopsy reports and photographs. As such the remains were assigned one of three categories:

1. Complete
2. Almost Complete
3. Incomplete

Complete meant that the remains whether they were fleshed, semi decomposed or skeletonised were intact, i.e. no bones or body parts were missing. Almost complete referred to bodies which were not intact but had a small number of bones missing, e.g. a few hand or foot bones, a rib or perhaps some fragments of skull due to traumatic injury. Incomplete was used to describe bodies which had one or more entire parts missing. It was applied to bodies in a wide range of conditions from those which were missing, for example, an arm or both lower legs, through to those represented by single body parts such as an arm, a head or a lower leg and foot. Table 14 summarises the findings regarding the completeness of the remains examined in Kosovo and Bosnia-Herzegovina

Table 14: Completeness of remains

Completeness	**Kosovo (n=1283)**	**Bosnia-Herzegovina (n=2545)**
Complete	493 (38%)	314 (12%)
Almost Complete	202 (16%)	455 (18%)
Incomplete	588 (46%)	1776 (70%)

There was a high number of incomplete remains from Bosnia-Herzegovina therefore a closer assessment of patterns at individual sites was made. As might be expected there was a greater proportion of incomplete remains at the grave sites where there had been prior disturbance by perpetrators moving and re-burying remains. At Glogova for example there were only 45 complete and 146 almost complete bodies but 575 incomplete sets of remains. Similarly at Zeleni Jadar, the secondary mass grave site which contained those removed from Glogova, only six bodies were complete and 26 were almost complete, leaving 408 which were incomplete. The findings at Zeleni Jadar do not support the findings relating to the low number of post-mortem fractures observed at that site (see above). This suggests that either the body parts had become disarticulated through the joints or that the fractures had simply not been recorded. The likeliest interpretation is perhaps the latter as the incomplete remains described were otherwise very similar in

character to those found at Glogova. There were far higher percentages of complete or almost complete bodies at the undisturbed primary grave sites such as Cerska and Nova Kasaba.

The percentage of bodies which were well preserved, i.e. had skin and soft tissue, were actually very low for both countries, at 7% for Kosovo and 5% for Bosnia-Herzegovina. In terms of completeness a far higher percentage of complete or almost complete bodies were recovered in Kosovo than Bosnia- Herzegovina. Tables 15 and 16 summarise and compare those remains which were in a good condition and those which were in a poor condition in both countries:

Table 15: Remains in a good state of preservation

	Kosovo (% bodies)	Bosnia-Herzegovina (% bodies)
Complete or almost complete	54	30
Well preserved with some skin and soft tissue	7	5

Table 16: Remains in a poor state of preservation

	Kosovo (% bodies)	Bosnia-Herzegovina (% bodies)
Incomplete	46	70
Skeletonised	36	78
Post mortem fractures	3	24
Burnt	10	3

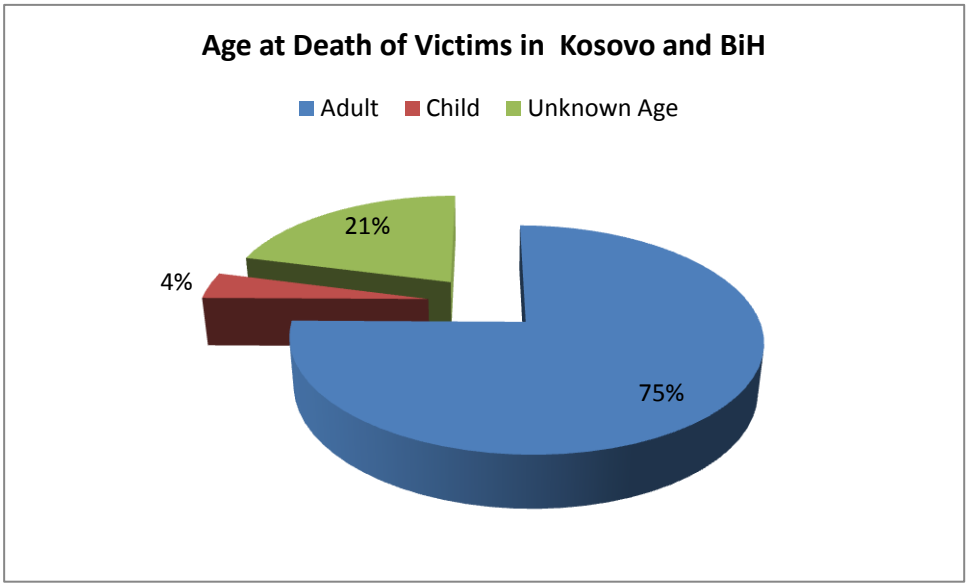
Overall it appears that the remains from Kosovo were in a better condition than those from Bosnia, as there were more bodies which were complete and fewer that were largely or totally skeletonised, although the effects of advanced decomposition would also have impacted on the retrievability of certain types of information such as cause of death and estimation of sex in juveniles. The number of fractures (particularly in the lower limbs) in the remains from Bosnia-Herzegovina and the number of burnt remains from Kosovo would also have had a negative impact on such things as calculating living stature and sex determination. In both countries the percentage of remains that were actually well preserved with skin and soft tissue was low meaning that this would have reduced the number of juveniles in whom sex could be determined by biological means. It would also have imposed limitations on determining cause of death, particularly if the skeletal remains being examined were incomplete or no obvious fatal injury was evident. The extent to which the differential preservation of the remains influenced the final outcomes of analysis in terms of establishing the age at death and sex of the remains and determining cause of death is discussed in Chapter Seven, Section 7.1.

6.2 Age at Death of the Victims

6.2.1 Age at Death of All Individuals

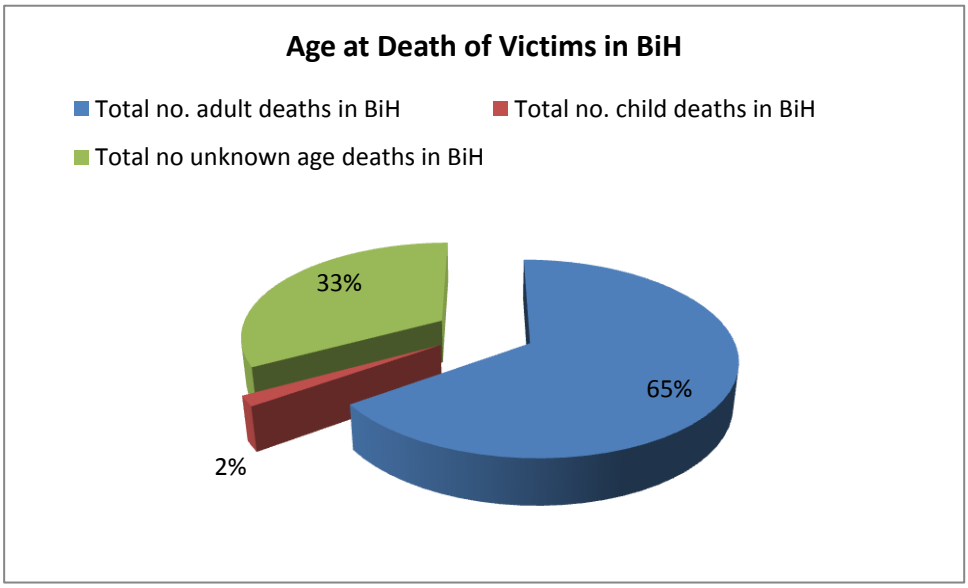
As stated in Chapter Four, for the purposes of this research children were defined as those aged 15 years or less. A total number of 6,384 deceased were recorded in the Pathology and Anthropology table of the final integrated forensic database. 4,799 of these were adults, 249 were children and 1,336 were individuals of unknown age. Figure 22 illustrates these figures as percentages of the total forensic population.

Figure 22 Age at death of victims in Kosovo and Bosnia-Herzegovina



In Bosnia-Herzegovina the total number of deaths was 2,855 of whom 1,862 were adult, 50 were children and 943 were of unknown age. Figure 23 illustrates these figures as percentages.

Figure 23: Age at Death of Victims in Bosnia-Herzegovina



In Kosovo the total number of deaths was Kosovo 3,529, of whom 2,937 were adult, 199 were children and 393 were of unknown age. Figure 24 illustrates these figures as percentages.

Figure 24: Age at Death of Victims in Kosovo

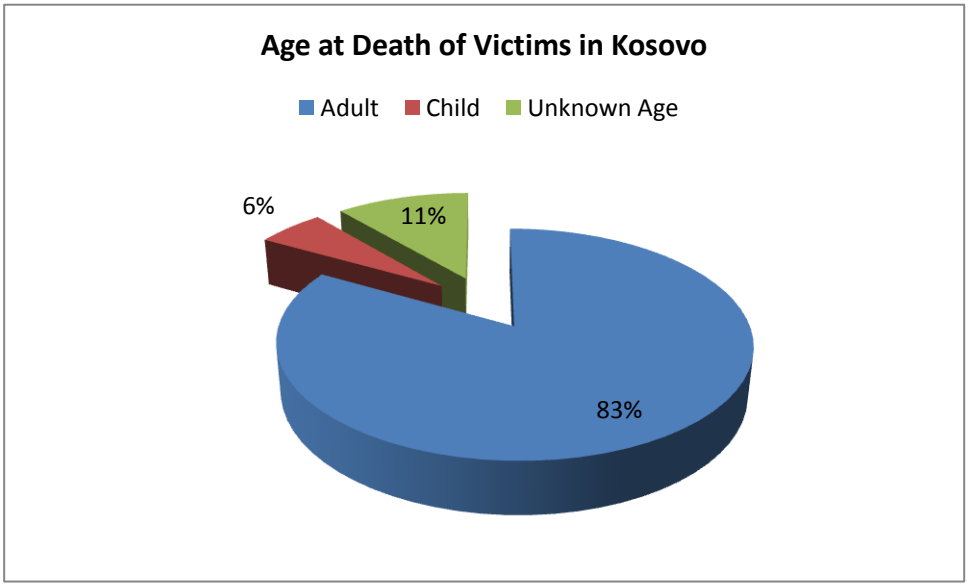


Table 17 shows the results of closer analysis of the adult age groups in Kosovo and Bosnia-Herzegovina.

Table 17: Summary of numbers in different age groups: Kosovo and Bosnia

Age Range	**Kosovo: Total population n=3,529 known age n=3,136**		**Bosnia: Total population n=2,855 Known age n=1,912**	
	Number of individuals	*% Individuals of known age*	*Number of individuals*	*% Individuals of known age*
15 years or less	199	**6**	50	**3**
15 to 18 years	122	**4**	105	**6**
18.1 to 30 years	590	**19**	309	**16**
30.1 to 65 years	1910	**61**	1443	**75**
Over 65 years	315	**10**	5	**0.3**
Age Unknown	393 (11% of dataset)		943 (33% of dataset)	

It can be seen from Table 17 that the trends in the age data in both countries were similar with the exception of the oldest age group. A surprisingly low percentage of individuals were aged between 18 and 30 years, when it might have been expected that this group would have suffered the most being of "prime fighting" age. The possibility of error in determining age during the post-mortem examination of the remains was considered, but the margin of error associated with age estimation in this group is much smaller than in those aged over 30 years. This would mean that any remains that did belong to individuals aged less than thirty years would almost certainly be assigned to the correct category. In addition to this, the methodology used to standardise the adult category was to use age thirty years as the numeric equivalent of "adult" (see Chapter Five, Section 5.6.3), so if anything, this would have artificially inflated the numbers in the 18 to 30 age group.

There were relatively low numbers of children and 15 to 18 year olds in both Kosovo and Bosnia-Herzegovina, and exceptionally low numbers of elderly adults in Bosnia-Herzegovina. The percentage of elderly adults in Kosovo was considerably higher at 10%, equal to the percentage of those under 15 years and 15 to 18 year olds combined. This

relatively high percentage of deaths in elderly people and higher percentage of children than was observed in Bosnia-Herzegovina, hints at the 'family' nature of the killings in Kosovo, i.e. the targeting of homes, villages, and entire extended families rather than the rounding up and taking away of sections of the community. At face value the Bosnian data does seem to indicate that adults between 30 and 65 years were being specifically targeted and that children and elderly people were not.

Another possibility to consider is that there were simply fewer people aged less than 30 years in the general population than there were 30 to 65 year olds, and that the forensic data simply reflects this. In order to establish whether this was the case or not it would be necessary to analyse contemporary census data and as stated in Chapter Two (Section 2.2) this is extremely difficult, particularly in Kosovo. Even if the census figures were taken to be accurate it would only be possible to look at general mortality rates of those aged under 15 and over 65 years, as the remaining adults are grouped together as "economically active" and no sub-divisions are made which would allow separate analysis of the 18 to 30 year olds and the 30 to 65 year olds.

An alternative interpretation for the low numbers in the 18 to 30 year age category is that those of 'prime fighting age' weren't present because they were, indeed, away fighting. Some may also have fled their villages for fear of being targeted, or have been living abroad in places such as Germany where they formed part of the migrant workforce (Stalker, 2002: Judah, 2000a: 158). In their study, Human Rights Watch noted that the average age of males who were executed was 40.3 years (2001:422). They noted a "counter intuitive" relatively low number of men of military age who they hypothesise were "hiding in the hills, fighting with the insurgency or living abroad" (2001:423). In Bosnia-Herzegovina a similar explanation is likely and it is certainly true that young adult males attempted to form resistance armies to defend their territory (Silber and Little, 1996: 240; Cushman and Mestrovic, 1996: 29).

6.2.2 Age at Death in Children

For the purposes of closer analysis, the ages of the children killed were subdivided into three categories:

1. Birth (0) to 5 years
2. 5.1 to 10 years
3. 10.1 to 15 years

Figure 25 illustrates the numbers of children in Kosovo and Bosnia-Herzegovina within each age category. A table containing this information can be found in Appendix Two.

Figure 25: Child deaths in Kosovo and Bosnia-Herzegovina

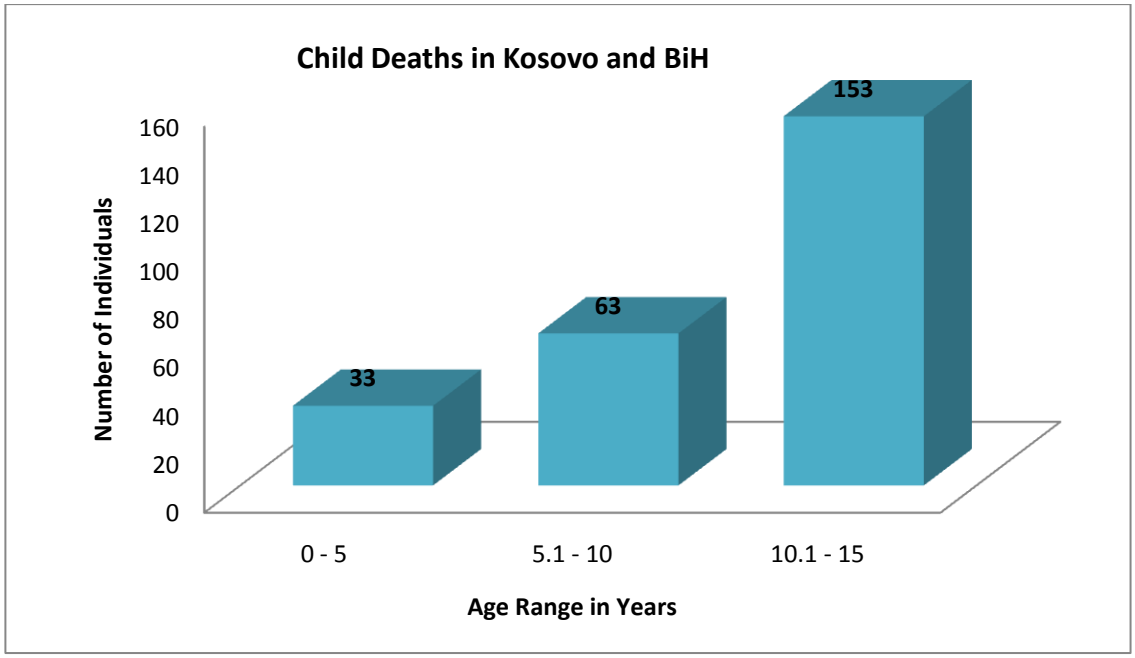


Figure 26 shows the numbers of deaths in each age category in Bosnia-Herzegovina alone, and Figure 27 expresses this as a percentage. A table containing this information can be found in Appendix Two.

Figure 26: Numbers of children within each age category in Bosnia-Herzegovina

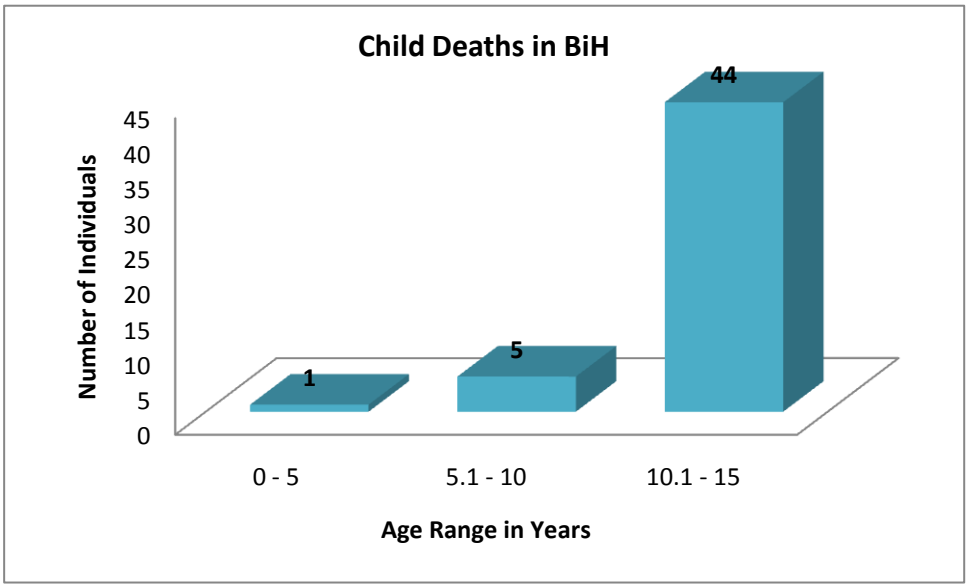


Figure 27: Child deaths in Bosnia-Herzegovina expressed as a percentage

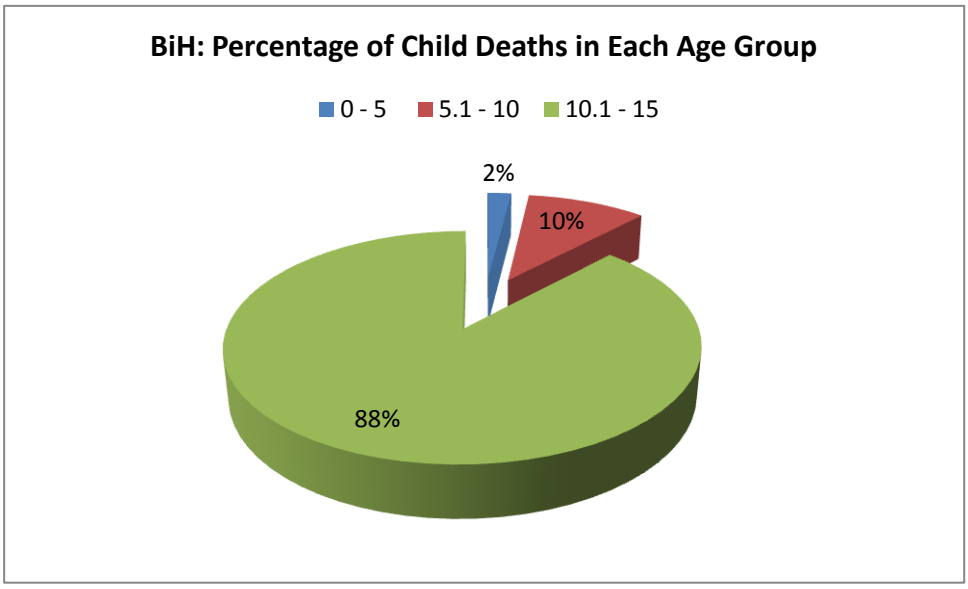


Figure 28 shows the numbers of deaths in each age category in Kosovo alone, and Figure 29 expresses this as a percentage. A table containing this information can be found in Appendix Two.

Figure 28: Numbers of children within each age category in Kosovo

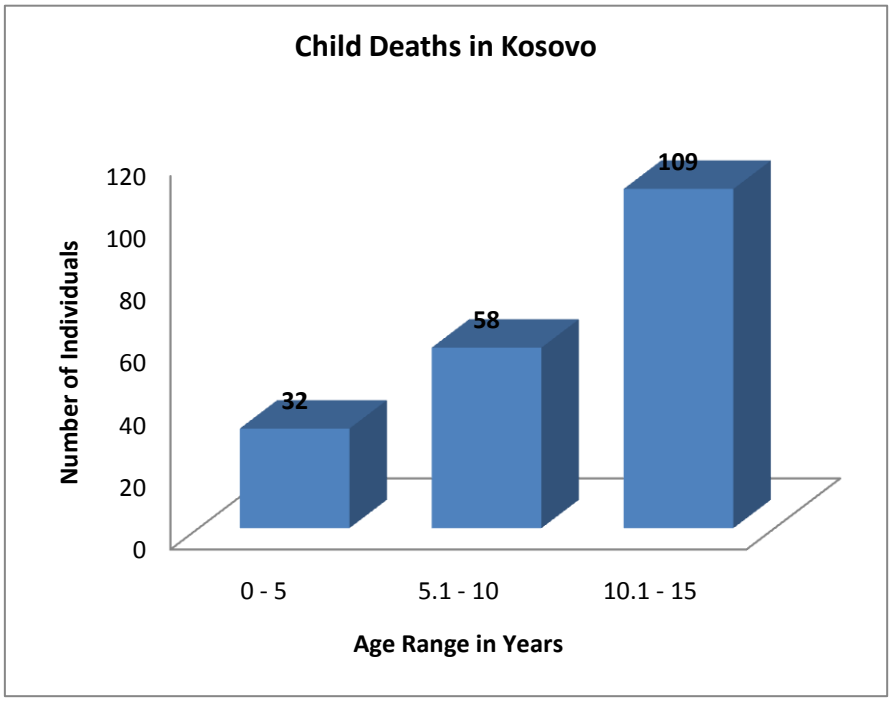
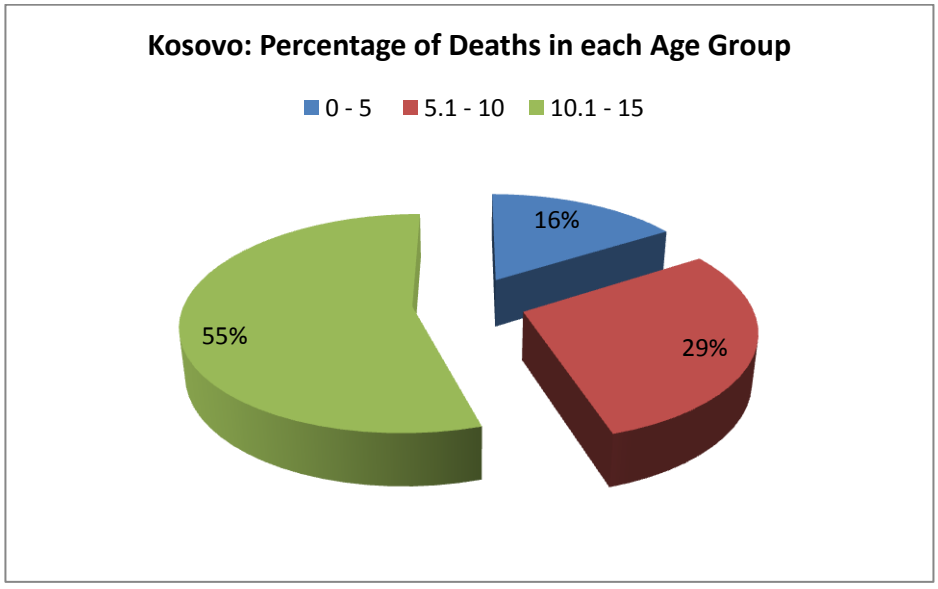
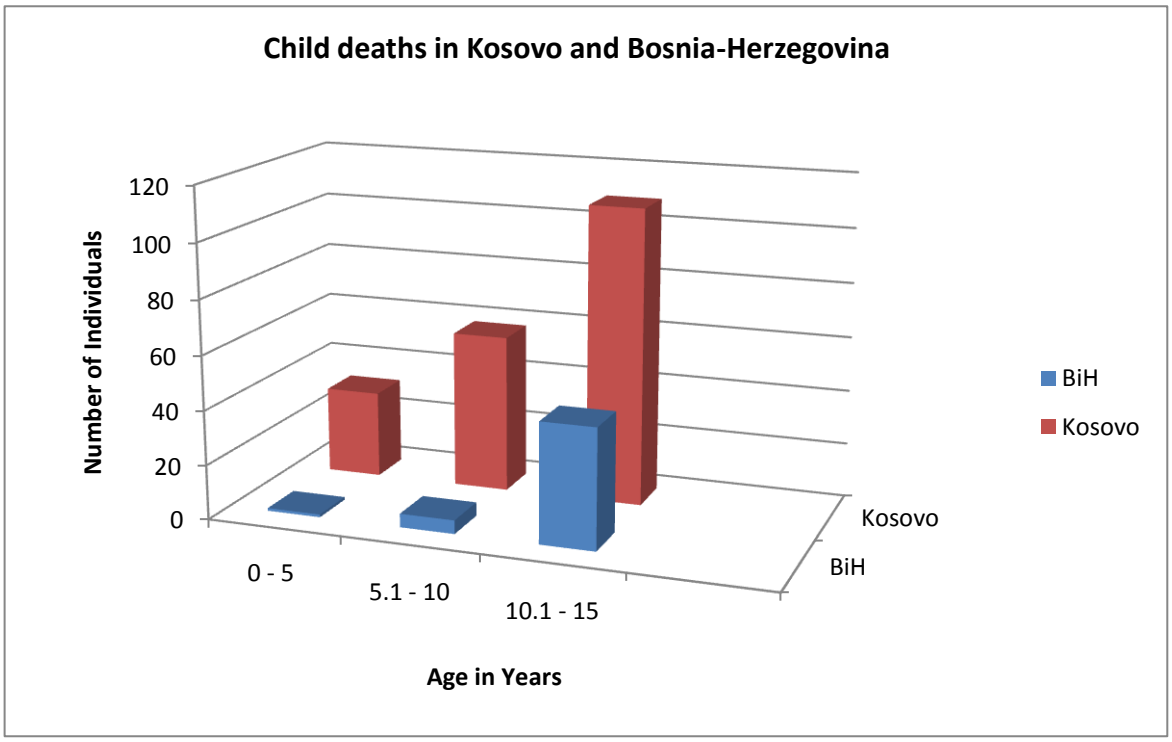


Figure 29: Child deaths in Kosovo expressed as a percentage



Below is a comparison between the numbers of child deaths in different age groups in Kosovo and Bosnia Herzegovina:

Figure 30: Comparison of numbers of child victims within each age category in Kosovo and Bosnia-Herzegovina

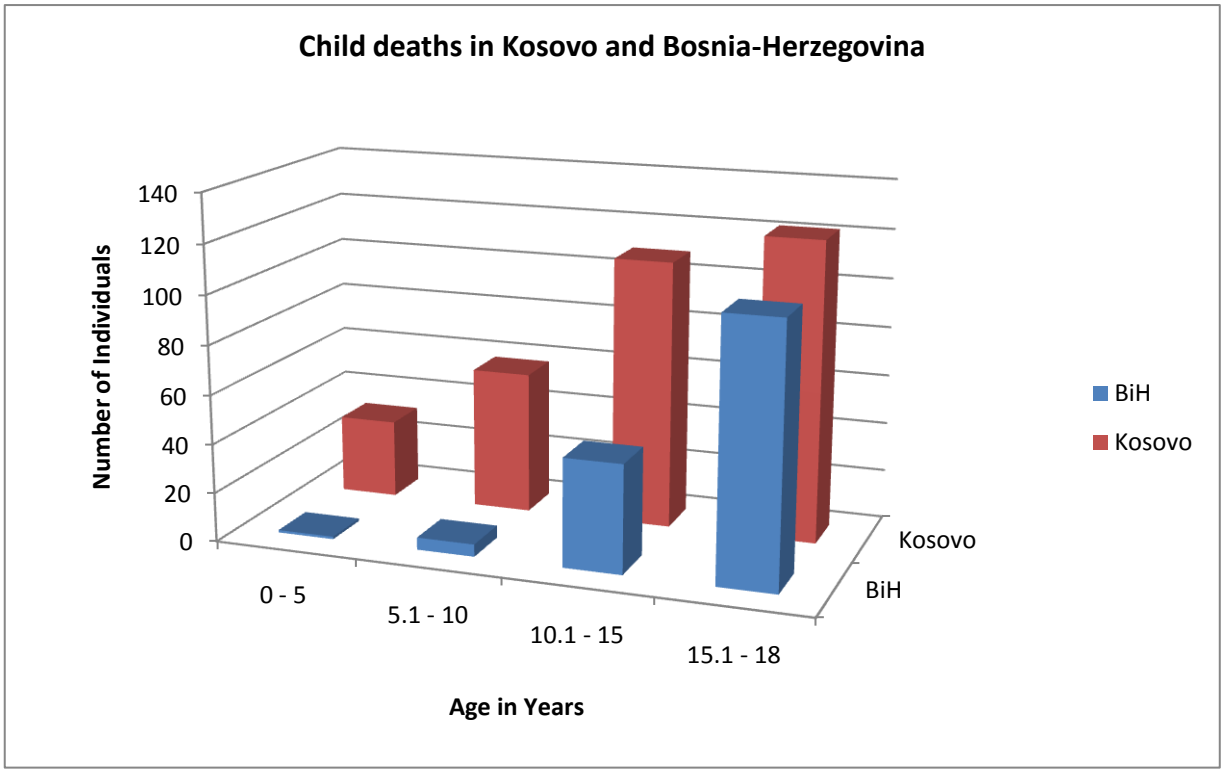


In order to investigate whether the discrepancy between the numbers of children killed in Bosnia-Herzegovina and Kosovo continued to decrease as children became older and turned into young adults, the 15 to 18 year age group in both countries was examined. It was also anticipated that examining this age group might indicate whether the numbers of victims increased dramatically once children were aged over 15 years and more likely to be perceived as adults. Table 18 shows the numbers of individuals aged between 15.1 years and 18 years in Kosovo and Bosnia-Herzegovina, and Figure 31 compares the numbers of child victims within each age category with individuals aged 15.1 to 18 years in Kosovo and Bosnia-Herzegovina in both countries.

Table 18: Numbers of individuals aged between 15.1 years and 18 years in Kosovo and Bosnia-Herzegovina

Individuals Age 15.1to 18 years	Number
Bosnia-Herzegovina	105
Kosovo	122
Bosnia-Herzegovina and Kosovo combined	227

Figure 31: Comparison of numbers of child victims within each age category and individuals aged 15.1 to 18 years in Kosovo and Bosnia-Herzegovina



It can be seen that although there was not a large increase between the numbers of victims aged 10.1 to 15 years and those aged 15.1 to 18 years in Kosovo, this was not the case in Bosnia-Herzegovina where the number of victims more than doubled from 44 to 105. It can also be seen that in the 15.1 to 18 year old age category the numbers of deceased in Kosovo and Bosnia-Herzegovina became much more equal. Overall, there was a steady increase in the numbers of children killed as age increased but the numbers were far more evenly spread throughout the age groups in Kosovo than Bosnia-Herzegovina where there

were very few individuals in the lower age ranges and the majority of deaths occurred within the 10.1 to 15 year age group. The increase in numbers in the 15.1 to 18 year old age group in Kosovo and Bosnia-Herzegovina and the greater level of equality between the two countries perhaps supports the interpretation that individuals of this age were regarded as adults, although the sharper increase in numbers observed in Bosnia-Herzegovina suggests that this distinction was more meaningful in that country.

Direct comparisons between these figures and population data and mortality rates derived from normal census data, are difficult to make. The figures above relate to an artificial "forensic population" and we cannot account for those children who also died during the conflicts for completely different reasons, for example from childhood illnesses such as measles or whooping cough. The figures also do not take into account deaths which were indirectly related to the wars, including those which occurred secondary to injury sometime after the original assault, and those which occurred as a consequence of expulsion from the home and internal displacement (see Chapter Two, Section 2.3)

In Bosnia-Herzegovina, those aged under 15 years made up 18% of the living population in 1998 (See Chapter 2, Section 2.2), the death rate in under 15s was 12.42 per 1000, and the infant mortality rate (those aged < 1 year) was 30.8 per 1000 (*ibid*). Fifty of the 1,912 individuals of known age in the forensic database were aged 15 years or less, which equates to 26.15 per thousand – less than the infant mortality rate in the 1998 census data but more than double the death rate for those aged under 15 years.

In Kosovo, as discussed in Chapter 2, section 2.2, it is extremely difficult to get accurate and comprehensive census data from the past 30 years, and the only directly comparable figure that could be used for children was an infant mortality rate of 35 to 49 deaths per 1000 in 2008 (United Nations Team in Kosovo, 2008) and a UNICEF report which cited the same figure and added that "the under 5 mortality rate is estimated at 69 per 1000" (UNICEF, 2010). Both these figures are extremely high by modern European standards (United Nations Team in Kosovo, 2008). There were only 32 deaths in the 0 to 5 year age group amongst the individuals of known age in Kosovo (n= 3136), which equates to approximately 10 deaths per thousand. This is considerably lower than the death rate in the general population although as discussed previously it relates to only a sample of that population and only accounts for deaths caused as a direct result of injury in the conflicts.

It was not possible to make a comparison of overall mortality rates in those aged 15 years and under because the data from the general population is not readily available.

6.3 Sex Specific Mortality Patterns

6.3.1 Sex Estimated by Soft Tissue, Bones, or Confirmed by Family of Deceased

Adults and Children

The sex of 3,297 of the 6,384 individuals in the database could be identified, either biologically (soft tissue or bones) or as a result of confirmation of identity by family members. Of these 3,128 were adults and 108 were children (43% of the total number of children). Table 19 illustrates the numbers of male and female adults and children

Table 19: Number of male and female adults and children, figures from Bosnia-Herzegovina and Kosovo combined

	Male	**Female**
Adult	2842 (91% adults of known sex)	286 (9% adults of known sex)
Child	80 (74% children of known sex)	28 (26% children of known sex)
Total	2922	314

In Bosnia-Herzegovina there were 1,263 individuals of known sex (adults, children and those of unknown age). Of these, 1,257 (99.5%) were male and 6 (0.5%) were female. When those of unknown age were removed and the remaining individuals were subdivided into adults and children, it was possible to determine the sex of 1,245 people: 1,220 adults and 25 children. Table 20 shows the numbers of male and female adults and children in Bosnia-Herzegovina

Table 20: Bosnia-Herzegovina: Number of male and female adults and children

	Male	**Female**
Adult	1215 (99.6% adults of known sex)	5 (0.4% adults of known sex)
Child	24 (96% children of known sex)	1 (4% children of known sex)
Total	1239	6

When the adults alone were considered the percentages of male and female adults remained virtually unchanged from those seen in the adults and children combined, showing an overwhelming male bias. There was a slightly reduced bias in the relative percentages of male and female children but this was almost certainly due to the much smaller sample size and, as can be seen from Table 20, only one female child was actually present.

In Kosovo there were 2,034 individuals of known sex (adults, children and those of unknown age). Of these, 1,716 (84%) were male and 318 (16%) were female. When those of unknown age were removed and the numbers of adults and children were examined separately it was possible to determine the sex of 1,991 individuals, 1,908 adults and 83 children. Table 21 shows the numbers of male and female adults and children in Kosovo

Table 21: Kosovo: Number of male and female adults and children

	Male	**Female**
Adult	1627 (85% adults of known sex)	281 (15% adults of known sex)
Child	56 (67% children of known sex)	27 (33% children of known sex)
Total	1683	308

As observed in Bosnia-Herzegovina, when the percentages of male and female adults were calculated separately there was little variation from the percentages of males and females seen in individuals of all ages combined. In the children, however, the male bias decreased considerably, there was an approximate 3:1 ratio of males to females, and the percentage of female children was more actually more than double that of female adults. Thus the sex specific mortality data in Bosnian children closely mirrored that of Bosnian

adults, whereas the relative proportion of males and females was different in Kosovan adults and children, with the children showing a greatly reduced male bias.

Children

Figure 32 shows which methodology was used to estimate sex in children and Figure 33 compares the numbers of male and female children in Kosovo and Bosnia-Herzegovina

Figure 32: Means of identifying sex in those aged 15 years and under

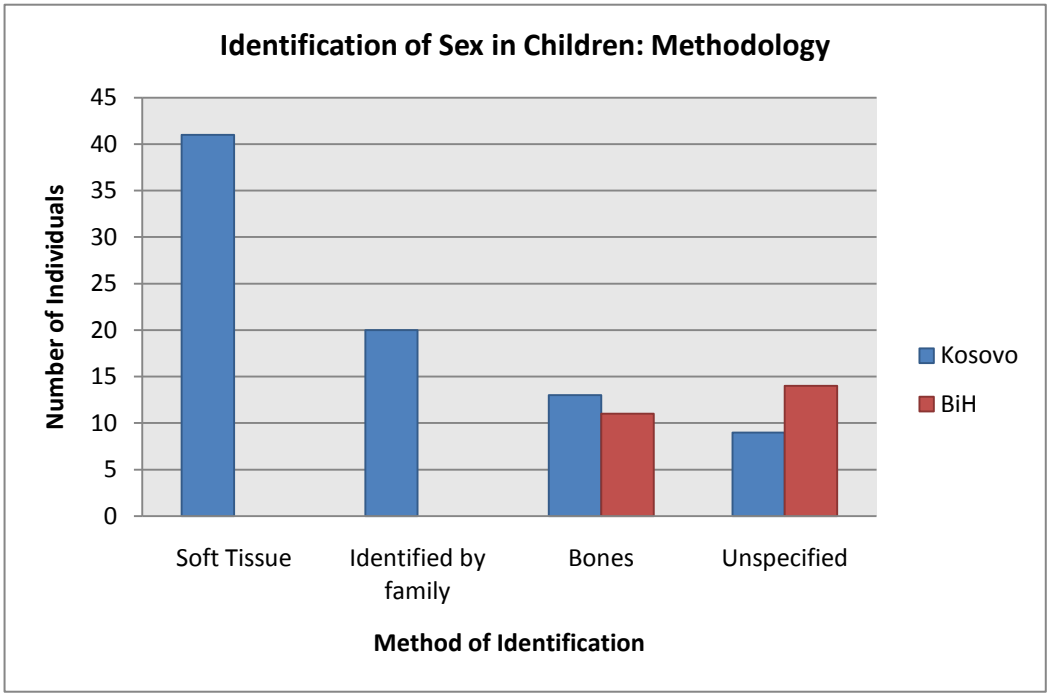
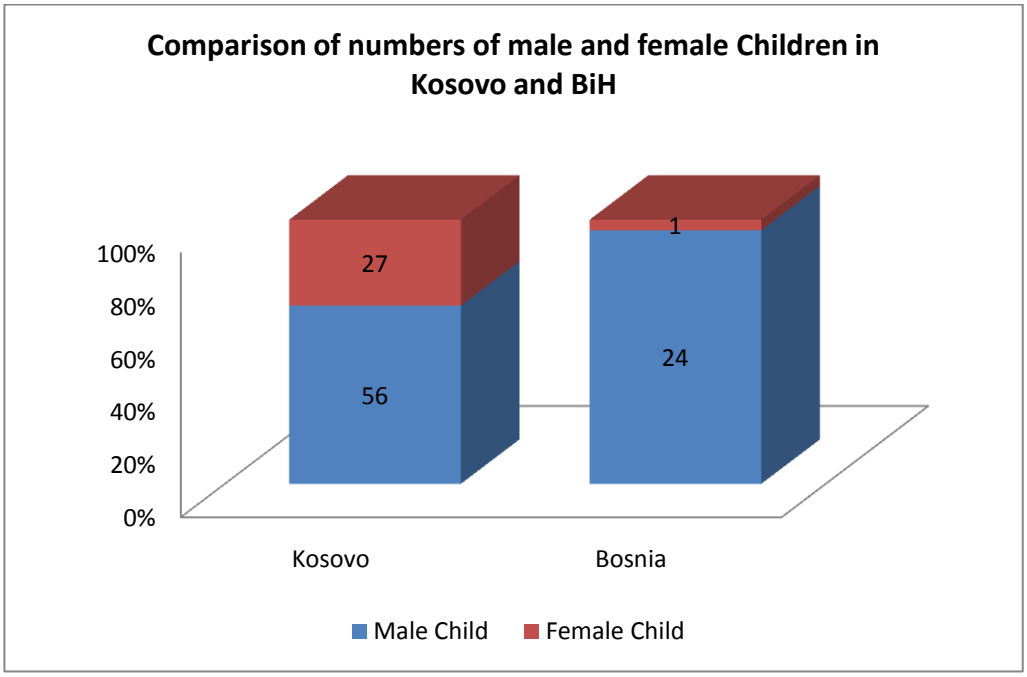


Figure 33: Numbers of male and female children in Kosovo and Bosnia-Herzegovina



It should be noted that where anthropology, i.e. bones, was used to determine sex, all children with the exception of one (an 11.5 yr old) were aged over 12 years and the majority were aged over 13.5 years. Tables 22 and 23 show the numbers of male and female children in each age group in Bosnia-Herzegovina and Kosovo. Figure 34 combines the data from Tables 22 and 23 to provide a comparison of the numbers of males and females within each age group in Kosovo and Bosnia-Herzegovina.

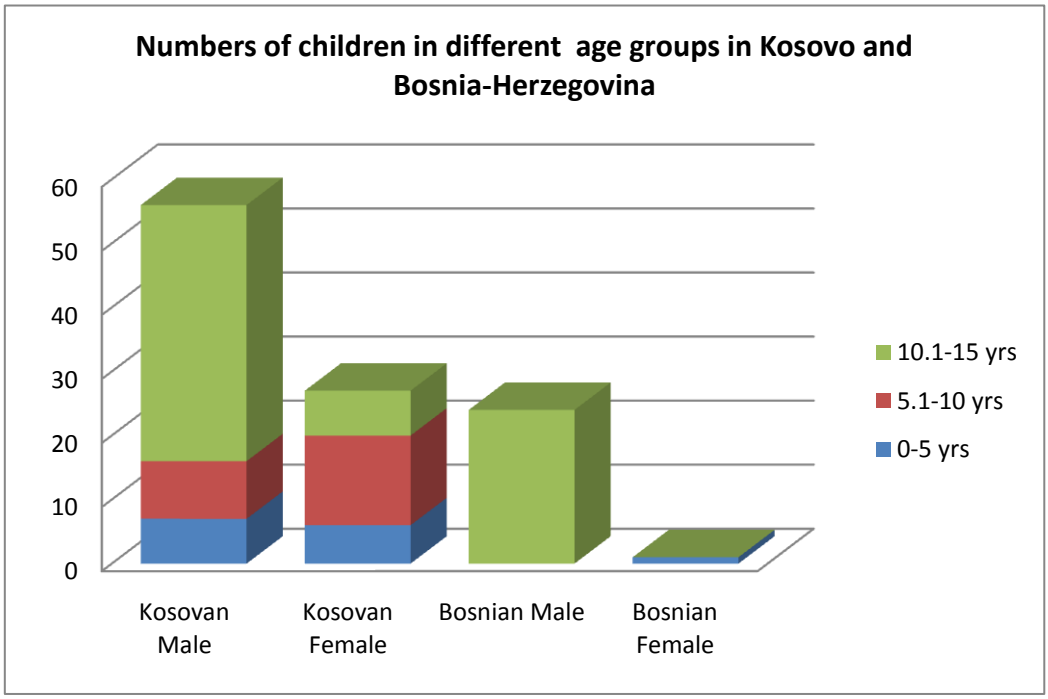
Table 22: Numbers of male and female children in each age group in Bosnia-Herzegovina

Age	**Male**	**Female**
0 to 5 years	0	1
5.1 to 10 years	0	0
10.1 to 15 years	24	0
Total	24	1

Table 23: Numbers of male and female children in each age group in Kosovo

Age	Male	Female
0 to 5 years	7	6
5.1 to 10 years	9	14
10.1 to 15 years	40	7
Total	56	27

Figure 34: Numbers of male and female children within each age group in Bosnia-Herzegovina and Kosovo



When the child deaths were sub-divided into 5 year intervals, there were some immediately obvious differences between the patterns of childhood deaths in Kosovo and Bosnia-Herzegovina. There was only one child of known sex aged less than 10 years in Bosnia-Herzegovina and that child was the only female amongst the 25, a 2 year old casualty of the shelling in Sarajevo (see Section 6.5). All other children of known sex were male and aged between 10.1 and 15 years. Whilst the oldest group also saw the greatest male bias in Kosovo, the situation amongst the 5.1 to 10 year olds was actually the reverse with more females than males being present. The numbers of males and females in the 0 to 5 year age range were almost equal with just a slight male bias.

Unfortunately the sex of the Bosnian children aged between 5.1 and 10 years (n=5) was unknown so comparisons could not be drawn between the relative percentage of males and female in this group compared to the older group and to children of the same age in Kosovo. With regard to those children of unknown sex in Kosovo, they were found in approximately equal percentages in each age range:

0 to 5 years old, n=19 (59%)
5.1 to 10 years old, n=35 (60%)
10.1 to 15 years old, n=62 (57%)

Without knowing the sex of these children it is not possible to say whether the percentages of males and females observed in Figure 34 are an accurate representation of the sex specific mortality patterns in Kosovan children, whether the sexes might have been more balanced across the age groups, or whether greater biases might have emerged in one or all three age ranges.

6.3. 2 Tentative Sex Based on Artefacts and Clothing

In the majority of cases because of the inherent problems associated with determining biological sex in juveniles (see Chapter Four, Section 4.2.3), the sex of those aged 15 years and under was established by soft tissue or through formal identification by surviving family members (see Figure 32 above). An assessment was also made, however, of sex which could tentatively be assigned by associated artefacts and clothing. Although this method cannot be taken as a primary means of sex determination, it can be of significant value providing the clothing or items are actually being worn or carried by the deceased, and it is formally recognised by Interpol as one of the secondary means of identification in their Disaster Victim Identification guidelines (Interpol, 2009).

Taking into account cultural norms, the following artefacts and clothing types were designated either male or female:

Male: Underpants, swimming trunks, male sized boots, smoking paraphernalia, e.g. flints, lighters, tobacco, tobacco tins, male style watches, pocket knife, razor, ID documents

Female: Dress, underskirt, bra, earrings necklaces and bracelets (particularly where they were multiple), ID documents

It was much easier to make these distinctions in adults and older children than it was in younger children as the personal effects and clothing owned by young boys and girls are often very similar and can be shared within families. Specific items such as female underwear, dresses, certain types of jewellery and smoking related items, helped to make older males and females more easily distinguishable.

Estimating a tentative sex based on clothing and artefacts could only be done with any degree of confidence in 53 adults and 7 children. Table 24 illustrates the results

Table 24: Tentative sex based on clothing and associated artefacts

	Kosovo	**Bosnia-Herzegovina**
?Male Adult	11	38
?Female Adult	4	0
?Male Child	0	4
?Female Child	2	1
Total	17	43

No additional male children and two additional female children were identified in Kosovo. One of the female children was from Banje, Malisevo, and the other was from the NATO cemetery in Prizren where civilian victims of the NATO bombing campaign were buried. Three of the additional four adult females who were assigned a tentative sex by clothing and associated items also came from the NATO Cemetery which suggests that their deaths were due to chance rather than them having been targeted.

All of the adults from Bosnia who were assigned a tentative sex were male, so this reflects the pattern observed in the biological data. Four additional possible male children and one additional possible female child were identified on the basis of clothing and artefacts, mirroring the male bias previously seen in the adult and child victims.

6.4 Location and Characteristics of Child Burial and Deposition Sites

6.4.1 Introduction

Chapter Three provided an overview of the sites in Kosovo and Bosnia-Herzegovina which had been investigated by ICTY. This section presents a more detailed analysis of the location and characteristics of each site where children were found and examines any trends and patterns relating to the age and sex of the children recovered from different sites.

Kosovo

In terms of the numbers of people of all ages killed in Kosovo, those municipalities which were most severely affected included Orahovac, Pristina and Prizren, closely follwed by Djakovica, Suva Reka, Glogovac, Srbica and Pec. There is evidence to suggest that some of these regions were targeted because of KLA associations, for cultural-historical reasons, or because they were particularly severely hit by the NATO bombing raids (Human Rights Watch, 2001: 444, 101; Judah, 2000a:140).

Those municipalities least affected in Kosovo included Gora, Obilic, Gnjlane, Vitina, Kosovska Kamenica and Kosovo Polje. The majority of these municipalities were close to the Serbian border and had relatively large Serbian populations compared to the southern and central regions of Kosovo which were dominated by Kosovar Albanians. It should, however, be noted that there were some regions close to the Serbian border, such as Podujevo, which did experience a relatively high number of murders and similarly there were areas such as Klina within the Drenica Valley, considered to be a KLA stronghold, which experienced relatively few murders. It is most likely that Gora was protected because it is almost completely surrounded by Albania and Macedonia, it is also populated predominantly by Muslim Slavs which may be significant.

There were some areas such as Decani, Vitina and Stimlje which werent close to the Serbian border but which seemed to have survived relatively unscathed in terms of overall numbers dead, particularly in comparison to their severely affected neighbours, Pec, Djakovica, Kacanik and Suva Reka. This has been interpreted simply as disorganisation

and an indication that Milosevic was losing control (LeBor, 2003: 290), but an alternative explanation, particularly with regard to child deaths, is considered in Section 6.4.2 and Chapter Seven, Section 7.1.

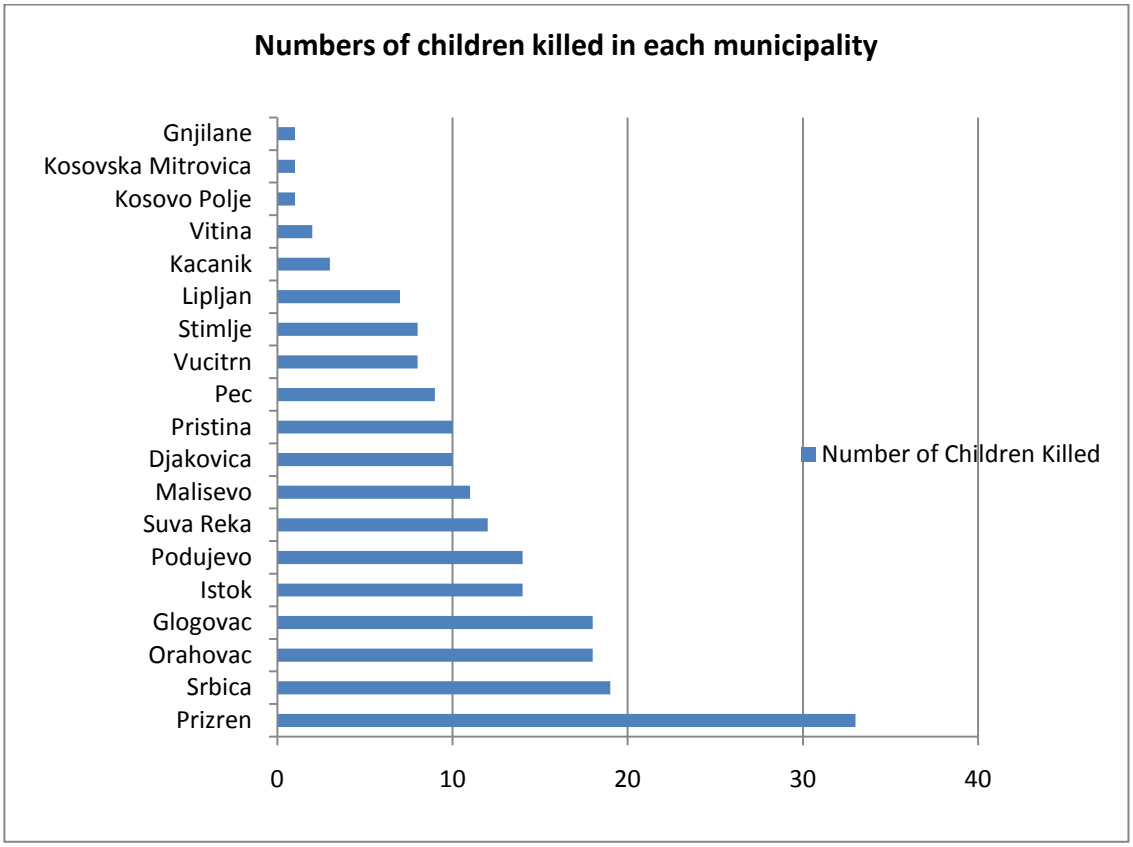
Bosnia-Herzegovina

In Bosnia-Herzegovina, as discussed in Chapter Three, almost all the bodies recovered and recorded by ICTY were from the north and the east, although crimes were reported across the country as a whole (ICTY, 2008b). Almost all the data which was submitted to The Hague relates to mass grave complexes and deposition sites and there was no detailed information which quantified the numbers killed in besieged cities such as Gorazde and Sarajevo. It is important also to re-iterate a key difference between the locations of the burial sites in Kosovo and those in Bosnia-Herzegovina, i.e., in Bosnia there was less of a correlation between the place where the victim lived and where he or she was murdered and buried. In Kosovo the majority of victims were killed and buried in or close by to their villages, whereas in Bosnia because the majority of victims were taken from their homes and held in detention centres before being executed and then taken to another place for burial, the location of the graves did not necessarily reflect the location of the murder or the place where the victim had lived. The situation was more complex still in many cases where remains had been removed from primary graves and re-buried in elsewhere in secondary graves.

6.4.2 Location of Child Graves and Deposition Sites in Kosovo

In Kosovo, individuals of all ages were recovered from 403 sites in 25 municipalities. Children were exhumed from 78 (19%) of those sites in 19 (76%) municipalities. Figure 35 shows the numbers of children killed in each municipality:

Figure 35: Numbers of children killed in each municipality in Kosovo



It can be seen from the graph above that the number of child deaths in each municipality varied greatly. In the municipalities where had been fewer deaths overall such as Gnjilane, Kosovo Polje, there were also low numbers of child deaths. However, in some of the municipalities where large numbers of deaths overall had been recorded, such as Pristina and Kacanik, there were fewer children than might have been expected. There were no children recovered from Obilic, Decani, Kosovska Kamenica, Gora, Urosevac and Klina.

The relative numbers and percentages of children and adults are illustrated in Figures 36 to 38. Due to problems with scale, the figures showing numbers of children and adults in each municipality are displayed as three separate graphs: those municipalities with more than 100 adult deaths, those with between 20 and 100 adult deaths, and those with less than 20 adult deaths. Figure 39 brings this information together illustrating the percentage of adults and children in each municipality, and Table 25 lists the municipalities in descending order in relation to percentage of child deaths.

Figure 36: Adult and child deaths in municipalities where number of adult deaths was greater than 100

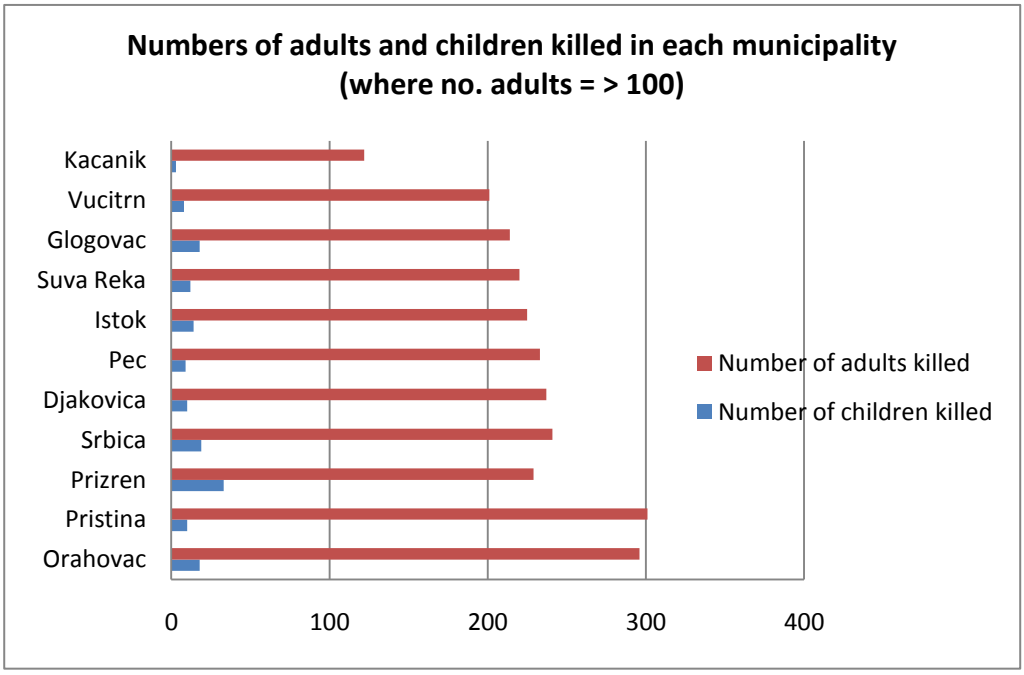


Figure 37: Adult and child deaths in municipalities where number of adult deaths was between 20 and 100

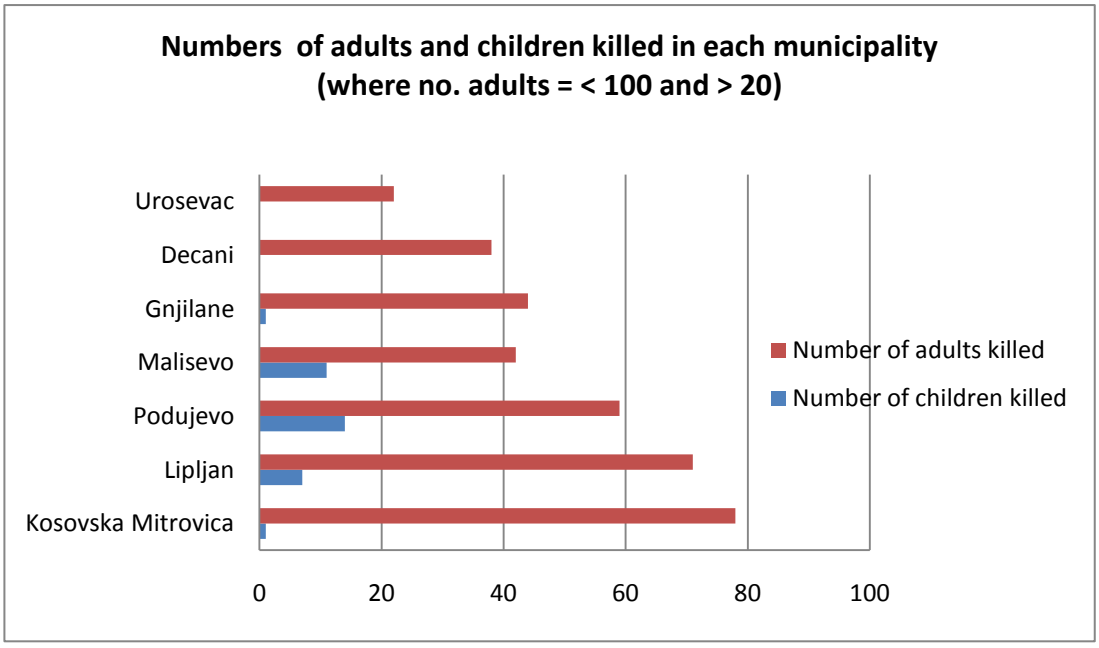


Figure 38: Adult and child deaths in municipalities where number of adult deaths was less than 20

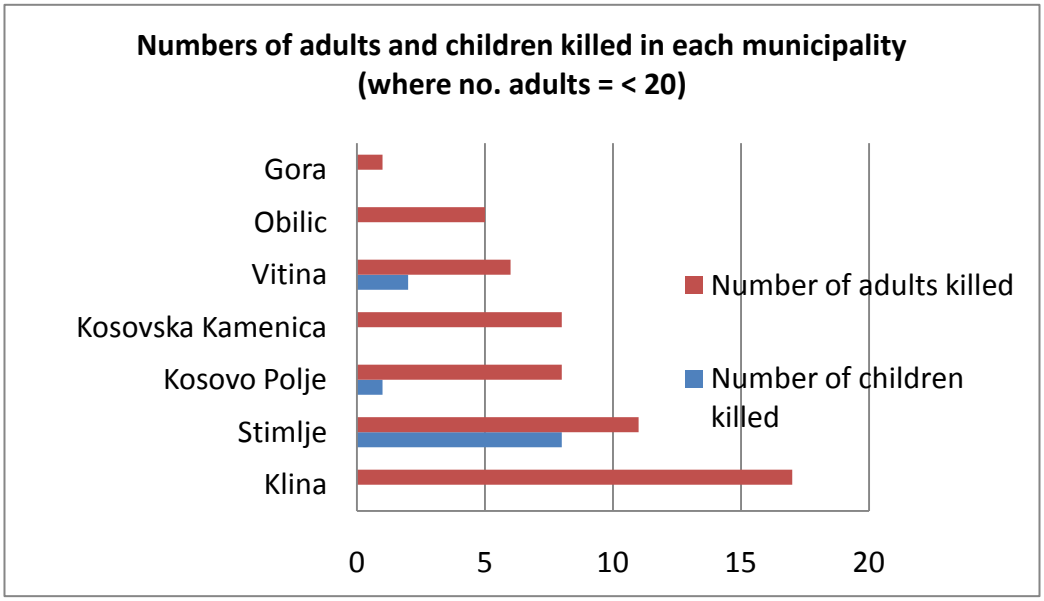


Figure 39: Percentage of children and adults killed in each municipality

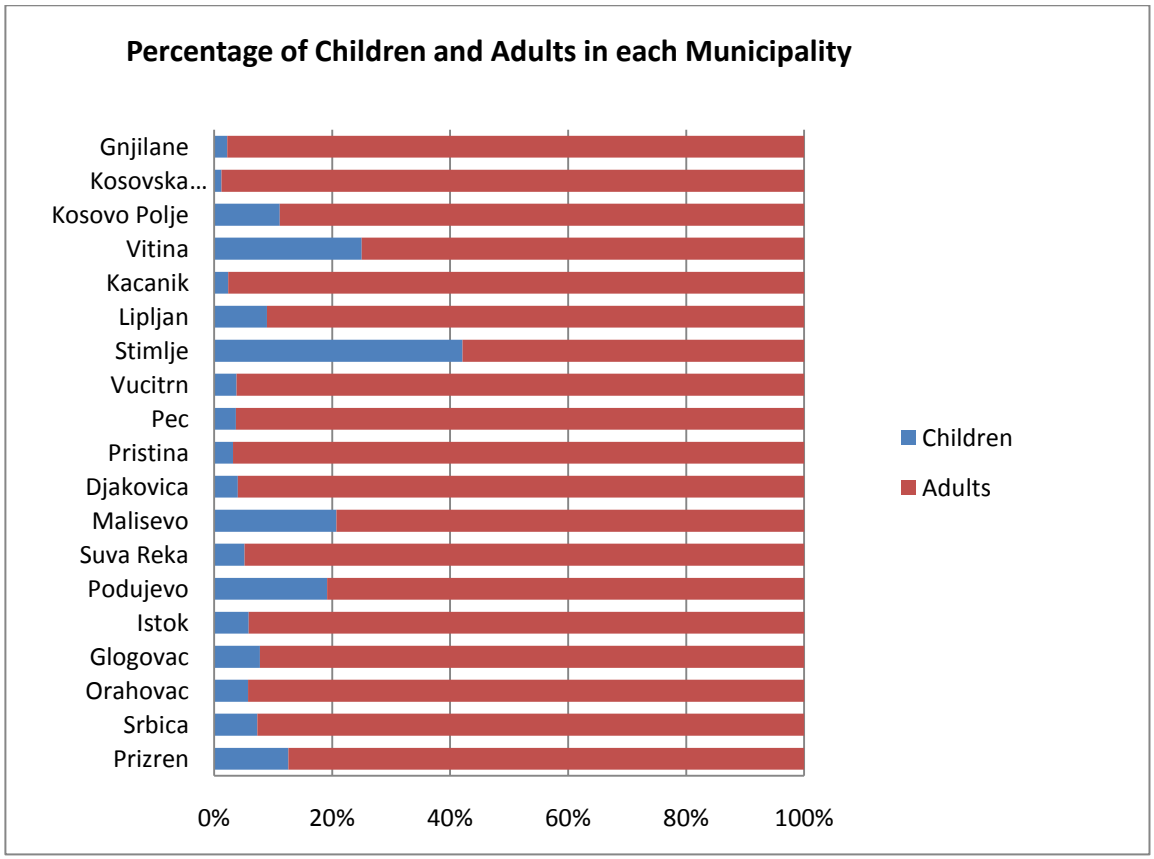


Table 25: Numbers of children and adults, and percentage of individuals of known age who were children, in each municipality.

Municipality	Number of children killed	Number of adults killed	% Individuals of known age who were children
Stimlje	8	11	42
Vitina	2	6	25
Malisevo	11	42	21
Podujevo	14	59	19
Prizren	33	229	13
Kosovo Polje	1	8	11
Lipljan	7	78	9
Glogovac	18	214	8
Srbica	19	241	7
Orahovac	18	296	6
Istok	14	225	6
Suva Reka	12	220	5
Djakovica	10	237	4
Pec	9	233	4
Vucitrn	8	201	4
Pristina	10	301	3
Kacanik	3	201	2
Gnjilane	1	44	2
Kosovska Mitrovica	1	78	1
Decani	0	38	0
Urosevac	0	22	0
Klina	0	17	0
Kosovska Kamenica	0	8	0
Obilic	0	5	0
Gora	0	1	0

With the exception of Prizren, there seems to be a general trend whereby those sites with the largest number of deaths of all individuals had smaller percentages of child deaths.

This is of course due in part to sample size, e.g. Pristina and Malisevo had approximately the same number of child deaths (n=10 and n=11 respectively), but the percentage of child deaths was much greater in Malisevo at 21% than it was in Pristina at 3%, simply because there were far fewer deceased overall in Malisevo than Pristina. Conversely some of the municipalities with low numbers of deaths, such as Stimlje and Vitina, showed the highest percentages of child deaths as even just one or two deaths made an impact.

The percentages become more significant however, when municipalities with approximately the same numbers of victims are compared. So if Stimlje is compared to Klina for example, Stimlje had 19 deceased of whom eight (42%) were children and Klina had 17 deceased of whom none (0%) were children. Podujevo had 73 dead of whom 14 (19%) were children whilst Kosovoska Mitrovica had 78 dead of whom only one (1%) was a child. Prizren also showed a far higher number and percentage of children than other municipalities, such as Pristina, Orahovac and Djakovica where the numbers of dead overall were comparable. When such striking discrepancies are evident it is necessary to look at what was happening specifically in that region to try and explain the figures.

In Prizren, the number of child deaths was increased by the accidental NATO bombing of civilians. Of the 74 people who were buried in what was called the "All NATO Cemetery" in Prizren, 22 (31%) of the 70 victims of known age were children. In the case of Podujevo, although it bordered with Serbia, it was recognised as one of the "seven operational zones" of the KLA (Human Rights Watch, 2001: 100) and it had been the scene of a deteriorating security situation with attacks and counter attacks between the KLA and the Serbian army and police between December 1998 and March 1999 (ibid: 59, 117). Kosovska Mitrovica also suffered from clashes between the KLA and Serbian security forces, but it was one of the more ethnically diverse municipalities (ibid: 117). Both Stimlje and Klina were in the same region geographically and both were recognised as being areas of KLA activity, but Klina, like Kosovska Mitrovica, was more ethnically diverse (ibid: 31, 100,117). This appears to indicate a link between the numbers of child deaths and population mix. Even where the number of fatalities was much higher overall, ethnic diversity appeared to be associated with reduced percentages of child deaths. For example in Glogovac, a KLA stronghold with a predominantly Kosovo Albanian population in the Drenica Valley, 214 bodies were recovered of whom 18 (8%) were

children. In Pec, however, which had a more mixed population, 233 bodies were recovered of whom only nine (4%) were children. This phenomenon was witnessed again in Pristina, the largest city in Kosovo, where only 10 (3%) of the 301 bodies exhumed were children.

This trend strongly suggests that the composition of a population, in terms of ethnicity, was a key factor in determining the level of violence directed at children and that the more ethnically diverse an area was the less likely children were to be killed.

6.4.3 Nature and Characteristics of Child Burial and Deposition Sites in Kosovo

The types of grave and deposition sites where children were found varied within and between municipalities, and they are described in detail below.

Prizren

The remains of 33 children were recovered from five sites in Prizren:

1. An individual grave in the village of Korisa
2. The "All NATO Cemetery" in the village of Korisa
3. An individual grave in Tusus Cemetery, Prizren
4. The "Firing Range" in Korisa, Prizren
5. An individual grave in a cemetery in Mamusa

Three of these sites were formal cemeteries in villages where victims had been buried by their families. The children exhumed from them were aged between 7.5 and 15 years, two were male and one was of unknown sex. The "All NATO Cemetery" was a cemetery of 74 graves containing victims of the NATO bombing campaign. Twenty two (31% of the 70 individuals of known age) of those killed were children who ranged in age from six months old to 14.5 years. Thirteen of the children were of unknown sex, five were male, three were female and one was a possible female. The "Firing Range" was a police firing range in Prizren. The bodies and body parts were recovered from a number of shallow craters and four hand-dug graves. The remains from the craters were commingled and each contained up to seven individuals, the graves contained one individual per grave. The victims are believed to be some of the 44 members of the Berisha family who were

executed in a café in Suva Reka on the 26th March 1999 (ICTY, 2001c: 9; 37; ICMP, 2004b). The rest of the remains of the family are believed to have been buried in a mass grave at Batajnica, near Belgrade (ICMP, 2004b).

Srbica

The remains of 19 children were recovered from 11 sites in Srbica:

1. Qirez Cemetery in Cirez
2. Kastrati Cemetery in Brocna
3. Rezalla Cemetery in Rezala
4. Deliu Cemetery in Rezala
5. Almeti Cemetery in Rezala
6. Limovc Cemetery in Rezala
7. Kladenica Cemetery in Kladernica
8. Kladenica 2, a cemetery in Kladernica
9. Krusevac Cemetery in Krusevac
10. Polac Cemetery in Poljance
11. Makermal Cemetery in Makrmalj

All of these sites were formal cemeteries where children were exhumed from individual graves. The children ranged in age from 5.5 to 15 years, six were male and 13 were of unknown sex. Many villages in Srbica, including some of the above, were attacked and destroyed by shelling and burning on and around the 25th March 1999 (ICTY, 2001c:6). According to the ICTY indictment many villagers were robbed and expelled, and many men were killed (ibid). It is clear from the forensic evidence that children as young as 5.5 years were targeted too, although because a large proportion of them were of unknown sex, it cannot be determined whether they were exclusively male.

Orahovac

The remains of 18 children were recovered from six sites in Orahovac:

1. Orahovac 1, a Cemetery in Orahovac
2. Velika Krusa, also known as Krushe e Mahde
3. Celine
4. Beledrum riverside, Mala Krusa
5. Bela Cerka
6. Brestovac Cemetery

Two of the Sites, Orahovac 1 and Brestovac Cemetery were formal cemeteries where the deceased were buried in individual graves. The other sites were of a completely different character, however. Bela Cerka, Velika Krusa, Mala Krusa and Celine are villages which were all attacked by Serbian and Fry forces who looted and burnt houses, rounded up and shot the men and boys and ordered the women and children to leave the villages and go to Albania (ICTY, 2001c: 5, 7). In Celine one 13 year old boy was found lying on the floor of a courtyard, in Velika Krusa an 11 year old child of unknown sex was found on the floor of an outhouse and a 15 year old child of unknown sex was recovered from a grave of unspecified type. In Mala Krusa a 15 year old, also of unknown sex, was found lying beside the river. In Bela Cerka Serbian and FRY forces attacked the village forcing many of the inhabitants to flee and take shelter under a nearby bridge (*ibid)*. According to the ICTY indictment, a Serbian police patrol opened fire on them killing 12, including women and children. The police then separated the men from the women and children and stripped, robbed and killed them, bringing the death toll to approximately 65 (*ibid*). The forensic data shows that seven children between the ages of six and 12 years were killed (the majority were less than 10 years of age), four of whom were female and three of whom were male. Prior to these incidents, Serb police had mounted a summer-long offensive during 1998 against KLA forces in the region (Human Rights Watch, 2001: 281).

Glogovac

The remains of 18 children were recovered from seven sites in Glogovac:

1. Terstenek Cemetery in Trstenik
2. Citakovo 1, Novo Cikatovo village
3. Citakovo 2, Novo Cikatovo village
4. Negrovce Cemetery in Negrovce
5. Poklek Cemetery in Poklek
6. Nekoc Cemetery in Nekovce
7. Verbotza grave site on the road to Kamenica, Verbotza

Five of the above sites are formal cemeteries where children were exhumed from single graves. Verbotza grave site is on the road to Kamenica, Verbotza, and comprised "18 grave sites which contained 15 bodies…killed by Serb forces and buried at this location" (Adams, 1999: 1). The victims had been identified and buried by family members or acquaintances (ibid). Five children aged 11.5 to 14 years were recovered from this site, all of them were male. The other two sites varied from the rest of the burial grounds; both were in the village of Novo Cikatovo but one location, from which an unidentified 13 year old child was recovered, was a field (there is no information relating to whether the child was buried or not) and the other location, from which a 15 year old was recovered, was recorded simply as a "trench" in the village (*ibid*). Both the victims were of unknown sex and both had been killed by multiple gunshot wounds.

Istok

The remains of 14 children were recovered from five sites in Istok:

1. The "Imeraj Family", a field in the village of Crkolez / Padalishte
2. Rakosh Cemetery, Rakos
3. Staro Dvorane Cemetery, Starodvorane Village
4. Temal Cemetery, Studenica
5. Open ground in Burim

Three of the locations were formal cemeteries where nine children were exhumed from individual graves. With the exception of one child they were all 15 years of age and of

unspecified sex. The single individual from Burim was a 15 year old male recovered from one of a series of graves in open ground in a remote rural area (Roberts 1999a). The remains found in the field at Crkolez belonged to the Imeraj famly. On the 27th March 1999, their village was attacked by forces of the FRY and Serbia. As the forces entered the village they opened fire on the houses and any villagers who were trying to escape, and they forced the Imeraj family from their home and killed them in front of it (ICTY, 2001c: 7). The ICTY indictment stipulates that eight members of the Imeraj family were killed (*ibid*), but the forensic data indicates that there were 19 in total. Cause of death was specified for 17 of the 19 individuals, and in 13 cases they were killed by a single gunshot wound to the head which suggests execution at close range and perhaps a deliberate targeting of that family. Four of those killed were children aged 2 to 15 years, the sex of whom was not recorded. It is not specified whether the remains were buried in the field or whether they lay on the ground surface.

Podujevo

The remains of 14 children were recovered from five sites in Podujevo:

1. Popovo cemetery in Podujevo
2. Podujevo Cemetery in Podujevo
3. Mirofc new Cemetery in Mirovac
4. Dyz Cemetery in Duz
5. Dumnice Cemetery in Donja Dubnica

Three of the sites, Podujevo, Mirofc and Dyz were formal cemeteries from which six children aged between 3 and 12.5 years, were exhumed. Three were of known sex, two males and one female. The children from Popovo cemetery were six of eleven victims of an alleged Serbian airstrike, five females and one male ranging in age from 1 to 11 years. The two graves from Donja Dubnice although recorded in the database as being from Dumnice Cemetery, are described as being two graves in a field next to a fence and a road, in a remote rural location.

Suva Reka

The remains of 12 children were recovered from seven sites in Suva Reka:

1. Suva Reka Cemetery, Suva Reka
2. Suva Reka Graveyard 2, Suva Reka
3. Budakovo Cemetery, Budakovo
4. Trnje Cemetery, Trnje
5. Landovice Cemetery, Grejkovce
6. Grejkovc New Cemetery, Grejkovce
7. Neperbishte Cemetery, Neprebiste

All the above sites are formal cemeteries, but it is not known to which specific incidents these burials relate. There was escalating violence in the Suva Reka municipality from the 20th March 1999 when the NATO bombing campaign began and OSCE withdrew their security forces (Human Rights Watch: 372). This culminated in FRY and Serbian forces surrounding the town of Suva Reka on the 25th March 1999, and sending in troops who murdered men, women and children, including the extended Berisha family whose remains were taken away to Prizren and Batajnica (*ibid*; ICTY, 2001c: 6). Twelve children were recovered from the cemeteries listed above. They were aged between eight and 15 years, five were male, two were female and five were of unknown sex.

Malisevo

The remains of 11 children were recovered from three sites in Malisevo:

1. A burnt out village in Caralluka
2. A single grave in a field in Banje
3. An open area near a farm at Domanek

Malisevo was targeted alongside Orahovac in the 1998 offensive against KLA forces who had a base there (Human Rights Watch, 2001: 281). The site at Caralluka comprised a burnt out house and a mass grave on a grassy slope outside the village compound. An ICTY investigation report stated that 27 people had been massacred in the village and that their remains had subsequently been buried by family members (Kristiansen, 1999). The victims had been rounded up inside one of the houses in the village, shot, and then the

house was set on fire. Most of the burnt remains were removed by family members and buried in a communal grave in the field outside the compound, there were however, fragments of burnt remains still present in the destroyed house and outside the windows of the house (*ibid*; Roberts 1999a). Collection of the remains from the house, excavation of the grave, and examination of the burnt commingled remains, indicated that a minimum number of 15 individuals were present, of whom at least nine were children (Roberts, 1999a). The children were aged between 1.5 years and 14.5 years, five were identified as male and four as female largely by discussion with family members and the association of personal effects and clothing (*ibid*). The child from Banje, a 9.5 year old possible female was exhumed from one of six individual graves on a hillside. The site at Domanek was described as an open area near a farm in a mountain village, no more detail is provided than that, but the remains recovered were those of a 12 year old male who was partially burnt. It is assumed that this was a single grave as there are no other individuals recorded from that site.

Djakovica

The remains of 10 children were recovered from six sites in Djakovica:

1. A Cemetery in Djakovica
2. A field in Rogovo
3. A Cemetery in Rogovo
4. An unspecified location in Meja
5. 157 Millosh Gillic Street
6. Hereq martyr Cemetery

Three of the sites were formal cemeteries, including Hereq Martyr Cemetery which included five graves of people who fled Herec (Hereq) during the war and went to the city of Djakovica. There were five children recovered from the cemeteries who ranged in age from 6.5 to 15 years. With the exception of one male, the sex of all the children was unrecorded. The site at 157 Millosh Gillic Street was an isolated house in Djakovica where the burnt and commingled remains of a minimum number of 19 individuals were found. This relates to an incident which took place on the 2nd April 1999, where Serbian police launched an operation against the Qerim district of Djakovica (ICTY, 2001c:8). They forcibly entered the homes of Kosovo Albanians, shot them and then set fire to their

houses. At 157 Millosh Gillic Street the 20 occupants of the house were shot in the basement and then the house was burnt down (*ibid*). The indictment states that 19 of these occupants were women and children and the forensic data indicates that three children of unknown sex aged 4, 5 and 14 years were amongst the remains. It is not specified whether the body recovered from the field in Rogovo was buried or not, just that it was near a cornfield along a river, the remains were those of a 14 year old child of unknown sex. Similarly, there is no information in the database regarding the burial context of the 12 year old child of unknown sex from Meja,

Pristina

The remains of 10 children were recovered from four sites in Pristina:

1. Dragadon Cemetery in Pristina
2. Makoc Cemetery in Makovac
3. Grashtice Cemetery in Grastica
4. A grave in Makoc

All four of the burial sites were cemeteries but they varied greatly in size. Dragadon cemetery is an extremely large municipal cemetery on the outskirts of Pristina, where the British Forensic Team worked for several weeks in 2000, exhuming a total number of 192 bodies (British Forensic Team, 2000). The site contained non-war crimes related burials, individual graves of victims of war crimes who had been buried by family members, and clandestine individual and mass graves dug by Serbian forces who had killed Kosovo Albanians and were attempting to hide the evidence (*ibid*). Seven children, aged 2 to 13.5 years are recorded as having been excavated from this cemetery. Only one of the individuals was of known sex, a 13.5 year old female. In addition to these children multiple bags of newborn babies, mostly described as foetuses but wearing hospital name bands, and in some cases umbilical cord clips, were recovered. There were seven bags of neonates from seven different graves containing a combined minimum number of 34 individuals (they were all complete but in some cases the number of individuals per bag was unstipulated). The presence of these babies was noted, but they were not recorded as separate individuals and their deaths were not presented as evidence to ICTY. This decision was documented as follows with regard to one group of infants:

> *"It must be stated that there was a number of infant remains recovered together with some hospital tags. The infants were collectively designated JA031/17. However, following investigation at the hospital it was clear that these were natural infant deaths and therefore no forensic autopsy was carried out following agreement with the SIO and Steven LEACH of ICTY"* (British Forensic Team, 2000: 4)

Grashtice Cemetery and Makoc Cemetery were smaller sites from which two female children were recovered, one aged 8.5 and the other 14.5 years. The other site at Makoc consisted of only three graves within a white-fenced enclosure on the top of a hill a few metres from the side of the road. One 13.5 year old child of unknown sex was exhumed from there.

<u>Pec</u>

The remains of 9 children were recovered from 5 sites in Pec:

1. Peje 1, Pec
2. Krumahu 6/10 Kristal, Pec
3. Nabergjan, Nabrdje
4. Ruhot
5. Zahac

There is no contextual information relating to two of the above sites "Pej 1", from which three children aged 6 to 12 years were recovered, and Zahac, a village where one 15 year old was exhumed. "Krumahu 6/10 Kristal" was a town house in Pec which had been set on fire. The burnt and commingled remains of six individuals were found inside, and one of them was a 2 year old child. It is probable that both the sites in the city of Pec relate to the activity of the 27th and 28th March when forces of the FRY and Serbia went from house to house forcing the Kosovo Albanians to leave, setting some houses on fire and shooting a number of people (ICTY, 2001c: 5). The sites at Nabrdje and Ruhot were cemeteries from which a 14 year old and a 15 year old child had been recovered. The sex of all of the children from Pec municipality was unknown.

Vucitrn

The remains of 8 children were recovered from 3 sites in Vucitrn:

1. Gerhaxliu Farm in Donja Sudimlja
2. Oshlan Cemetery in Vucitrn
3. Bivoljak Cemetery in Bivoljak

The remains from the two cemeteries comprised a 6 month old baby from Bivoljak and a 13.5 year old male from Oshlan. Both were buried in individual graves. Gerhaxliu farm, along with many other properties and villages in Vucitrn, was attacked by FRY and Serbian forces on the 2nd May (ICTY 2001c: 8). At least 104 people were killed in these attacks, and at least 12 members of the Gerhaxliu family were found dead (*ibid*: 32). Six of these were children, five male and one female, aged between 6 and 15 years.

Stimlje

The remains of eight children were recovered from just one site in Stimlje, This was a mass grave in a field on a hillside in the remote rural area of Rance. There were a total number of 11 victims in the grave who were partially burnt and suffering from blast injuries. The eight children were aged between 6 months and 14.5 years, three were female and the sex of the other five was not known.

Lipljan

The remains of seven children were recovered from three sites in Lipljan:

1. The lower cemetery in Slovinje
2. The village of Banjica
3. The village of Malo Ribare

Malo Ribare is a small rural village in Lipljan. On the 18 April, 1999 witnesses reported seeing a tank carrying paramilitary soldiers enter the village, firing at the villagers. Most of the population of the village escaped, but when they returned three days later they discovered that nineteen houses had been burnt down, eight people had been wounded and twenty-five killed (Canadian Forensic Team 1999a). The bodies of the deceased were buried in the village by their families and amongst the victims were four children aged

between 7 and 15 years, the sex of whom is not stipulated. The village of Slovinje was subjected to a similar attack on the 14th April 1999 when Serb tanks opened fire on the village, and the police, paramilitary and regular Serb Army attacked the inhabitants (Canadian Forensic Team 1999b). Many people were killed, some were buried immediately by their families and the bodies of some were taken away by Serbs and later returned to families, after which they were buried in the lower cemetery in the village (*ibid*). One of these victims was a 14 year old child of unknown sex. No details are given about the two burials from Banjica, other than the fact that they were the only two bodies from this site and they were both buried in coffins. They were children aged 10 and 12.5 years of unknown sex.

Kacanik

The remains of three children were recovered from three sites in Kacanik:

1. Dubrava
2. Stagovo
3. Lama

FRY and Serb forces attacked the village of Lama on the 13th April, the village of Stagovo on the 21st May, and the village of Dubrava on the 25th May 1999 (ICTY, 2001c: 9). Houses were looted and burnt and over 100 villagers were killed (*ibid*). In Dubrava, the body of a 9 year old child was recovered from a farm – the victim's home, in Stagavo a 7 year old was found in a field and in Lama a 15 year old victim was exhumed from the local cemetery. The sex of all of these children is unknown.

Vitina

The remains of two children were recovered from one site in Vitina, a field in the village of Steglavica. There is no further information about the context in which the deceased were found, but there were six victims in total from this site. The children were aged 9 and 4 years and their sex is not known.

Kosovska Mitrovica

One 13.5 year old child of unknown sex was recovered from Kosovska Mitrovica. He or she was exhumed from Vushtrii Cemetery along with 45 other individuals, most of whom

had died from multiple gunshot wounds. There are reports of Serbian and FRY forces attacking Kosovska Mitrovica over a period of two weeks from late March 1999. Houses were burnt, Kosovo Albanians were robbed of their valuables and identity documents, expelled and forced to go to Albania (ICTY, 2001c: 5). The ICTY indictment does not stipulate that villagers were killed, but the forensic evidence above indicates that they were.

Kosovo Polje

One child, a 9 year old male was exhumed from a single grave in the village of Lismer, Kosovo Polje. It was located in a small grassy area just outside some farm buildings in a rural area. He had died of blood loss, secondary to a gunshot wound, over a period of several hours. No other victims were identified at this site.

Gnjilane

The remains of a 2 year old child of unknown sex were excavated from an isolated house in Vlastice, Gnjilane. He was amongst 12 other victims and he or she and the others had all been shot.

Table 26 summarises the details regarding the number of sites in each municipality where children were found, and the age at death, sex and numbers of children from each municipality.

Table 26: Kosovo sites and burial contexts: numbers of children recovered and their age at death and sex

Municipality and no. sites	**Burial contexts**	**No.**	**Sex and Age**
Prizren 5 sites	Four sites: cemeteries, individual graves One site: police firing range, craters in open ground	33	11 male (0.5-15 yrs) 4 female (2-8 yrs) 18 sex unknown (0.5-15 yrs)
Srbica 11 sites	All sites: cemeteries, individual graves	19	6 male (12-15 yrs) 13 sex unknown (5.5-15 yrs)
Orahovac 5 sites	Two sites: cemeteries, individual graves Three sites: open ground and floors of buildings and courtyards	18	4 male (4-13 yrs) 4 female (6.5-12yrs) 10 sex unknown (0.5-15yrs)
Glogovac 7 sites	Five sites: cemeteries, individual graves One site: unknown context in field One site: "trench" in village	18	11 male (3-15 yrs) 7 unknown sex (0.5-15 yrs)
Istok 5 sites	Three sites: cemeteries, individual graves Two sites: burials or depositions in fields	14	1 male (15 yrs) 13 unknown sex (2 to 15 yrs but almost all are 15 yrs)
Podujevo 5 sites	Three sites: cemeteries, individual graves Two sites: single burials in fields	14	4 male (3.5-12.5 yrs) 6 female (1-11.5 yrs) 4 unknown sex (9-13 yrs)
Suva Reka 7 sites	All sites: cemeteries, individual graves	12	5 male (13.5-15 yrs) 2 female (10-12 yrs) 5 sex unknown (8-14.5 yrs)
Malisevo 3 sites	One site: mass grave and house Two sites: individual graves in fields	11	6 male (1.5-15 yrs) 4 female (5-9 yrs) 1 unknown sex (9.5 yrs)
Djakovica 6 sites	Three sites: cemeteries, individual graves One site: unknown context in field One site: isolated house	10	1 male (15 yrs) 9 unknown sex (4-14 yrs)

Pristina 4 sites	Three sites: cemeteries, individual graves One site: cemetery, individual and mass graves, some clandestine	10	3 female (8.5-14.5 yrs) 7 unknown sex (2-13.5 yrs)
Pec 5 sites	Two sites: cemeteries, individual graves One site: town-house Two sites: unknown contexts	9	All sex unknown (2-15 yrs)
Vucitrn 3 sites	Two sites: cemeteries, individual graves One site: Farmhouse	8	6 male (6-15 yrs) 1 female (6yrs) 1 unknown sex (0.5 yrs)
Stimlje 1 site	Mass grave on hillside	8	3 female (1-11.5 yrs) 5 unknown (0.5-14.5 yrs)
Lipljan 3 Sites	All sites: cemeteries, individual graves	7	All unknown sex (7-15 yrs)
Kacanik 3 Sites	One site: farmhouse One site: field One site: cemetery, individual grave	3	All unknown sex (7-15 yrs)
Vitina 1 site	Unknown context in field	2	Unknown sex (4-9 yrs)
Kosovska Mitrovica 1 site	Cemetery, individual grave	1	Unknown sex (13.5 yrs)
Kosovo Polje 1 site	Individual grave outside farm building	1	Male (9 yrs)
Gnjilane 1 site	Isolated house	1	Unknown sex (2 yrs)

Some sites and indeed entire municipalities seemed to be quite different in character to others in terms of the burial and deposition types encountered. There were those where all the deceased were buried in individual graves in formal cemeteries, e.g. Srbica, Glogovac and Suva Reka, which differed from those municipalities such as Orahovac and Malisevo where the majority, if not all, of the victims were found lying on floors in burnt out buildings, courtyards, or in fields. In many remote areas of municipalities such as Glogovac, Lipljan and Stimlje, individual graves had been dug in fields or small new cemeteries had been created specifically for those killed by Serbian and FRY forces.

There does appear to be a direct correlation between grave type and how urbanised an area was, and it not surprising to find that more of the deceased killed in large towns or cities such as Pristina and Suva Reka, were buried in formal cemeteries. This did not always follow a strict pattern however and there was an element of "randomness" to the burials, demonstrated by the moving of the 44 bodies of the massacred Berisha family from Suva Reka to a 'dumping ground' at the police firing range in Prizren, and a mass grave in Serbia. Most of the municipalities in Kosovo have both rural and urban components, and it certainly seems that Serb and FRY forces engaged in killing sprees, looting and burning properties to a greater extent in the countryside than they did in the towns and cities. There, the killings and disposal of remains seemed to be more organised, for example, in the case of the Berisha family and the patients who were murdered in Pristina Hospital, and mass expulsion seemed to be the *modus operandi*.

Further details relating to how children were actually buried in Kosovo were recorded in the **GRAVEFORM** table. This information was available for 111 of the 199 children, from 13 of the 19 municipalities where child deaths were identified. There was no data in the **GRAVEFORM** table which related to the Bosnian children. Table 27 summarises the information relating to mode of interment.

Table 27: Burial contexts of 111 children in Kosovo

	Grave in Cemetery	**Ground surface or building floor**	**Mass grave**	**Unspecified context village or field**
Number of Children	48	17	9	9

Thirty two of the above children were buried in coffins. Eight of these were male and aged between 12.5 and 15 years, two were female aged between 3 and 8.5 years, and 20 were of unknown sex and aged between 6 months and 14.5 years.

Sixty were wrapped in blankets or sheets and 20 of these were also in coffins. Fourteen of those wrapped in blankets were male, aged between 10 and 15 years, seven were female

aged between 5 and 14.5 years (but mostly less than 10 years old), and 39 were of unknown sex and aged between 6 months and 15 years.

Nineteen children were buried in a traditional *Drasa*, a grave in which a void is created over the body by the placement of wooden planks at an oblique angle and the planks are then covered over with earth as in a coffin burial. In the majority of cases the deceased are also wrapped in blankets. Two of these *Drasa* burials were male, aged 10 and 14.5 years, two were female, aged 2 and 14.5 years and 15 were of unknown sex, aged between 6 months and 13.5 years.

The orientation of the grave was recorded in 69 cases: In 65 out of 69 cases this was recorded as "West", which presumably meant the head in the west, so the deceased were facing east and Mecca in traditional Muslim style. Three of the remaining burials were recorded as being orientated east and one, south.

Seventeen of the children, aged 5 to 15 years, were described as clothed, six, aged 8 to 14.5 years, were partially clothed, five, aged 5.5 to 15 years, were naked and there was no description of clothing for the remaining children. The sex of only five of these children could be determined; a male and a female who were partially clothed, a male who was naked, and two males who were clothed.

6.4.4 Location of Child Graves and Deposition Sites in Bosnia-Herzegovina

In Bosnia-Herzegovina, individuals of all ages were recovered from 17 sites, all of which were in the northern and eastern parts of the country, and the majority of which were concentrated around the Srebrenica region. Data-sets, which included the age at death of all individuals were available from 15 sites, and children were recovered from 12 (80%) of those sites. There were no remains of children found at Lazete, Nova Kasaba and Konjevic Polje.

Many of the grave sites in Bosnia-Herzegovina were actually complexes made up of a number of mass graves. For example, the site at Glogova comprised nine mass graves which contained between six and 91 bodies (Wright 2001:5). Data were available from 38 individual graves at the complexes and 17 of them were found to contain children. As the

separate graves are not named in all of the database entries, the findings relating to the sites are discussed in terms of the complex as a whole, thus for example Zeleni Jadar which was a complex of seven secondary mass graves (Zeleni Jadar 1-7) is referred to simply as Zeleni Jadar. There were some grave complexes where individual records were available for one grave or excavation season, but not for another. Unfortunately, as discussed in Chapters Three and Five, there was nothing that could be done about this without access to the primary records.

Figure 40 shows the numbers of children exhumed from the 12 sites in Bosnia-Herzegovina. Due to the big discrepancy between the numbers of children and adults at some of the larger sites it was not possible to display the adult and child data together on one graph in a meaningful way, therefore this information is recorded in tabular form in Table 28. It should be re-iterated that these numbers relate only to data that was recorded in the **PATHOLOGY AND ANTHROPOLOGY** Table.

Figure 40: Numbers of Children at Sites in Bosnia-Herzegovina

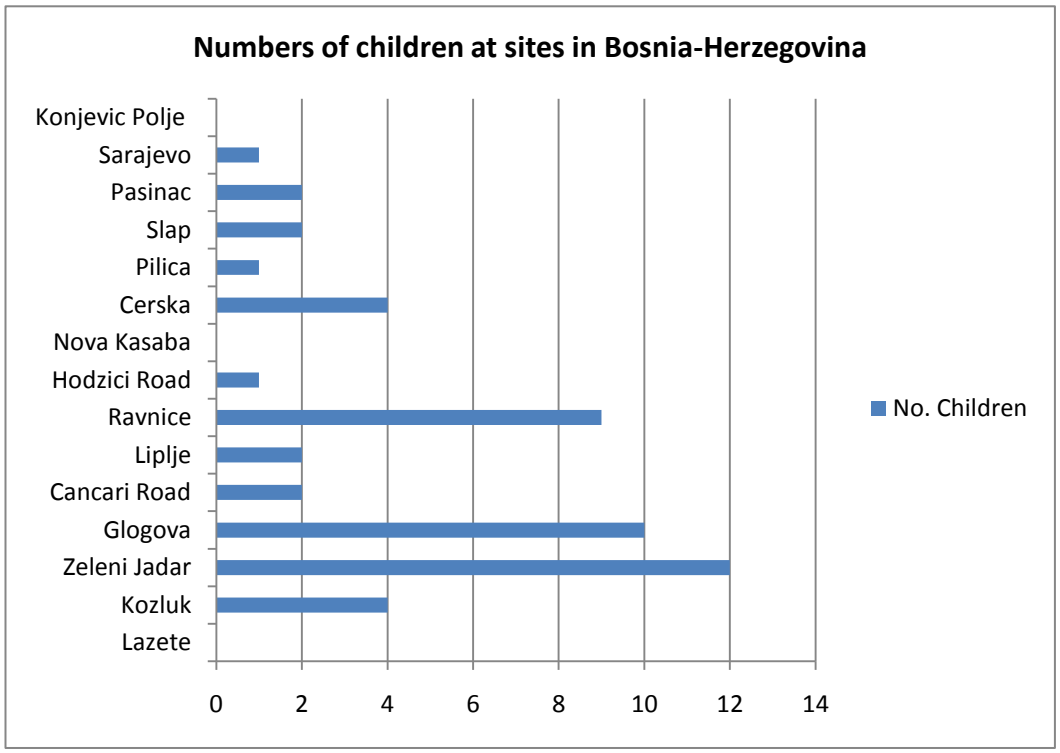


Table 28: Numbers of children and adults and percentage of individuals of known age who were children at each site.

Site	Number of known children	Number of known adults	Number of unknown age	% individuals of known age who were children
Kozluk	4	2	521	66.6
Liplje	2	2	Data not available	50
Sarajevo	1	1	Data not available	50
Pasinac	2	3	51	40
Slap	2	4	126	33.3
Cancari Road	2	4	Data not available	33.3
Hodzici Road	1	3	Data not available	25
Zeleni Jadar	12	426	19	2.7
Cerska	4	145	2	2.7
Ravnice	9	459	27	1.9
Glogova	10	538	253	1.9
Pilica	1	121	14	0.8
Lazete	0	151	34	0
Nova Kasaba	0	1	56	0
Konjevic Polje	0	0	13	0

From the table above it can be seen that the percentages of children at each site ranged from 0 to 66.6%, however, those sites with the highest percentage of children also had a large number and percentage of individuals who were of unknown age. As such, the percentages of child deaths at sites where the majority of individuals were of unknown age are far less meaningful than at other sites where more information relating to age was available. Based on the patterns observed at those sites it is extremely unlikely that the high percentages of child deaths are truly representative of the real situation.

At Glogova where a substantial number of individuals were of known age but there was still a large number whose ages were unknown, the percentage of children was similar to that at Zeleni Jadar, Cerska and Ravnice, where there were relatively few individuals of unknown age. This suggests that at Glogova, those of known age constituted a sufficiently

valid sample size for the figures to be reasonably accurate. It also indicates that there was not a huge variation in terms of the numbers and percentage of children found at the large grave complexes, and the figure appears to be consistent at between approximately 1 and 3%. The situation could be entirely different in Sarajevo and even at the cemetery sites of Pasinac and Slap, where the deceased were reportedly people from the local towns of Prijedor and Visegrad (respectively). Certainly the children identified at those sites were considerably younger than those found in the mass grave sites so this could suggest a different pattern would be evident if the autopsy reports were available for scrutiny.

There were three sites, Lazete, Nova Kasaba and Konjevic Polje, where no children were identified. Nova Kasaba and Konjevic Polje were both undisturbed primary graves so at face value these findings could be taken as representative of the true situation at those sites. Unfortunately, however, as the ages of all the deceased (with the exception of one adult from Nova Kasaba) were unknown, little significance can be placed upon them. At Lazete the situation is different as the majority of the victims were of known age therefore the fact that no children were present is more noteworthy, particularly when the findings are compared to those from Cerska, a site with a broadly comparable number of victims, where the percentage of children present was 2.7%. The reason for this cannot be discerned from the forensic evidence alone; both sites were in the Srebrenica region of Bosnia-Herzegovina, and both were primary mass graves although Cerska was undisturbed (like Nova Kasaba and Konjevic Polje) and Lazete had been "robbed", thereby introducing the possibility that any children originally there might have been removed.

6.4.5 Nature and Characteristics of Child Burial and Deposition Sites in Bosnia-Herzegovina

The 15 grave sites from which some age and sex data was available are described below.

Pasinac Cemetery Grave Site

Pasinac Cemetery is located near Prijedor in the northwest of Bosnia-Herzegovina in what is now the Bosnian Serb entity. Prior to the war the city's population was roughly 42.5% Serb and 44% Muslim (Stover and Weinstein, 2004: 8). In April 1992, Bosnian Serb residents took control of Prijedor and destroyed the Catholic Church and the Mosques. Over the following two months the Muslim population were subjected to arrests, torture, rape, expulsion and imprisonment in the infamous Omarska, Keraterm and Trnoplje concentration camps (*ibid*).

The ICTY team excavating the site at Pasinac were informed that the cemetery allegedly contained the bodies of victims of a number of incidents which took place in the Prijedor area in 1992, and that it possibly included some victims from the prison camps (Clark, 2000a). Fifty six graves were exhumed from the cemetery and two children of unknown sex were identified, one was 5.5 years and one was 9 years old.

Slap Grave Site

The burial site at Slap was located near Zepa in the Drina Valley, eastern Bosnia-Herzegovina, in what is now the Bosnian Serb entity. It consisted of two groups of burials; 125 graves in the main cemetery and a small group of seven burials on the river bank a few kilometres downstream (Clark, 2001a).

The cemetery was alleged to have contained the bodies of people killed in and around Visegrad in 1992 (*ibid*). The city became well known during the war because Muslim citizens were tortured, killed and thrown off the Ottoman bridge over the River Drina (Sells, 1998; Zuvela, 2010). The location of the executions is thought to be symbolic as the bridge is famous in Serb folklore as the place where a Serbian hero had been impaled by a Turk in the 16th century (Sells, 1998: 19)

The bodies of the victims in the cemetery had been recovered from the River Drina by local people who had buried them, marking the graves with wooden posts inscribed with the name of the deceased (Clark, 2001a). Two children aged 9.5 and 13.5 years were exhumed from the cemetery.

Cerska Grave Site

The Cerska site was situated adjacent to a narrow unpaved road in the Cerska Valley in eastern Bosnia-Herzegovina. It was a single undisturbed mass grave and it was relatively shallow with bodies being encountered at a depth of 50 cm (Haglund, 1998: vii). It was interpreted as a primary grave, i.e. it was the first and only burial place of the deceased, and it contained 151 bodies all of whom were male, and four of whom were children aged 14 and 15 years. The victims were thought to be from the mass executions at Srebrenica (*ibid*).

Glogova Grave Site

The Glogova site consisted of nine graves situated on a dirt track off the Konjevic Polje to Bratunac Road near the village of Glogova, in the Srebrenica region of eastern Bosnia-Herzegovina (ICTY, 2001d: 9). The site at Glogova 1 was excavated in 2000, Glogova 2–6 were excavated in 1999, and Glogova 7–9 were excavated in 2001 (*ibid*; Clark, 2001: 12).

Glogova 1 comprised "six areas of primary disposal of human remains (graves or parts of graves) and places where robbing attempts had been made to remove bodies" (Wright 2001:5). The six graves and a ditch (which contained one body) were labelled C, E, F, H, J, K and L. The graves contained between six and 91 bodies, with an average of 32 bodies per grave (*ibid*). Glogova 2 is described as being a primary mass grave with Glogova 7 and 9 as its "sub-graves" (Manning, 2003: 20). It was found to be heavily disturbed on excavation and was made up of at least six smaller sub graves (*ibid*). Based on the analysis of forensic evidence from the mass graves, including pollen and soil, it was identified as the primary grave for Zeleni Jadar 5. It was also concluded that at least some of the victims were killed at the Kravica warehouse mass execution point (ICTY, 2001d: 9).

All the graves at the complex were primary graves, i.e. they were the first burial location of the deceased, and some had been disturbed (Clark, 2001: 12). Ten children aged between 12 and 15 years were recovered from the site and all of those of known sex were male.

Zeleni Jadar

The Zeleni Jadar grave complex consisted of seven graves along the Zeleni Jadar road in the Srebrenica region of eastern Bosnia-Herzegovina. Forensic evidence including painted and plastered concrete, steel and metal pieces, indicated that they were secondary to the graves at Glogova, i.e. they contained some of the remains of the deceased who had been executed at Kravica warehouse and initially buried at Glogova (ICTY, 2001e: 4). Six of the graves were excavated and found to contain human remains, and one was not examined "for security reasons" (ICTY, 2001d: 10).

Zeleni Jadar 2 was excavated in part and found to contain sparse but multiple body parts. It was apparent that it had been disturbed and that remains from it had been removed to a third location or tertiary grave (*ibid*). The only site from which a full data set was available was Zeleni-Jadar 6. It was a large mass grave in a grass covered field measuring 22 x 3.8 metres and it appeared that not all of the grave area had been used (ICTY, 2001e: 4). This suggests that the grave had been dug prior to the mass executions which took place at Srebrenica, thereby demonstrating intent on the part of the perpetrators.

Although there are no detailed reports available relating to the exhumations and analysis of remains from Zeleni Jadar 1, 2, 3, 4, and 5, preliminary investigation and partial excavation of them in 1998 showed that all contained multiple body parts (Wright, 1999: 10). The remains of 12 children aged between 10 and 15 years were recovered from the site at Zeleni Jadar. All the children of known sex were male.

Cancari Road

The site at Cancari Road in the Srebrenica region of eastern Bosnia-Herzegovina comprised a complex of 12 graves. Cancari Road 1 to 6, and 8 to 12 were probed in 1998 and found to contain multiple body parts (Wright, 1999: 7). Cancari Road 7 was investigated in 1996, and also found to contain multiple body parts (*ibid*). Cancari Road 3 (CR03) and Cancari Road 12 (CR12) were excavated by ICTY teams and, based on

analysis of pollen and soil, glass, shell cases, blindfolds and ligatures, it was concluded that CR03 was a secondary grave to Kozluk, and CR12 was a secondary grave to the site at Branjevo Military Farm / Pilica (ICTY, 2001d: 8; Barayber, 1999: 8; Manning, 2003: 13).

ICTY reported that a minimum number of 332 bodies were exhumed from Cancari Road (ICTY, 2001d: 8). Two of those of known age were children aged 10.5 and 11.5 years. Both were of unknown sex.

Liplje

There were four known graves along the Liplje Road in the Srebrenica region of Eastern Bosnia-Herzegovina (ICTY 2001d: 8). Liplje 1 was examined by investigators in 1996 and Liplje 2, 3, and 4 were examined in 1998. All four sites were found to contain multiple human remains (Wright, 1999:10). Liplje 2 was excavated in full in 1998 and thought to contain a minimum number of 191 individuals (ICTY 2001d: 8). Two were identified as male children aged 12.5 and 13.5 years.

Liplje 2 was identified as secondary to the grave at Petkovci Dam (also known as Red Dam) in the Srebrenica region, which had been robbed but still contained the "residue of grossly disarticulated body parts" (Wright, 1999: 7)

Hodzici Road

There were seven known graves along the Hodzici Road in the Srebrenica region of eastern Bosnia-Herzegovina. All seven were examined in 1998 and all except Hodzici Road 1 were found to contain multiple body parts (Wright, 1999: 9). Hodzici Road 1 was described as "a still open grave that was dug for burial but never used" (*ibid*). As was the case at Zeleni Jadar, this demonstrates "intent" and highlights the organised manner in which the executions and burials were planned and carried out.

Hodzici Road 3, 4, and 5 were excavated in full in 1998 and contained a combined minimum number of 184 individuals (ICTY, 2001d: 7). All three graves were thought to be secondary to the grave "Lazete 2" (ICTY, 2001d: 7), having been linked by matching soil and pollen samples, shell cases and cloth ligatures and blindfolds (Manning, 203: 13).

There was no age and sex data available for the vast majority of the remains from Hodzici Road but one individual was identified as a male child aged 13.5 years.

Pilica Mass Grave (also known as Branjevo Military Farm)

Pilica grave, also known as Branjevo Military Farm, was situated in the north of the Srebrenica region (Haglund, 1996b: ix; Manning, 2003: 4). It was a single, deep, primary grave located at the periphery of a large cultivated field, approximately 130 metres north of a complex of farm buildings (Haglund, 1996b: ix). The grave had been dug by machine and was of a sufficient size to accommodate up to several hundred persons (*ibid*). The grave had been 'robbed' and was linked to the secondary mass grave Cancari Road 12 by matching soil and pollen samples and cloth ligatures and blindfolds (Manning, 2003: 13). There was also evidence of animal scavenging at the site in the form of damage to the skeletal remains and paw prints in the mud next to the bodies (Haglund, 1996b: 2)

Two hundred and sixty four "discrete collection units" of human remains were recovered (*ibid*), and a minimum number of 137 individuals were identified, all of whom were recorded in full in the forensic database. One of these individuals was a child, a male aged 14.5 years.

Kozluk Mass Grave

Kozluk was a single, primary mass grave site located adjacent to the Drina River near the town of Kozluk in the Srebrenica region of eastern Bosnia-Herzegovina (ICTY, 2001d: 9). The site is approached by passing through Kozluk and travelling past the 1995 base of the VRS Drina Wolves Detachment that is adjacent to a bottling factory (*ibid*). Prior to it being made into a grave the site was quarried for gravel and also used as a rubbish dump, particularly for green glass bottles from a nearby factory (*ibid*). Those broken bottles, together with river stones, pollen and soil, shell cases, cloth blindfolds and ligatures, were used to link the site to Cancari Road 3 (*ibid*; Manning, 2003: 13). It is thought that the site was used as an execution as well as a burial site (ICTY 2001d: 9) and, as at Lazete, this is reflected in the number of shell cases found at the site. Four children were identified at the site, all of whom were male and aged between 13 and 15 years.

Ravnice

The site at Ravnice was a primary undisturbed deposition site located along a dirt road leading to the village of Adzici from the nearby Konjevic Polje to Bratunac Road, close to the Glogova mass grave complex (ICTY, 2001e: 8). The bodies at Ravnice had been dumped down a steep wooded embankment and were not actually within a dug grave (*ibid*). There appeared to have been two episodes of activity relating to this; the first group of bodies had been dumped and covered with soil taken from the opposite side of the road by mechanical digger, then a second group had been dumped on top of the first (*ibid*; Clark, 2001: 6). Some of the bodies had been caught up in trees and a fence line along the middle of the slope, and some had subsequently become dispersed over a wide area (ibid). The site was searched and excavated in 2000 and 2001 by teams from ICTY and the Bosnian Commission for Missing Persons. Nine children aged between 10 and 15 years were recovered, two were male and the sex of the others was unknown.

Nova Kasaba Grave Site

Nova Kasaba grave site was located close to Nova Kasaba Village, off the Konjevic Polje to Bratunac Road, in the Srebrenica region of eastern Bosnia-Herzegovina. On the opposite side of the road was a meadow which is thought to have been an execution field (ICTY, 2001d: 5). The site consisted of four undisturbed primary mass graves which were excavated in 1996 and 1999 (*ibid*; Manning, 2003b). Summary information in the ICTY report documented that 33 male victims were exhumed from the site (*ibid*: 6). There is no age and sex data relating to those individuals except for one 16 year old male. There is nothing in the literature to indicate that the execution and burial sites at Nova Kasaba were linked to any of the other grave or execution sites in the Srebrenica region.

Konjevic Polje.

The site at Konjevic Polje was located in a field off the Konjevic Polje to Nova Kasaba Road in the Srebrenica region of eastern Bosnia (ICTY, 2001d: 10). It comprised two primary undisturbed sites; Konjevic Polje 1, a shallow grave with an access ramp, suggestive of having been dug with a "front end loader", and Konjevic Polje 2 which consisted of two shallow hand-dug graves (*ibid*). Konjevic Polje 1 contained nine individuals, eight males and one female, and Konjevic Polje 2 contained three individuals, two in one grave and one in the other. The presence of smaller hand dug graves and also of a female, was unusual amongst the mass grave complexes of Srebrenica. Bullets found

in situ in the graves indicated that they were execution as well as burial sites. No children were identified at the site, but the ages of the deceased had not been specified in the forensic database.

Lazete

There were two mass graves at the Lazete site; Lazete 1 and Lazete 2. Lazete 1 was located in a waterlogged field adjacent to the roadway leading from the Grbvaci school and alongside a dirt track leading to railway tracks and the Lazete 2 grave (ICTY, 2000: 4). Both sites were execution sites and disturbed primary mass graves and Grvbaci school had been used as a detention centre to hold those who were subsequently executed at Lazete (*ibid*). In addition to the two large mass graves there was an area between them with "sub-graves" which were designated Lazete 2 A, B, and C. The graves at Lazete were primary to the Hodzici Road 3, 4, and 5 graves, linked by evidence including pollen and soil, black plastic piping, shell cases and blindfolds (*ibid*; Manning, 2003: 13). The site yielded a huge amount of ballistic evidence, some 15,555 items in total, most of which were empty shell cases. The graves were thought to contain at least 147 individuals (ICTY, 2000: 4), none of whom were children.

Sarajevo

Estimates of numbers killed in Sarajevo vary greatly depending on who, or which, agency is reporting the crimes. An ICTY case sheet summarising the crimes and conviction of Stanislav Galic for his role in the three year siege of the city states that it "resulted in the killing of hundreds of men and women of all ages, including children and the wounding of thousands" (ICTY 2009). Other reports claim that "At least 12,000 civilians including 1,500 children were killed during the 44-month siege of Sarajevo" (Srebrenica Genocide Blog, 2010; michael-averko, 2009).

There are reports of snipers deliberately targeting children and shelling of civilian gatherings, including residential streets where children were playing, picnics, market places and a soccer game (ICTY, 1995a: 5). Those killed during these incidents are believed to have undergone routine post-mortem examinations at the Sarajevo State Hospital performed by local doctors rather than pathologists who were part of ICTY teams (Clark *pers comm*.). The death certificates of two victims from Sarajevo were, however, available for review and entry into the forensic database. One related to an 18

year old male (Vuletic, 1995) and the other a two year old female (Kasumagic, 1995). Both died as a result of blast injuries (*ibid*; Vuletic, 1995). Table 29 looks more closely at the age of the children at the grave sites described above.

Table 29: Grave type, age at death and sex of children from Bosnia-Herzegovina

Site and Grave Type	No. children	Age at Death and Sex
Cancari Road Complex of 12 secondary mass graves	2	11.5 yrs unknown sex 10.5yrs, unknown sex
Cerska single undisturbed primary mass grave	4	14 yrs x 3, male 15 yrs, male
Glogova Complex of 9 disturbed primary mass graves	10	15 yrs x 4, all male; 14 yrs x 2, one male one unknown sex; 13.5 yrs x 3, one male two unknown sex; 12 yrs, unknown sex
Hodzici Road Complex of 7 secondary mass graves	1	13.5 yrs, male
Kozluk Single disturbed primary mass grave	4	13 yrs x 2, male 14yrs, male 15 yrs, male
Liplje Complex of 4 secondary mass graves	2	12.5 yrs, male 13.5 yrs, male
Ravnice Primary undisturbed "dump site" on embankment	9	15 yrs, male 14.5 yrs x 2, both unknown sex 14 yrs unknown sex 13.5 yrs unknown sex 12 yrs x 2, both unknown sex 11.5 yrs, male 10 yrs, unknown sex

Pilica Single disturbed primary mass grave	1	14.5 yrs, male
Pasinac Undisturbed individual graves in cemetery	2	9 yrs, unknown sex 5.5 yrs, unknown sex
Zeleni Jadar Complex of 7 secondary mass graves, some thought to have been disturbed	12	15 yrs x 4, 2 male and 2 unknown sex; 14.5 yrs x 3, all sex unknown; 14 yrs male 13.5 yrs x 2, unknown sex; 12.5 yrs, male 10 yrs, unknown sex
Slap Undisturbed individual graves in cemetery	2	9.5 yrs, unknown sex 13.5 yrs, unknown sex
Sarajevo Individual grave in city	1	2 yrs, female

From the information above it can be seen that youngest children, aged between two and nine years, were all buried in individual graves in Sarajevo, Slap and Pasinac Cemeteries. There were victims as young as 10 years at the mass grave sites at Zeleni Jadar and Ravnice, and victims aged 10.5 and 11.5 years in the mass grave complex at Cancari Road. As discussed in the previous section, the vast majority of children found at the mass grave and deposition sites were, however, aged between 13 and 15 years. For example, nine out of the 10 children exhumed from Glogova were aged 13.5 years or older (the other one was 12 yrs old), the four victims from Cerska were 14 or 15 years old and the four from Kozluk were 13 yrs or older.

This may be illustrating the point that these children were actually regarded as "adult" by the perpetrators or it could be possible, particularly if they were tall for their age, that they were thought to be older. In order to investigate the latter hypothesis, the stature data was examined. Unfortunately the stature of only eight of the 50 children from Bosnia-Herzegovina had been recorded, most probably because the remains were skeletonised or damaged therefore full body length could not be measured – there are currently no widely accepted methods for calculation of stature from individual immature bones (see Chapter

Four, Section 4.2.4). The children whose stature had been recorded were all male and all had a mean height of 172 cm or greater (5'6"), with one 14.5 yr old measuring 184 cm (6') and one 15 yr old measuring 187 cm (6'1") in height. Research which involved applying stature formulae consistently to the Srebrenica population revealed that the vast majority of the victims were of similar stature, between 170-180 cm (Simmons and Haglund, 2005: 166). All of the children fitted comfortably within this range and some exceeded it, indicating that it would have been hard to distinguish them from adults on the basis of height alone.

The significance of the numbers and relative percentages of children at the different sites, including the total absence of child remains from some, was discussed in section 6.4.3, and there appeared to be no readily identifiable reason as to why children were present in some of the graves and not others. There were no clear patterns relating to whether grave sites were primary or secondary, disturbed or undisturbed and it was also difficult to make direct comparisons between some of the sites where there were large percentages of individuals for whom age at death was not known or not recorded.

6.5 Cause of Death

6.5.1 Introduction

The problems associated with determining cause of death in decomposed, skeletonised incomplete, fragmented and burnt remains were discussed in detail in Chapter Four, Sections 4.2 and 4.3. These relate to the absence of soft tissue making it impossible to see bleeding and fatal damage to organs, missing body parts which might be the site of a fatal injury, and the distortion and fragmentation of bones which might obscure an underlying fatal injury. As such, determination of cause of death is strongly related to the condition and state of preservation of the remains which are being examined.

In all cases in the integrated forensic database cause of death was recorded as one or a combination of the following:

1. Gunshot injury
2. Blast or shrapnel injury
3. Sharp force trauma
4. Blunt force trauma
5. Other, which might include such things as drowning, burns or fire injury, strangulation or asphyxiation, trauma of unknown origin, and natural causes such as atherosclerosis.
6. Unascertained, which might also be recorded as undetermined or unknown

In 2,743 (43%) of the 6,384 cases, cause of death could not be ascertained. This figure relates to all individuals; adults, children, and those of unknown age from both Kosovo and Bosnia. In Bosnia-Herzegovina cause of death could not be ascertained in 1,484 (52%) of all individuals; 916 (49%) of the 1,862 adults and 20 (40%) of the 50 children. In Kosovo cause of death was undetermined in 1,259 (36%) of all individuals; 781 (27%) of the 2,937 adults and 49 (25%) of the 199 children. Cause of death and injury types in children in both countries are examined in more detail below together with summary data for those aged over 15 years for the purposes of comparison.

6.5.2 Cause of Death in Children and Adults

Bosnia-Herzegovina

Tables 30 and 31 illustrate the causes of death in males and females in Bosnia-Herzegovina and causes of death in males and female children within the different age groups.

Table 30: Cause of death in male and female children of all ages in Bosnia-Herzegovina

	No. killed by gunshot	**No. killed by gunshot and blunt force**	**No. killed by blast injuries**	**No. in which cause unascertained**
Male	15	2	2	5
Female	0	0	1	0
Unknown Sex	9	0	1	15

Table 31: Cause of death in children from Bosnia-Herzegovina, a comparison between age groups

Age Range (years)	**No. killed by gunshot**	**No. killed by gunshot and blunt force**	**No. killed by blast injuries**	**No. in which cause unascertained**
0-5	0	0	1 female	0
5.1-10	4 unknown sex	0	0	1 unknown sex
10.1-15	15 male 5 unknown sex	2 male	2 male 1 unknown sex	5 male 14 unknown sex

If the unascertained deaths are removed from the figures above, cause of death could be determined in 30 of the 50 children from Bosnia-Herzegovina. Of these, 26 deaths (86.4%) were caused by gunshot (in a small number of cases blunt force trauma was also sustained) and four (13.3%) were caused by blast injuries. For the purposes of comparison, cause of death in older teenagers (15 to 18 years) and adults over 18 years from Bosnia-Herzegovina was examined. The results are shown in Figure 41, and a table containing this information can be found in Appendix Two. As with the children, there were a number of adults in whom blunt force trauma had also contributed towards death and these are examined further in Section 6.5.3. Figure 42 shows cause of death in the same age groups but minus those individuals in whom cause of death was unascertained.

Figure 41: Causes of death in Bosnia-Herzegovina: children, 15 to 18 year olds and adults over 18 years

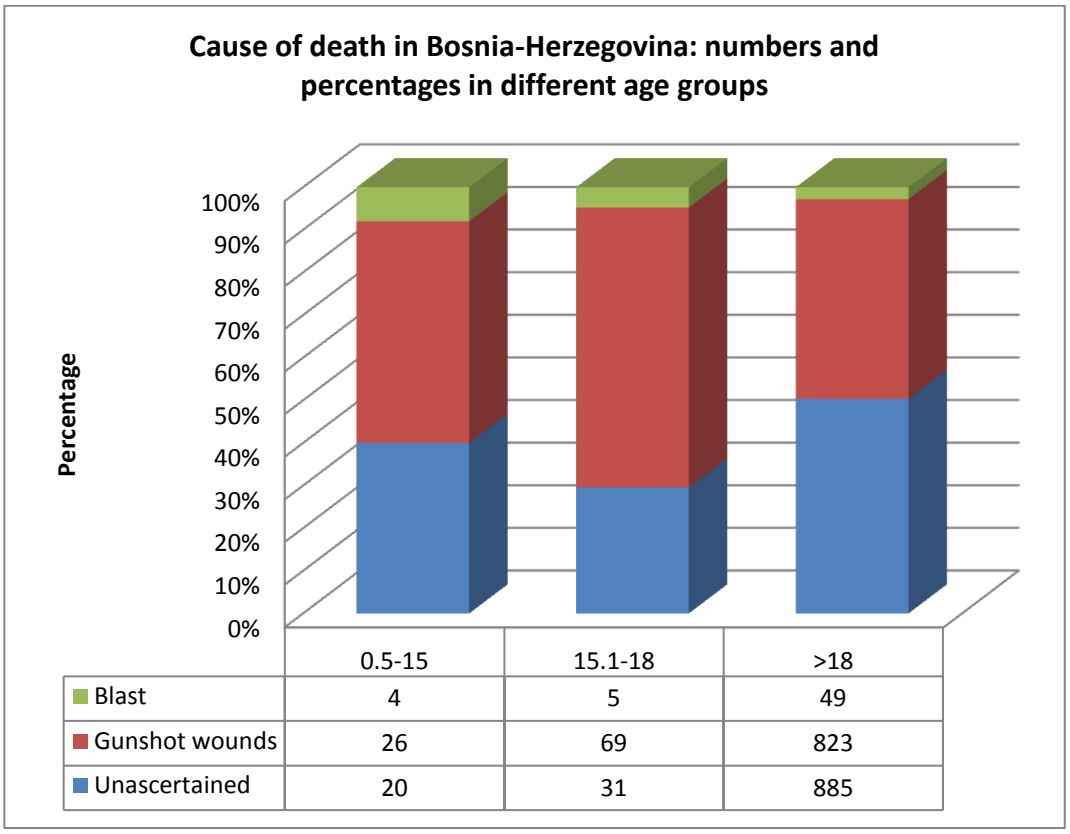
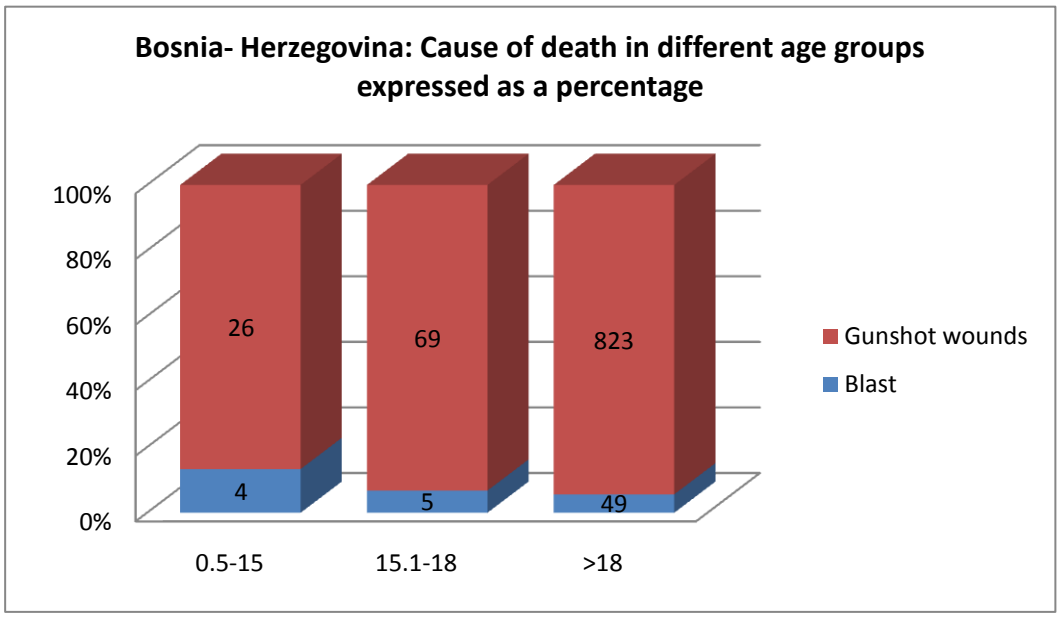


Figure 42: Causes of death in Bosnia-Herzegovina, with unascertained deaths removed: children, 15 to 18 year olds and adults over 18 years



Where cause of death was known, the percentage of those who died from gunshot wounds was 93% in 15 to 18 year olds and 94% in adults over 18 years of age. The children however had a lower percentage of deaths attributed to gunshot injuries at 86.7% although the smaller sample size (n=50) should be taken into account.

The adult figures are comparable to those reported by the Chief Pathologist for ICTY in his summary report on the findings from Ravnice where 92% of all individuals had conclusively died from gunshot wounds (Clark, 2001: 11). He reported slightly different findings at Glogova where fewer deaths (69%) were caused by gunshot wounds and more (14%) were caused by blast injuries, the remainder being killed by both blast and gunshot (ibid: 22). At Zeleni Jadar, there were more deaths of unknown cause (12%) but the figures were still broadly comparable with 84% of individuals having died from gunshot wounds and 4% from blast injuries.

Kosovo

The causes of death in children were generally more diverse in Kosovo compared to Bosnia-Herzegovina, as illustrated in Table 32. Table 33 compares causes of death within the different age groups.

Table 32: Cause of death in children of all ages from Kosovo

Cause of Death	**Male**	**Female**	**Unknown Sex**	**Total**
Unascertained	7	3	39	49
Gunshot	36	12	47	95
Blast Injuries	7	11	26	44
Blunt force trauma	2		2	4
Sharp force trauma	1			1
Gunshot and Blast	1		1	2
Gunshot and Blunt Force	2		1	3
Gunshot and Sharp Force	1			1

Table 33: Cause of death in children from Kosovo, a comparison of age groups

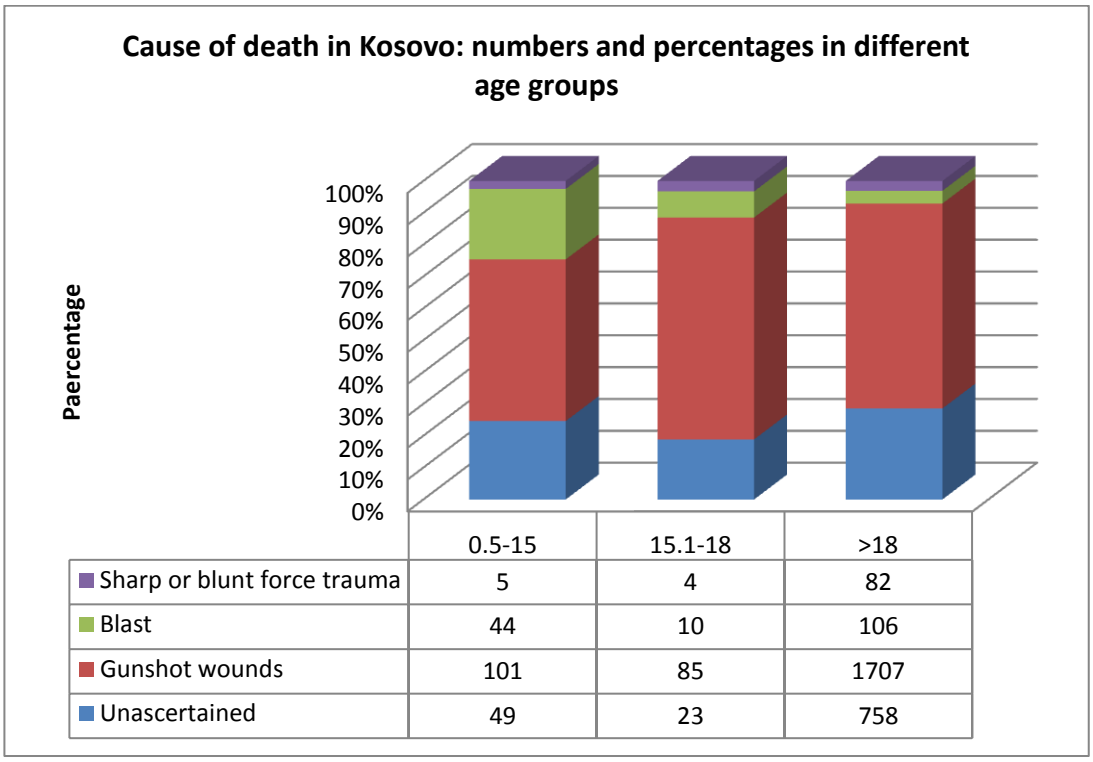
Age (years)	Blast	Gunshot	Gunshot and Blast	Gunshot and Blunt or Sharp Force	Blunt or Sharp Force	Unascertained
0-5	3 male 2 female 7 unknown	4 male 2 female 2 unknown	1 unknown			1 male 2 female 8 unknown
5.1-10	3 male 5 female 8 unknown	6 male 8 female 12 unknown		1 unknown		1 female 14 unknown
10.1-15	2 male 5 female 11 unknown	26 male 2 female 32 unknown		3 male	2 male 3 unknown	8 male 15 unknown

If the unascertained deaths are removed from the figures above, cause of death could be determined in 150 of the 199 children from Kosovo. Of these, 101 deaths (67%) were caused by gunshot alone or gunshot in combination with another injury type, 44 deaths (29%) by were caused by blast alone and 5 (3%) were caused by blunt and sharp force trauma alone.

For the purposes of comparison, cause of death in older teenagers (15.1 to 18 years) and adults older than 18 years from Kosovo was examined. As with the children the causes of death were more diverse than those observed in Bosnia-Herzegovina. The results are shown in Figure 43, and a table containing this information can be found in Appendix Two. Figure 44 illustrates the findings if those individuals in whom cause of death was unascertained are removed from the figures.

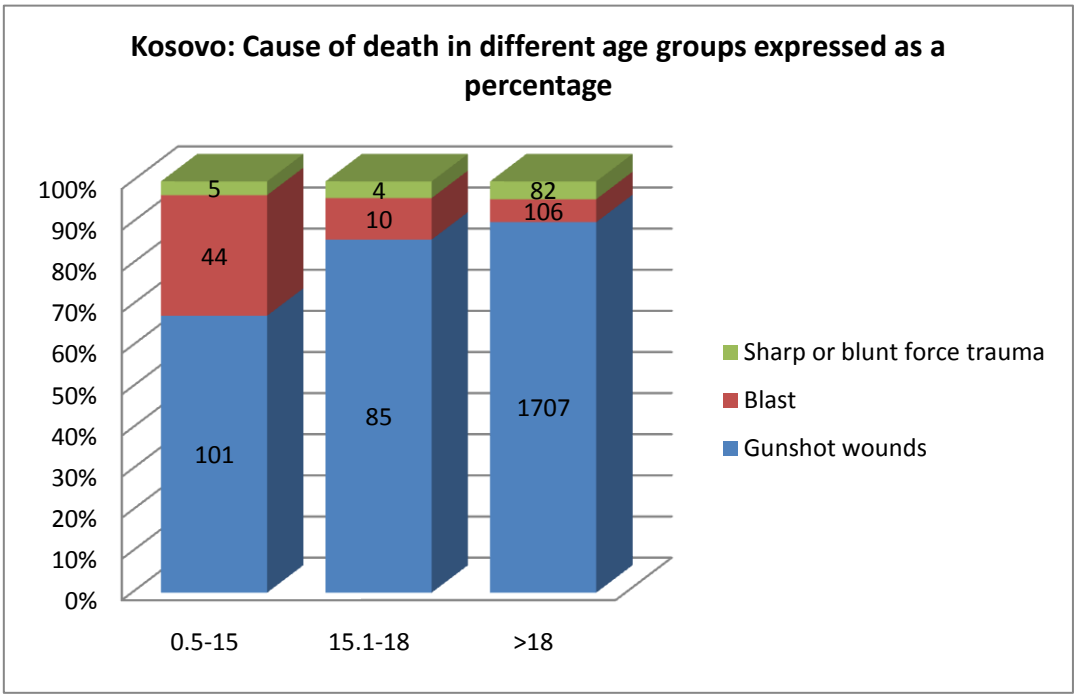
Figures 43 and 44 do not contain information relating to the few individuals whose cause of death was assigned “Other”, and the category “Gunshot wounds” includes deaths which resulted from gunshot wounds in combination with other injury types. Where death was caused by other injury types alone, these are recorded as such. Miscellaneous causes of death and death caused by multiple injury types are discussed in more detail in Sections 6.5.2 and 6.5.3.

Figure 43: Cause of death in Kosovo: comparison between children, 15 to 18 year olds and adults older than 18 years



	0.5-15	15.1-18	>18
Sharp or blunt force trauma	5	4	82
Blast	44	10	106
Gunshot wounds	101	85	1707
Unascertained	49	23	758

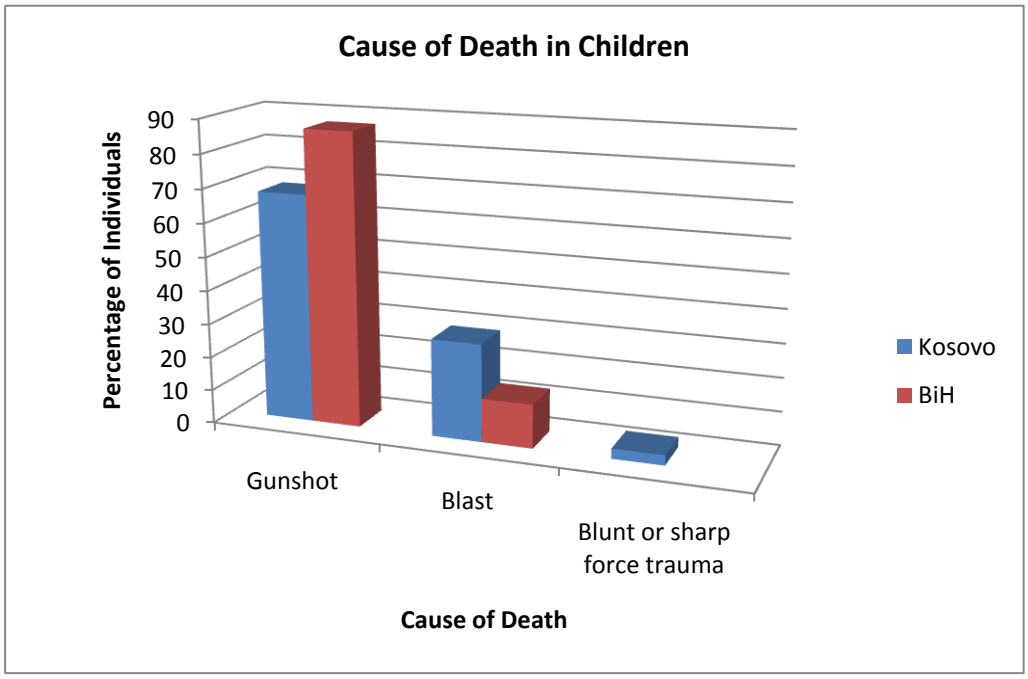
Figure 44: Causes of Death in Kosovo, with unascertained deaths removed: children, 15 to 18 year olds and adults over 18 years



It can be seen from the information above that in the 15.1 to 18 years age group, 86% of those of known cause of deaths, died as a result of gunshot wounds. This is less than the figure seen in the same age group in Bosnia but almost 20% higher than the frequency of 67% observed in the children in Kosovo. In adults over 18 years, 90% of those with a known cause of death died from gunshot wounds, almost comparable to the figure of 94% seen in adults from Bosnia-Herzegovina and much higher than the percentage observed in children from Kosovo.

Figure 45 compares the causes of death in Kosovo with those in Bosnia Herzegovina, illustrating the differences between the two countries. In Bosnia-Herzegovina, "Gunshot" includes the two deaths caused by gunshot and blunt force trauma. In Kosovo, "Gunshot" includes the two deaths caused by gunshot and blast, the three deaths caused by gunshot and blunt force trauma, and the one death caused by gunshot and sharp force trauma.

Figure 45: Bosnia-Herzegovina and Kosovo, comparison of cause of death in children



The findings indicate that the majority of children in Bosnia-Herzegovina were killed by gunshot with comparatively few being killed by blast. However, it is necessary to take into account that this data relates primarily to mass grave sites and that the deaths from

besieged towns and cities which were heavily shelled (ICTY 1995a; ICTY 1999; Heleta, 2008; Halilbegovich, 2008: 50) is not being captured.

The smaller discrepancy between deaths caused by blast injuries and those caused by gunshot in children from Kosovo, almost certainly reflects the pattern of fighting during the conflict as civilians came under attack from both NATO bombs and Serbian and FRY forces shelling their villages (ICTY, 2001c). The greater percentage of children in comparison to adults, who died as a result of blast injuries particularly in Kosovo, perhaps reflects the fact that young children are less able to escape quickly and independently from areas under attack. They are also often more curious, less aware of danger and therefore more likely to encounter hidden and unexploded ordnance.

6.5.3 Numbers and Location of Injuries in Children

In order to more closely examine any trends and patterns with regard to cause of death, an assessment was made of the number of injury sites each child had and the location of those injury sites. The number of injuries on a body can provide a good indication not just of the cause of death, but of the manner and circumstances in which the crime was committed. For example, if a victim was part of a mass killing spree using semi-automatic weapon fire, then multiple injury sites throughout the body might be expected. Alternatively if one or several individuals were targeted in an execution style manner then a single gunshot wound to the head would be more typical. The number, location and type of injuries might also be indicative of torture if multiple injury types were present and the sequence of injuries can be established.

Bosnia-Herzegovina

The number of injuries sustained was unknown in 34% (n=17) of the 50 children from Bosnia-Herzegovina. Where the number of injuries was known (n=33), seven children (14%) had single injuries and 26 (79%) had multiple injuries. It was possible for an individual to have a number of injury sites resulting from a single injury depending on the position they were in at the time of the attack. In instances such as this, the number of injuries was still recorded as "single" as the terminology is meant to reflect the number of assaults, e.g. shots or blows inflicted on the individual.

All of the seven single injuries seen in children from Bosnia-Herzegovina were caused by gunshot and in all cases the children affected were aged between 13.5 and 15 years of age. Four of the affected individuals were male and three were of unknown sex. Table 34 illustrates the age and sex of the children killed by single injuries in Bosnia-Herzegovina, the location of the injuries is summarised in Table 35.

Table 34: Summary of children from Bosnia-Herzegovina with single injuries

	Blast	**Gunshot**	**Blunt force trauma**	**Sharp force trauma**
0-5 years	0	0	0	0
5.1-10 years	0	0	0	0
10.1-15years	0	4 male 3 unknown sex	0	0

Table 35: Location of single gunshot wounds / injuries in children from Bosnia-Herzegovina

Age (years)	**Head and / or neck**	**Chest / thorax**	**Abdomen / pelvis or lower back**	**Arm or leg**
0-5				
5.1-10				
10.1-15	1 male	1 male 1 unknown sex	2 male 1 unknown	1 unknown sex

The majority of these single injuries were to the upper or lower torso. Although the sample size is small this appears to be a different pattern to that observed in children from Kosovo (see Table 39). That all the children affected were aged between 10 and 15 years is not surprising as the majority of children were within this age group. What this information perhaps does show is that younger children (and indeed the older ones) were not being singled out for "execution style" single gunshot wounds to the head.

In 17 of the 26 cases where multiple injury sites were identified they had been caused by gunshot. In five cases the injuries were caused by blast, and in four the injuries had

occurred as a result of gunshot and blunt force trauma combined. Shockingly, one of the victims of blunt force trauma and gunshot wounds was a 5.5 yr old child. The other three individuals who suffered from these combined injuries were aged between 13.5 and 14 years of age.

The victims of blast injuries ranged in age from 2 years of age to 15 years, with the remainder being aged between 13.5 and 15 years. All of the blast victims were male except for the 2 year old female who was killed in Sarajevo.

The actual number of defects had been recorded in 16 of the 26 cases where there were multiple injury sites, and this ranged between two and at least five injury sites. The age of the children affected ranged from 5.5 years to 15 years and all of them, in whom sex was known, were male. For the purposes of comparison in adults the number of multiple injury sites per individual was between two and at least 14. All of those with 11 or more injury sites were from the mass deposition site at Ravnice. Table 36 summarises the age and sex of those children with multiple gunshot injuries and the type of injury sustained, Table 37 shows the location of those injuries

Table 36: Multiple injuries in children from Bosnia-Herzegovina

Age in years	Blast	Gunshot	Gunshot and blunt or sharp force
0-5	1 female		1 unknown sex
5.1-10		2 unknown sex	
10.1-15	4 male	12 male 3 unknown sex	1 unknown sex 2 male

Table 37: Location of multiple injury sites in Bosnia-Herzegovina

Age (years)	Head and neck	Torso	Limbs	Multiple sites throughout body
0-5	1 female			1 unknown
5.1-10		1 unknown		2 unknown
10.1-15	1 male		1 male	16 male 4 unknown

It can be seen from the table above that the vast majority of those with multiple injuries had multiple body parts affected, and the information above does not really provide much detail regarding where these sites were. A closer analysis of the multiple injury sites throughout the body revealed that in 14 (54%) of the 26 cases, the head and at least one other region of the body were affected, in 20 cases (77%) the chest, thorax or pelvis were involved, and in 15 cases (58%) the limbs were involved.

Kosovo

The number of injuries sustained was unknown in 22% (n=44) of the 199 children from Kosovo. Where the number of injuries was known (n=155), 56 children (36%) had single injuries and 99 (64%) had multiple injuries.

As in Bosnia- Herzegovina, single injuries e.g. one gunshot, were most often associated with single injury sites although on occasion because of the position of the victim at the time of the attack, a single injury could cause defects at multiple sites. For example, a twelve year old boy from Donja Sudimlje, Vucitrn, sustained injuries to his thorax, left wrist and right upper arm from a single gunshot, possibly because he held his arms in front of his chest at the time of the shooting.

Thirty six of the 56 children from Kosovo who sustained single injuries were of unknown sex, five were female and 15 were male. Six of the injuries were caused by blast, one by blunt force trauma, one by sharp force trauma, and the remaining 48 were caused by gunshot. The age and sex of these individuals are summarised in Table 38, the location of the gunshot injuries can be seen in Table 39.

Table 38: Summary of children from Kosovo with single injuries

	Blast	**Gunshot**	**Blunt force trauma**	**Sharp force trauma**
0-5 years	1 male 2 unknown sex	3 male 0 female 2 unknown sex	0	0
5.1-10 years	3 unknown sex	4 male 4 female 7 unknown sex	0	0
10.1-15years	0	7 male 1 female 20 unknown sex	1 unknown sex	1 unknown sex

Table 39: Location of single gunshot injury sites in children from Kosovo

Age in years	**Head and neck**	**Chest or thorax**	**Abdomen, pelvis or lower back**	**Arm or leg**
0-5	1 unknown sex 2 male	1 male 1unknown sex		
5.1-10	2 female 1 male 3 unknown sex	3 unknown sex 1 female 1 male	1 unknown sex 1 female 1 male	1 male
10.1-15	15 unknown sex 3 male	3 unknown sex 1 female 3 male	1 unknown sex	1 male 1 unknown sex

The location of the injuries strongly suggests that they were not caused by random shots which perhaps could be attributed to being caught in the cross fire of a fire fight. Fifty six percent were to the head or neck, 29% were to the chest and thorax, 8% were to the abdomen or lower back and only 6% to a limb. Neither were these shots restricted to the older age groups; those under 10 years of age accounted for 42 % of the 48 children killed by single gunshot wounds.

Examples of young children who appear to have been deliberately targeted include, a six month old child who was shot in the head, two 4 year olds (one male and one of unknown sex) who were shot in the chest and a further two males, one aged 3 years and one aged 5 years who were both shot in the head. These types of apparently targeted incidents of young children, who could not possibly have been mistaken for adults, were not restricted to males either. Five of those of known age killed by single gunshot wounds were females, four of whom were aged between 5 and 10 years. This suggests that the motives and behaviour surrounding the killings were very different to those seen in Bosnia-Herzegovina (see Chapter Seven).

Multiple injury sites were identified in 99 children from Kosovo. In 43 cases these had been caused by blast, and in 48 cases they had been caused by gunshot wounds. There were four cases in which the injuries had been caused by gunshot and blunt or sharp force trauma, one case where they had been caused by gunshot and blast, and three cases where they had been caused by blunt force trauma alone. The number of multiple injuries in children ranged from two to six per individual. For the purposes of comparison, in adults the number of multiple injury sites per individual was between two and at least 23. Table 40 shows those children from Kosovo with multiple injuries. The location of the injury sites is summarised in Table 41.

Table 40: Multiple injuries in children from Kosovo

Age in years	**Blast**	**Gunshot**	**Gunshot and blast**	**Gunshot and blunt or sharp force**	**Blunt force**
0-5	2 male 2 female 6 unknown	1 male 2 female	1 unknown		
5.1-10	3 male 5 female 7 unknown	3 male 4 female 5 unknown		1 unknown	
10.1-15	2 male 5 female 11 unknown	20 male 1 female 12 unknown		3 male	2 male 1 unknown

Table 41: Location of multiple injury sites

Age (years)	Head and neck	Torso	Limbs	Multiple sites throughout body	Unknown location
0-5	1 unknown 1 female			3 unknown 3 female 3 male	2 unknown
5.1-10		2 female 2 male 3 unknown	2 unknown	11 unknown 9 female 2 male	1 male
10.1-15	3 male 1 female	6 male 3 unknown		19 unknown 5 female 15 male	2 male

As in Bosnia-Herzegovina, a large number of children had multiple injury sites throughout the body. As expected on the basis of the findings relating to the age of the children from Kosovo, there were children with multiple injury sites present in every age group. At face value, in terms of multiple injury sites throughout the body there appeared to be a male bias in the 10.1 to 15 year olds, and a female bias in the 5.1 to 10 year olds. There were however a large proportion of children of unknown sex in both age groups, and those male and female biases existed within those two age groups anyway, therefore few conclusions could be drawn in relation to these finding. When the multiple sites throughout the body were examined more closely it was found that in 48 cases, the head was involved as well as one or more other body parts. This represents 51% of all cases where the injury sites were known, which is broadly comparable to the 54% observed in children from Bosnia-Herzegovina.

6.5.4 Relationship between Cause of Death, Country of Origin, and Burial Site

The differences and similarities between causes of death in Kosovo and Bosnia have been examined in the previous sections. The aim here is to look within the countries at individual sites in order to identify whether any patterns were evident which related to particular types of site, or regions of the country.

Bosnia-Herzegovina

There were thirty children with a known cause of death in Bosnia-Herzegovina: 26 died from gunshot wounds and four from blast injuries. Of the 26 gunshot deaths, four also had blunt force trauma injuries. Two of these victims were from Glogova, one was from Pasinac cemetery and one was from Slap cemetery. With the exception of the child from Pasinac, who was aged 5.5 years, the other three children were aged either 13.5 or 14 years. Two of the victims were of unknown sex and two (from Glogova) were male.

Those children who died from blast injuries alone came from three locations; Glogova (n=2), Zeleni Jadar (n=1) and Sarajevo (n=1). As discussed in Section 6.5.1 these findings do not capture the deaths caused by blast injuries in besieged cities and towns. The blast injuries at the mass grave sites of Glogova and Zeleni Jadar appear to relate to the circumstances surrounding the execution of the victims at Kravica warehouse, as documented in the *Bosnian Institute*:

> *"After rounding up the captured men from Srebrenica, Bosnian Serb special forces imprisoned over 1000 of them at the warehouse in the village of Kravica and then used automatic weapons, hand grenades, and other weapons to kill them. They used bulldozers to dump the victims' bodies in mass graves and later relocate them to other sites"* (Cerkez-Robinson, 2009:1)

To look at whether the child deaths caused by a combination of injury types were representative of what was happening to individuals of all ages, it is useful to examine whether similar patterns were evident in the adult victims from the same sites.

<u>Glogova</u>

Three adult victims had evidence of blunt force trauma and gunshot wounds and 18 died from a combination of blast and gunshot. All other deaths were caused by either gunshot wounds or blast. Although in terms of percentage this indicates that a greater proportion of children (20%, n=2) than adults (0.6%, n=3) suffered from blunt force trauma and gunshot injuries, this finding must be taken in the context of the big discrepancy which existed between the sample size of the children (n=10) and the sample size of the adults (n=538).

Zeleni Jadar

The adults at Zeleni Jadar had been killed by gunshot or blast injuries, or a combination of the two injury types. Two adults (0.5%) also showed evidence of blunt force trauma and gunshot, something which was not observed in any of the 12 children from this site.

Ravnice

Evidence of blunt force trauma in addition to gunshot wounds was seen in just one (0.2%) adult from Ravnice, a 16.5 year old male. As at Zeleni Jadar, none of the 10 children showed evidence of blunt force trauma in addition to gunshot wounds and blast injuries.

Lazete

There were no children exhumed from Lazete and 151 adults. Nine examples of blunt force trauma and gunshot wounds together were seen and the rest of the victims had gunshot wounds alone. This rate of 6% is high compared to that for adults at other sites.

Slap

The autopsy reports of only six individuals from Slap were available and amongst those there was no evidence of blunt force trauma as well as gunshot in adults. However, the summary report of the Chief Pathologist noted that "several individuals had convincing evidence of blunt force trauma inflicted before death, as from blows from a heavy weapon" (Clark, 2001a: 15). This implies that the evidence of blunt force trauma observed in the child from Slap was not an isolated finding, and therefore the adults and children at this site were not being treated differently.

Pasinac

The forensic records of only five individuals from Pasinac were available. There was no evidence of blunt force trauma in the three adults who were killed by gunshot wounds alone. There was also no mention of blunt force trauma in the summary report of the Chief Pathologist although with reference to the 17 individuals in whom cause of death was unascertained, he noted "potential explanations for the death would include natural disease as well as stabbing, cut-throat or asphyxia, none of which would normally be visible in skeletonised remains" (Clark, 2000a: 12). Based on the forensic evidence contained in the reports available, the 5.5 year old child was unique in displaying

evidence of blunt force trauma as well as gunshot wounds and as such he had been treated differently from the other victims at the site.

At all the other sites examined in Bosnia-Herzegovina, there were no examples of children or adults who had died as a result of combined injury types. With the exception of Pasinac Cemetery, the findings at those sites described suggest that in most cases children were not being treated differently from adults. There were however two sites, Zeleni Jadar and Ravnice where adults had been beaten as well as shot, but children had not (although the numbers of adults affected were very small). This negative evidence could indicate that children were being treated differently at these sites or the findings could be coincidental. This seems likely in view of the fact that the single male from Ravnice who had been beaten was aged just 16.5 years and therefore was probably not that distinguishable from the 14.5 and 15 year old males at the same site who hadn't been beaten.

Kosovo

Analysis of the site specific mortality and injury patterns was slightly more complex to assess than in Bosnia-Herzegovina because of the far greater number and diversity of sites.

There were 150 children with a known cause of death in Kosovo, and to summarise, their causes of death were as follows: 101 died from gunshot wounds, 44 from blast injuries, four died from blunt force trauma alone and one from sharp force trauma alone. Of those killed by gunshot, three also had blunt force injuries, one had sharp force injuries and two had blast injuries which in one case could be identified as having occurred after the gunshot. The deaths not caused solely by gunshot wounds or blast are examined below, together with a comparison of cause of death in adults at the same site.

<u>Rogovo, Djakovica</u>

One 14 year old child of unknown sex from Rogovo died as a result of blunt force trauma to skull. In the one other child and 14 adults recovered from the site the cause of death for two was unascertained, one adult died from gunshot and blunt force trauma, and the remaining individuals were killed by gunshot alone. If all those in whom cause of death was known are considered then the 14 year old child was different in that he had not

sustained any gunshot injuries (although one adult had also suffered from blunt force trauma too). Possibly also of significance was his mode of interment. Whilst the other child and the adults were formal *Drasa* burials, mostly in coffins, the location of his burial or deposition site was simply recorded as being in a field.

Verbotza, Glogovac

Two children died from multiple blunt force injuries alone at Verbotza, an 11.5 year old and a 12.5 year old. Both were male. There were three other children and 10 adults at the site and all of them died from gunshot injuries alone showing no evidence of blunt force traumatic injuries. The two children who were beaten to death were certainly treated differently from the others at the site, but it cannot be concluded that this was due to their age as the other three children had not sustained blunt force traumatic injuries. It is not possible to determine why the two children were killed in this manner from the forensic evidence alone, and it can only be speculated that the reasons related to the mentality of the perpetrator or the specific behaviour of those children at that time.

Nabradje 4, Pec

One 14 year old child of unknown sex died from blunt force injuries alone at Nabradje 4 (one of the four sites in Nabradje), Pec. In addition to the child, eleven adults were recovered from this site. It was possible to determine cause of death in nine of the 11 adults; one 70 year old died from sharp force trauma alone, one 68 year old died from blunt force trauma alone and the remaining seven died from gunshot wounds. On the basis of these findings there is no evidence that children were treated differently from adults at this site.

Studenica, Istok

One 15 year old of unknown sex died from sharp force trauma injuries alone at Studenica. The other two children recovered from the site had died of gunshot injuries, one adult died from gunshot and possible blunt force trauma injuries and six adults died from gunshot injuries alone. There were two individuals of unknown age, one of whom died of an unknown cause and one who was drowned. Whilst none of the other victims at the site had been killed by sharp force trauma there were a diverse number of causes of death there, perhaps suggesting that the violence was random and that the perpetrators had simply used whatever means they could to murder the villagers regardless of their age.

Peje 1, Pec

One child at this site, a seven year old of unknown sex, had been killed by a combination of blunt force trauma and gunshot injuries. A total of 35 people were exhumed from Peje 1; seven people of unknown age, 25 adults and three children (including the seven year old child). They had died from a range of different causes, the majority being gunshot wounds alone, although one 50 year old had died as a result of blunt force trauma and two had died of natural causes. The other children had been shot and the seven year old was the only victim at that site with that specific combination of injuries.

Vucitrn, Vucitrn

A 13.5 year old male from this cemetery in Vucitrn died from a combination of blunt force trauma and gunshot injuries. He was the only child in the cemetery, amongst 23 adult. Cause of death could be determined in 19 of the adults and all, with the exception of one who was killed by blast injuries, had died from gunshot wounds alone showing no evidence of blunt force trauma. This evidence indicates that the child was treated differently from the adults exhumed from the same site, in that he was the only one who had been beaten before he died.

Neprebiste, Suva Reka

One 13.5 year old male died of both blunt force trauma and gunshot wounds at this cemetery in Neprebiste. Another two individuals were recovered from the site, an older child and an adult, both of whom died from gunshot wounds alone. This is a repeat of the pattern seen at Vucitrn (albeit in a smaller sample size) where the youngest victim was the only one who had been beaten as well as shot.

Krusevac cemetery, Srbica

One 15 year old male from Krusevac Cemetery was found to have died from a combination of sharp force trauma and gunshot injuries. Ten adults and two individuals of unknown age were also exhumed. Where cause of death in adults was known, seven died from gunshot wounds alone, and one died from blunt force trauma and gunshot wounds. There was no other evidence of sharp force trauma at the site, but perhaps the fact that one adult died from a combination of blunt force injuries and gunshot wounds indicates that death caused in part by “close contact” was not just seen in the only child from the cemetery.

Dragadon Cemetery, Pristina

Dragadon Cemetery has been discussed in detail in Section 6.5.1. With regard to child deaths resulting from a combination of injury types, there was one five year old of unknown sex exhumed from the cemetery who had died from gunshot wounds and blast injuries. In addition to the 169 adults exhumed from the cemetery, there were another six children (excluding the new-born infants). Cause of death had been determined in two of these children as gunshot in one case and blast in the other.

The cause of death could not be determined in 45 adults, but for the other adults causes included gunshot wounds (n=99), blast (n=15), natural causes (n=10), blunt force trauma (n=9), sharp force trauma (n=4), strangulation (n=1) and sharp force trauma in combination with gunshot wounds (n=1). Those that died from sharp force injury were all male and between 24 and 34 yrs of age. One of those with multiple stab wounds had been blindfolded and his hands and feet tied, and the victim of sharp force trauma and gunshot had had his throat cut – it is not known which injury came first. The victims of blunt force trauma were older, predominantly male (nine out of 10), and aged between 33 and 75yrs. The natural causes were generally unspecified and where they were, comprised either heart or lung disease.

Although the sample size of children was relatively small, there was no evidence of the beatings, stabbings and throat cutting seen in the adults. This differs from the sites where only children showed evidence of blunt or sharp force trauma. Perhaps this is related to the fact that it was a large municipal cemetery and therefore had a wider 'catchment area' of victims who potentially died of a wider range of causes, or it could represent a distinction between urban and rural cemeteries as discussed in Section 6.4.3

Mirovac Cemetery, Podujevo

One child and two adults were recovered from the Cemetery at Mirovac. The child, a 10 year old male had died from gunshot wounds and blast injuries, whereas the two adults had died of an unknown cause and gunshot wounds. There was no evidence of blunt or sharp force trauma affecting any of the deceased from this cemetery, but elsewhere at sites in Podujevo an 18 year old female and a 67.5 year old male had died of gunshot wounds and blunt force trauma, and a 50 year old female had died from sharp force trauma alone. Although Podujevo had a relatively high number of child deaths, there was

nothing to suggest at this site that the child was deliberately being treated differently from the adults.

In conclusion there appear to have been some sites in Kosovo such as Vucitrn Cemetery and Verbotza where only children seem to have been the recipients of beatings which sometimes caused death (in combination with gunshot wounds, or alone). Elsewhere in the country however, there were sites such as Dragadon Cemetery, Pristina, where adults had been beaten and stabbed but children had not.

6.6 Associated Evidence

6.6.1 Introduction to Associated Evidence

The criteria used to analyse the evidence associated with the deceased were the Artefact Codes used in the original databases. Each of these codes had a description (Artefact Description), which is presented in Table 42 below.

Table 42: Artefact Codes and Descriptions

Artefact Code	Artefact Description
Ba	Ballistic
Bl	Blindfold
Cl	Clothing
Fir	Firearm
GG	Grave Goods
ID	Definitive Identification Document
Pid	Personal Identification Document
Per	Personal Items
Li	Ligature
Mon	Money (Notes or Coins)
Oth	Other
Rel	Religious Items
Wa	Watch

It is clear from the above codes that there was the potential for overlap between some codes, for example, “Personal Items”, “Watch” and “Religious Items” or “Definitive Identification Document” and “Personal Identification Document”. The category “Oth” was particularly problematic as it appeared to contain a general mixture of items many of which could have been assigned to a number of other categories. It also became evident during analysis that the descriptions of the codes were not always followed and items had not necessarily been assigned to the right code, for example, there were lots of personal effects such as dentures, x-rays and even an artificial eye, recorded as personal identification documents.

The other major problem with the **EVIDENCE PLUS CLOTHING** dataset was that it was only partially complete. The **EVIDENCE PLUS CLOTHING** Table contained 28,035 records, but in 2,662 cases both the artefact code and the description were missing, and in 8,040 cases a description was present but there was no artefact code. In a large number of these cases it was possible to discern that these descriptions related to clothing or blankets, but because the actual code was missing and there were too many variables in the description field they could not be included in the analysis. In a further 3,551 cases there were codes for artefacts but no descriptions and as many of these were “Per” or “Oth”, it could not be deciphered what the artefact actually was. The possibility that the same artefact might have been duplicated under different codes, e.g. an item might have been recorded as a Pid and an ID, was considered but a number of random tests suggested that this was not the case. It cannot be said with absolute certainty however that all significant items were captured in the analysis of the clothing and evidence particularly as it was found that a small number which had not been recorded in the artefact code or description, were actually located in the “description of remains field” of the **PATHOLOGY AND ANTHROPOLOGY** table.

Given the incomplete nature of the dataset and the ambiguity surrounding some of the codeless descriptions and descriptionless codes, a decision was made only to assess entries which comprised an artefact code and a corresponding description. These numbered 15,375 in total. Whilst all the evidence and clothing associated with the victims was of forensic value, it was found that it could be divided into two distinct categories;

one which related specifically to criminal activity and one which related to the identity and lifestyle of the deceased. Evidence relating to criminal activity included:

- Blindfolds (Bl)
- Ligatures (Li)
- Ballistics (Ba)
- Firearm (Fir)

Evidence relating to the identity and lifestyle of the deceased included:

- Personal Identification Document (Pid)
- Definitive Identification Document (ID)
- Clothing (Cl)
- Money (Mon)
- Religious Items (Rel)
- Personal Items (Per)
- Watch / Timepiece (Wa).

There were two outstanding categories which could have related to either criminal activity or to the identity of the deceased:

- Other (Oth)
- Grave Goods (GG).

6.6.2 Evidence Relating to Criminal Activity

Blindfolds

One hundred and sixty one individuals were blindfolded, three were from Kosovo and 158 were from Bosnia-Herzegovina.

Of the three victims from Kosovo, two were 75 year old males from Mirene in Lipljan and Stedim in Podujevo, and the third was a 33.5 year old male exhumed from Dragadon Cemetery in Pristina. The elderly male from Podujevo also had a ligature around both

wrists, and the younger male from Pristina was bound by four ligatures, a belt around his wrists, a belt around his ankles, electrical wire around his neck and a cloth ligature around his neck. He had been killed by multiple stab wounds to his chest and neck.

The blindfolded victims from Bosnia-Herzegovina were found at five sites: Glogova, Hodzici Road, Kozluk, Pilica and Lazete. The majority of these, 109 individuals, came from Lazete and the second highest frequency was observed at Kozluk where 43 individuals had been blindfolded. All of the blindfolded individuals were male and 113 were of known age. One of these was a child aged 14 years and the remaining 112 ranged in age from 17 to 67.5 years

The findings above indicate that blindfolds were more commonly used in Bosnia-Herzegovina than Kosovo and that at some sites they seemed to have been applied in a systematic way as part of the execution procedure, e.g. at Lazete where many were made of the same coloured, patterned type of cloth. This observation is supported by the findings of the Netherlands Forensic Institute who examined the blindfolds and cloth ligatures in an attempt to prove links between the execution, primary and secondary mass grave sites (ICTY, 2001d). Amongst their conclusions they stated "there is a startling visual similarity within the blindfolds and ligatures used at the individual sites and between some sites" (*ibid*: 19). In addition to the blindfolds on the victims, there were also blindfolds found loose in the graves at Lazete, Hodzici Road and Kozluk, and at the execution site, Grbavci School (ICTY 2000; 2001d, Manning, 2003: 25)

The use of blindfolds appears to have been more *ad hoc* in Kosovo and certainly in the case of the 33.5 yr old male from Pristina it seems to have been added as part of the torture which included him being bound and stabbed multiple times.

Ligatures

There were a recorded 350 ligatures, 52 from Kosovo and 298 from Bosnia-Herzegovina. In Bosnia-Herzegovina the 298 ligatures related to 285 individuals indicating that a small proportion (4%), the majority of whom were from Kozluk, had more than one ligature. The victims with ligatures from Bosnia-Herzegovina were exhumed from seven sites; Kozluk, Glogova, Cerska, Pilica, Lazete and Ravnice. Of these, only one ligature was recorded at Ravnice, four were found at Lazete (which had the greatest number of

blindfolded individuals), and 15 were found at Glogova. The vast majority of ligatures were recovered from Kozluk where 157 of the deceased were bound by 166 ligatures, Pilica where 70 ligatures were found on 67 individuals and Cerska where 42 ligatures were used on 42 people.

The types of ligatures used at different sites varied; at Cerska they comprised metal wire bands, whereas at Pilica they were made of cloth and rope. At Kozluk the majority of ligatures were made of rope although other materials such as plastic, nylon, straw / raffia, cord and string were used. In the majority of cases the ligatures were tied around the wrists, behind the backs of the deceased and in some instances the victims had been actually bound back to back in pairs. This could be seen even where bodies were not whole, in the form of commingled arms, tied by ligatures.

Only four of the individuals with ligatures were children. They ranged in age from 13 to 15 years, all were male and all were from Bosnia-Herzegovina. They were recovered from two sites, Cerska and Kozluk, both primary mass grave sites.

Ballistics

There were some variations in the terminology used to describe the ballistics, most frequently with regard to bullets, which probably related to the qualifications and expertise of the investigator who was recording the evidence. For example, the majority of bullets from Bosnia-Herzegovina were described as "sharp nosed copper jacketed bullets" whereas in Kosovo as well as being described as copper plated or jacketed, the calibre (diameter of the bullet) was almost always recorded and sometimes the number of grooves was noted. It was, however, possible to determine from almost all the descriptions what type of ballistic was represented e.g. whether it was shrapnel, a bullet or jacket, or part of a shell case. In some cases the type of weapon from which a bullet had been fired was recorded, e.g. AK47s and a Tokarev pistol. In one case the officer recording the bullet noted that it was made in China in 1970.

There were 3,151 records for ballistics in the **EVIDENCE PLUS CLOTHING** table; 1,656 from Bosnia-Herzegovina and 1,495 from Kosovo. Frequently, an individual or body part

might contain or be associated with more than one piece of ballistic evidence. In terms of the types of ballistics recovered these included the following (whole or fragments of):

From Bosnia-Herzegovina:
Sharp nosed copper jacketed bullets, pieces of lead, wheel bearings, ball bearings, rod like pieces of metal, 7.65 mm bullets, shotgun pellets, cartridge cases, shell cases, generalised shrapnel and pieces of metal

From Kosovo:
7.62 mm bullets, .38 in. lead round nosed bullet, 9mm bullets (some copper jacketed), slugs including 9 mm and tapered slugs, shell casing, cartridge cases, shot gun pellets, handle from a hand grenade, empty pistol magazine, pieces of lead, magnetic metal, copper plated and jacketed bullets, generalised shrapnel and pieces of metal.

In a small number of cases live rounds were found on the deceased. Examples of this included a 42.5 yr old male from Ravnice who was found with 23 live bullets, a person of unknown age and sex from Nova Kasaba who had 54 live rounds on his person and a 22.5 year old male from Terstenik, Glogovac who was carrying 8 rounds of live ammunition.

Ballistic evidence was found with children at seven sites in Bosnia-Herzegovina and 38 sites in Kosovo. It was associated with 20 (40%) of the 50 children from Bosnia–Herzegovina and 74 (37%) of the 199 children from Kosovo. The percentage of ballistics associated with children was very similar in both countries, but the types of ballistics were different. In Bosnia-Herzegovina 72% were positively identified as sharp nosed copper jacketed bullets whereas in Kosovo where the type of ballistic was specified only 28% were bullets. There were numerous examples of children with multiple ballistic evidence in their bodies including a 10 year old female from Suva Reka who had a bullet in her left shoulder, one in her left thigh and “additional shrapnel / deformed metal” elsewhere in her body, and a 7 year old female from the Firing Range at Prizren who had multiple pellets in her chest, abdomen and right hip.

In terms of the age and sex of children associated with ballistics, all of those of known sex from Bosnia-Herzegovina were male and aged between 10 and 15 years, whilst in Kosovo there were 24 pieces of ballistic evidence with females and 41 with males. The children

from Kosovo ranged in age from 6 months to 15 years, 19 cases were associated with those aged 5 years or less, 48 with those aged 5.1 to 10 years, 50 with those aged between 10 and 15 years.

Firearms

Only two individuals were reported to have firearms with them. One was a 40 year old male from Suva Reka in Kosovo and the other was a person of unknown age and sex from Glogova in Bosnia-Herzegovina. There were no details of the weapon found with the Kosovan male, but that carried by the Bosnian was a pistol with a magazine of bullets

6.6.3 Evidence Relating to the Identity and Lifestyle of the Deceased

Religious Items

There were 89 religious items recorded belonging to 83 individuals; 54 from Bosnia and 35 from Kosovo. None of the deceased were children and the adults ranged from 18 to 67.5 years in Bosnia-Herzegovina and 16 to 80 years in Kosovo. Where sex was determined, all those from Bosnia-Herzegovina were male and there were 28 were males and 5 females from Kosovo.

The religious items included prayer beads, religious pendants, prayers, miniature copies of the Koran, and prayer pouches. Only one religious item could be identified as probably Christian rather than Muslim, a golden chain with a pendant and two crosses found on a 40 year old male from Suva Reka, Kosovo. In both countries, prayer beads were the predominant type of religious item. All 11 copies of the Koran were found in Bosnia-Herzegovina, although there were four examples of prayer pouches and parts of prayer sheets found in Kosovo.

Money

There were 354 records of money associated with 231 individuals as some had multiple notes and coins. 187 individuals were from Kosovo and 44 were from Bosnia-Herzegovina. Two hundred and forty eight of the records related to males and 37 to females (all from Kosovo). Of the individuals of known age (n=173) only five were children. They all came from Kosovo and were aged between 10 and 14.5 years.

In Kosovo money was found on the deceased at 71 different sites in municipalities from across the country including Prizren, Pristina, Pec, Djakovica, Kosovska Mitrovica, Istok, Podujevo, Decani, Lipljan and Srbica (this is not an exhaustive list). Several individuals were carrying large sums of money in multiple currencies such as Deutsch Marks (DM), Swiss Francs and US Dollars. Examples from Kosovo included a 62.5 yr old female from Glogovac with 1100 DM, a 45 year old male from Kosovska Mitrovica who had a total of 6,400 DM, 100 Swiss Francs and 130 US Dollars, a 45 year old male from Vucitrn who had 700 DM on his person, and a 48 year old female from Pec who had over 3,500 DM. Eleven percent of victims were found with over 100 DM and there were also individuals carrying large amounts of Yugoslavian currency (in excess of hundreds of millions of Dinara) but it is difficult to calculate the current value of this using modern exchange rates. The five children from Kosovo who were found with money had only small amounts of local currency, either one or several coins or a small number of low currency bank notes.

Money was found with the deceased at seven sites in Bosnia; Glogova, Lazete, Kozluk, Ravnice, Pilica, Nova Kasaba and Zeleni Jadar. At Nova Kasaba and Zeleni Jadar only one 500 Dinara bank note and one 10 DM note were found respectively, and at Ravnice, only one 50 pfennig coin was found on a 45 year old male. At Pilica there were just two individuals found with money, one with a 500 DM note and one with an unspecified amount of currency of unknown denomination. The majority of money was recovered from Kozluk – 53 items of currency relating to 23 individuals. Most of this money was local currency although there were some notable exceptions, for example, an individual of unknown age and sex with a total of 3600 DM, two individuals of unknown age and sex with 100 Swiss Francs bank notes, and an individual of unknown age and sex with a 500 DM bank note. At Lazete there were 14 individuals with money and at Glogova there were nine. The majority of these individuals had relatively small amounts of local currency, but exceptions included a 20 yr old male and a 32 year old male from Glogova who had 160 DM and 310 DM respectively and a 55 year old male from Lazete with 1,100 DM. Two other males from Lazete were each carrying a 100 DM note and a 60 year old male was described as having “1 x 500 bank note and 1x 50 bank note” but the currency was not specified. Two different types of currency, not found at other sites in Bosnia- Herzegovina were observed at Glogova and Lazete; a Dutch Guilder and a Bulgarian Leva note.

Although the 187 individuals with money from Kosovo represented only 5 % of the total number of deceased, even this percentage and the amounts observed are surprising and a clear indication that not all of the murders were motivated by robbery. In fact, money appears to have been deliberately disregarded in some instances. Whilst this might be expected amongst some of the victims, e.g. those civilians killed by NATO bombs, the individuals cited above who carried large sums of money, had been killed by multiple gunshot wounds or a single gunshot wound to the head. The single gunshot wound to the head almost certainly required the perpetrator to be in close contact with the victim which makes it even more surprising that the large amount of money on his person was not taken.

In Bosnia-Herzegovina although money was found with only 2% of the bodies recovered, the proportion of those carrying 100DM or more was 20%, despite the fact that many of the victims had been detained prior to their execution therefore the opportunity to take all their money would have been there. Perhaps the sheer scale of numbers involved in the mass executions in Bosnia-Herzegovina might account for the small percentage of individuals who managed to retain considerable sums of money on their person. They could quite literally have been at the bottom of the heap and therefore less accessible to thieves.

The absence of money on children from Bosnia-Herzegovina and very small amounts on children from Kosovo, probably reflects the reality of the situation in the general population, i.e. children would not have been carrying much, if any, money around with them.

Personal Identification Documents and Definitive Identification Documents

It is easier to consider these artefact types together due to the overlap between the two which exists largely because of inaccuracies in recording procedures. As previously discussed there were many artefacts such as dentures and dental work plus formal identity cards which were recorded as personal identification documents, together with the hand written documents, letters, receipts and library cards which should have been in that category. Similarly there were many personal identification documents such as driving licences, passports and pension slips which had been recorded as definitive identification

documents alongside the identity cards which had been correctly assigned to that artefact code.

As well as more formal means of identification there were medically related forms of identification, for example, there were x-rays of healing fractures relating to five males from Bosnia, although it is not noted where the x-rays were retrieved from or how they were associated with the bodies. There were records also describing an artificial heart valve, a glass eye, an anaesthetic and field surgery record, numerous dental plates and crowns, and "grave ID"

There were a total of 505 items which were recorded as either "Personal Identification Documents" or "Definitive Identification Documents", 255 were from Kosovo and 250 were from Bosnia-Herzegovina. These related to 236 individuals in Kosovo and 234 in Bosnia, 6.7% and 8% of the deceased respectively.

All of those of known sex found with identification artefacts in Bosnia-Herzegovina were male and where age could be determined it ranged from 18 to 70 years. In Kosovo amongst those of known sex there were 18 females and 153 males who ranged in age from 9.5 years to 80 years.

There were three children in total from Kosovo with some form of identification; a 10.5 yr old child of unknown sex from the NATO cemetery in Prizren with an identity card, a 15 yr old male from Burim, Istok, wearing a wrist chain with his name on it, and a 9.5 year old female from an unknown site with unspecified identification. None of the deceased found with identification in Bosnia-Herzegovina were children.

The percentage of bodies found with items which could be used to assist in their identification was not large, suggesting that either the majority of the deceased had either not been carrying a form of identification or that it had been removed from them. As with the money, why this had not been taken in all cases cannot be fully understood unless each case is examined individually. Certainly in Bosnia-Herzegovina there did seem to be some patterns in terms of where the bodies with identification were found and the type of identification present. The majority were from Lazete, Kozluk and Glogova, but whereas the items from Lazete and Glogova were almost entirely formal identification documents,

over 50% (n=31) of those from Kozluk were dentures. It seems that no serious attempts had been made to hide the identity of the deceased at the first two sites, and the same might also be said of the undisturbed primary grave site at Cerska and the disturbed primary site at Pilica where, although the number of identity related artefacts was smaller (n=15 and 20 respectively), again they were all official identity cards.

Identification artefacts were recorded at 56 sites in Kosovo which is perhaps surprising as although the majority of the victims were buried by their families, the perpetrators would have had access to the bodies beforehand and therefore the opportunity to remove any identification documents. This suggests in some cases a lack of concern regarding the discovery of the identity of the deceased. In other cases however, there appeared to have been a concerted effort remove or destroy anything (including the bodies themselves) which might make prosecution for their crimes more difficult. The ICTY amended indictment issued against Slobodon Milosevic, Milan Milutinovic, Nikola Sainovic, Dragoljub Ojdanic and Vlajko Stojiljkovic, refers to a number of specific incidents during the destruction of the villages of Velika Krusa, Mali Krusa and Krushe e Vogel. It states that approximately 105 men and boys were rounded up in the surrounding forests where they had tried to hide, that their identity documents were removed and that they were then executed and burnt (ICTY, 2001c: 7). By doing this the perpetrators were making doubly sure that the victims would not be recognised. The same indictment contains numerous other references to identity documentation being removed in incidents in different municipalities prior to people being killed or forcibly expelled (*ibid*).

A final consideration regarding identification documents is how many of the victims would have possessed them in the first instance. Many of those from Kosovo came from small villages in rural areas, and it may be the case that they did not carry identification cards on their persons in the same way that somebody from a city might. It is less easy to determine from the forensic evidence alone where the victims from Bosnia-Herzegovina had resided, as many had been rounded up from their homes and held in detention centres which weren't necessarily close by, prior to their execution.

Clothing

Only 573 artefacts were recorded under the code of "Cl" for clothing. At least another 8,040 descriptions which were associated with blank fields under Artefact Code, were also most likely to be attributable to clothing. They included such things as "sleeveless",

"long woollen", "long sleeved left breast pocket", and in some instances they contained the name of the item of clothing such as "swimming trunks", "single sock", "suit trousers".

If it is accepted that approximately 8,611 items of clothing were recorded, a number of observations can be made: 3,777 items of clothing came from Bosnia-Herzegovina and 4,836 came from Kosovo. Of these, 335 items belonged to children, 99 from Bosnia-Herzegovina and 236 from Kosovo. It was not possible to calculate how many items of clothing were associated with each individual as a large proportion had been entered as multiple items into a single description field. The overall impression from reading the descriptions, however, was that the majority of individuals were associated with multiple items of clothing. This was particularly true of Kosovo where many of the deceased were wearing more than one of the same types of clothing, for example two jackets, two pairs of trousers, two jumpers in addition to coats, T-shirts and long-johns. This is consistent with witness accounts that many of the victims had been expelled from their homes and were internally displaced either trying to escape to Macedonia or Albania and living outside, hiding in hills and forests.

Clothing did play an important role in the identification of the deceased, particularly in Kosovo, prior to confirmation of identity by DNA. In 1999 the British Forensic Team compiled photographic albums of items of clothing and personal effects, which they had washed, alongside the anthropological data for that individual (see Figure 11 Chapter 4, Section 4.1.5). It was also possible to utilise the clothing and personal items data to assist in tentative assignation of sex (see, this Chapter, section 6.3).

Personal Items

There were 2,601 items listed in this category, of which 2,514 had a description; 1,222 from Kosovo and 1,379 from Bosnia. This cannot be taken as a complete record however, as some of the artefacts which could have been listed here had either been recorded under their own code, e.g. "Watches", or in the case of items such as jewellery, dentures and clothing, they had been assigned to different codes such as "Oth", "Clothing" or "Personal Identification Documents"

The personal items fell into a number of distinctive groups:

1. Items related to smoking: cigarette lighters, cigarette holders, tobacco and tobacco tins, smoking pouches containing flint sets, cigarette packets and matches
2. Items for personal grooming: combs, hair bands, razors, nail clippers, tooth brushes, aftershave
3. Jewellery: rings (including wedding rings), bracelets, necklaces, pendants, earrings, a memorial medal dated 1915
4. Keys and Key rings
5. Spectacles and cases
6. Pocket knives
7. Medically related items: bandages, eye-drops, ointment, lotion, pills and pill packets (various types), gauze, a ventriculo-peroneal shunt
8. Watches: pocket watches and wrist watches
9. Miscellaneous: a child's dummy, torches, batteries, pens, paper

Where sex was specified, males were associated with 1,614 of the items and females with 226. Sixty six of the items belonged to 45 children, 10 of the children were from Bosnia-Herzegovina and 35 were from Kosovo. The items belonging to the children did not vary significantly from those identified as belonging to adults although there were a few exceptions such as marbles and a pencil case.

In Bosnia-Herzegovina, the children with personal items represented 20% of the total number of children found. They ranged in age from 9.5 years to 15 years, four of the children were of unknown sex, four were male, one had been assigned a tentative male and one a tentative female sex based on associated artefacts and clothing. The personal items they posessed included female underwear, rings, earrings, combs, a chain, a pendant, a coin, a safety pin, some paper and some tobacco.

In Kosovo, the children with personal items represented 18% of the total number of children found. They ranged in age from 1.5 years to 15 years, 15 of the children were of unknown sex, five were male, three were female, and two had been assigned a tentative female sex based on associated artefacts and clothing. The personal items they had included bracelets, necklaces, beads, earrings, bracelets, watch pins, a pendant, marbles,

combs, hairclips, pieces of paper and fabric, wallets, pills, a key chain, a small rucksack and pencil case.

Watch or Timepiece

285 watches were recorded under the "Watch" artefact code, 146 from Bosnia and 139 from Kosovo. They could be divided into 34 pocket watches, 229 wrist watches and 22 watches of unspecified type (wrist or pocket). They incorporated a wide range of makes and designs and amongst the most common brands were OMEGA, SEIKO, CASIO, OMICRON, TIMEX, DARVIL, RAKETA, and ASAHI. There was one TAG HEUGER watch with a gold face on the wrist of a 40 year old man from Kacanik, who had been buried in a coffin. This man had been killed by multiple gunshot wounds to his chest and arms and it is possible that the expensive watch could have been seen by the perpetrators. This may have been the case with others who wore other types of expensive watch such as OMEGA, but as with the money in some instances they were not taken.

In Bosnia-Herzegovina, where sex was specified, all the watches were associated with males who ranged in age from 15.5 years to 70 years. In Kosovo where sex was specified 125 watches were associated with males and 11 were with females. The owners ranged in age from 13.5 years to 80 years. There were only two children with watches, both were 13.5 year old males, one was from Kladenica, Srbica and the other was from Poklek, Glogovac

Other

There were 329 items described as "Other", 222 from Kosovo and 107 from Bosnia. These included a miscellaneous range of things including pieces of wire and metal, rope, tin foil, glass, plastic tags, hospital drains, gauze, forceps, surgical gloves, keys, soap, dentures and dental work, a torch, pens, paper, a penknife, sewing kit, mirror, razor blades, and a number of hospital name-bands including the name bands of 21 babies from Dragadon Cemetery, Pristina.

"Other" artefacts were associated with two children from Bosnia-Herzegovina and 12 children from Kosovo. The two Bosnians were a 14 and a 15 year old male, one of whom was carrying a pen and the other who was associated with a piece of chrome metal. The children from Kosovo ranged in age from 2 years to 15 years and of those whose sex had

been determined, five were male and three were female. One child, a 10 year old of unknown sex recovered from Dragadon Cemetery had a number of items which suggested he or she had been receiving hospital treatment. These included a surgical dressing, some ANADOL tablets and a possible surgical sheet. Other forensic evidence from Dragadon, including the hospital name bands, supported witness accounts that many of the individuals who had been buried there were actually hospital patients who had been murdered in their beds (British Forensic Team, 2000; Burton et al, 2000). Some of these victims had been subsequently buried in a mass grave in the Cemetery by the perpetrators attempting to hide evidence of the murders (*ibid*).

In one case the artefact accompanying an 11.5 year old male from Kosovo was the skeleton of a goat, minus its head. The boy had died from multiple blunt force injuries and was buried in a grave in Verbotza, but there are no more details about the circumstances of his death or burial so it is not known whether the goat was put there by the perpetrators or his family.

Grave Goods

Seventy individuals were recorded as having a total number of 74 grave goods with them. The grave goods consisted almost entirely of body bags and plastic sheets, the exceptions being a few plastic cards.

Five of the deceased were from Bosnia-Herzegovina and 65 were from Kosovo. All five of those from Bosnia were aged less than 19 years. Two children aged 5.5 and 9 years and a 16 year old male were from Pasinac Cemetery, and one 13.5 year old child and a 19 year old male were from the cemetery at Slap. In Kosovo "grave goods" were recorded at 15 different sites in municipalities which included Prizren, Pristina, Pec, Malisevo, Lipljan, Srbica, Kacanik and Djakovica. Ten of the 65 individuals were children, and all of these were from the NATO Cemetery in Prizren. They ranged in age from six months to 14.5 years.

The Tables 43 and 44 summarise and compare the evidence and clothing found with children and adults in Kosovo and Bosnia-Herzegovina. Where "approximate" is used this was because it was only possible to calculate the number of items recorded not the number of individuals to whom they related.

Table 43: Summary table of evidence types with children and adults, Kosovo

Artefact Description	No. and % children with item. Number of children = 199	No. and % adults with item. Number of adults = 2,937
Ballistic	74 (37%)	1,495 (51% approximate)
Blindfold	0 (0%)	3 (0.1%)
Clothing	236 (Items. Not possible to calculate % individuals)	4,600 (Items. Not possible to calculate % individuals)
Firearm	0 (0%)	1 (0.03%)
Grave Goods	10 (5%)	65 (2.2%)
Identification Document	3 (2%)	252 (9%)
Personal Items	35 (18%)	1,222 (Items. Not possible to calculate % individuals)
Ligature	0 (0%)	40 (1%)
Money (Notes or Coins)	5 (3%)	182 (8%)
Other	12 (6%)	210 (7% approximate)
Religious Items	0 (0%)	35 (1%)
Watch	2 (1%)	137 (5%)

Table 44: Summary table of evidence types with children and adults, Bosnia-Herzegovina

Artefact Description	No. and % items with children Number of children = 50	No. and % items with adults Number of adults = 1,862
Ballistic	20 (40%)	1,656 (89% approximate)
Blindfold	1 (2%)	158 (9%)
Clothing	99 (Items. Not possible to calculate % individuals)	3678 (Items. Not possible to calculate % individuals)
Firearm	0 (0%)	1 (0.05%)
Grave Goods	3 (6%)	2 (0.1%)
Identification Document	0 (0%)	234 (13%)
Personal Items	10 (20%)	1,379 (Items. Not possible to calculate % individuals)
Ligature	4 (8%)	281 (15%)
Money (Notes or Coins)	0 (0%)	44 (2%)
Other	2 (4%)	105 (6% approximate)
Religious Items	0 (0%)	54 (3% approximate)
Watch	0 (0%)	146 (8%)

It can be seen that in the majority of cases, children had less artefacts associated with them than adults. There were some similarities amongst the children from Bosnia-Herzegovina and Kosovo, including the relative percentages of those with ballistic evidence, money, personal and "other" items. It was also the case in both countries that there was less ballistic evidence associated with children than adults suggesting that on average they had been shot fewer times, which actually reflected the findings relating to numbers of injury sites. In both countries children had more "grave goods", i.e. body bags and plastic sheeting, than adults, although it cannot be ascertained whether these items were introduced by the offenders, families of the deceased or the forensic teams.

CHAPTER SEVEN

DISCUSSION

This chapter examines whether the aims of the research were achieved and the specific research questions were addressed successfully. It discusses the key findings within their socio-political context, the mechanism through which they were generated and the implications of the results. A summary table of key findings and recommendations for future research are presented in Chapter Eight, Conclusions.

The primary aims of this research were to establish the numbers of children killed in Bosnia-Herzegovina and Kosovo during the conflicts of the 1990s and to examine the precise nature of those crimes. This was achieved by the construction of a single integrated forensic database which could be used to answer a series of key research questions. A discussion of the final integrated database can be found in Section 7.2. The research questions and the findings which they generated are summarised in Section 7.1.

It should be re-iterated that the findings presented in this chapter are based on data derived only from the evidence collected under the auspices of ICTY between 1996 and 2001, as specified in Chapters Three and Four. It does not incorporate information relating to the deaths which occurred in besieged villages, towns and cities in Bosnia-Herzegovina, or the victims who have been recovered in both countries since ICTY handed over the responsibility for exhumations and examinations to local government agencies. There is potential for this data to be added to the forensic database created for the purpose of this research for future analysis and this is discussed in Chapter Eight, Section 8.3.

7.1 Research Questions and Findings

7.1.1. In what condition were the bodies of the victims and how did this affect the amount of information that could be retrieved from them?

It was possible to make a full assessment of the condition of all the bodies recorded in the forensic database. The results of this analysis indicated that there were clear differences

between the two countries relating to the overall condition of the remains, which had a direct effect on the amount of information that could be retrieved from them.

Based on the criteria described in Chapter Six, Section 6.1, the bodies from Kosovo were in a better condition than those from Bosnia-Herzegovina. More were complete or almost complete, fewer were totally skeletonised and they were generally less fragmented. More bodies from Kosovo than Bosnia-Herzegovina had suffered from the effects of blast and fire damage, but more bodies from Bosnia-Herzegovina than Kosovo had sustained multiple post-mortem fractures due to the circumstances of their burial and subsequent disturbance to their graves (see Section 7.1.4).

The greater level of disruption and more advanced decomposition observed in the remains from Bosnia-Herzegovina was reflected in the higher percentage of individuals in whom sex, age and cause of death could not be ascertained.

When the child data alone was examined, sex could be determined in fewer individuals in Kosovo than in Bosnia-Herzegovina, reversing the correlation between preservation and amount of information retrievable previously seen in individuals of all ages. This can most likely be explained in terms of the difficulties associated with determining age in younger children, of whom there were more, in Kosovo.

In both countries, the percentage of children in whom cause of death was unascertained was less than the percentage observed in individuals of all age. There was, however, a much bigger discrepancy between the figures from Kosovo and Bosnia-Herzegovina with cause of death being identified in far more children from Kosovo. This is almost certainly due to the fact that more of the remains were complete or almost complete in Kosovo, thereby making it possible for the pathologist to make a full assessment of the location and number of potentially fatal injuries.

An age range could be assigned to all the children in Kosovo and Bosnia-Herzegovina which is almost certainly due to the fact that this is easier to do in children than adults, as well as being a reflection their state of preservation.

7.1.2. How many children died in Kosovo and Bosnia-Herzegovina as a direct result of the wars and what proportion of the victims did they represent?

Two hundred and forty nine children aged 15 years or less were identified amongst the victims; 199 of these were from Kosovo and 50 were from Bosnia-Herzegovina. In Kosovo, children accounted for 6.3% of those victims of known age (n=3,136) and in Bosnia-Herzegovina, they represented 2.6% of those victims of known age (n=1,912).

Although 15 years was used as the upper limit for the definition of the term 'child', the number of 15 to 18 year olds killed in both countries was also examined. The reason for this was to see if the numbers dramatically increased once children were over the age of 15 and were more likely to be perceived as adults. It was found that the percentage of 15 to 18 year olds killed in Bosnia-Herzegovina was double that seen in those age 15 years and under. In Kosovo the reverse happened and the percentage of 15 to 18 year olds was less than that seen in those aged 15 years and under.

This would seem to indicate that in Bosnia-Herzegovina individuals were *excluded* from the killings because they were children. In Kosovo, however, whilst it cannot be demonstrated on the basis of this evidence alone that the opposite was true, i.e. that children were deliberately *included* in the killings because of their age, there is certainly a suggestion that the age of the victim was less of a concern. This was also reflected in the numbers of elderly people killed. In Bosnia-Herzegovina those aged over 65 years accounted for only 0.3% of the deaths, whereas in Kosovo, they accounted for 10%.

7.1.3. What were the ages at death and sex of the child victims in both countries, could any trends and patterns be identified in the demographic data, and were there any differences in these between the two countries?

Three categories were created for the purposes of more closely analysing the age structure of the child victims; birth to 5 years, 5.1 to 10 years and 10.1 to 15 years. Victims were well represented in each of the age groups in Kosovo and not just limited to the upper age ranges. The numbers of victims did increase with age but it is clear from the presence of babies, toddlers and young children that, where deliberate executions had taken place, the

primary aim of the perpetrators was not just to kill older children and teenagers who could be perceived as a threat.

Sex could be determined in just under half the children from Kosovo and there was a male bias of approximately 3:1. This reflected the bias seen in the adult population but to a much lesser degree. The analysis also showed a different pattern when sex bias was examined within the narrower age groups and in fact, the numbers of males and females were approximately equal in the birth to five years group, and females outnumbered males in the five to 10 year olds. It was only in the oldest age group that the males greatly outnumbered the females.

Children of all ages were found at a diverse range of sites throughout Kosovo and there appeared to be no relationship between the age of a child and their burial type or location. Unfortunately there were too many children of unknown sex to make inferences or draw conclusions about the relative numbers of males and females at each site.

In Bosnia-Herzegovina there was only one child aged between birth and five years, a small number were aged between five and 10 years and the vast majority were aged between 10.1 and 15 years. The sex of just over half the children could be determined and only one of these was female, a two year old girl who had been killed by a shell in Sarajevo. This extreme male bias closely mirrored the situation observed in the adults.

The youngest children in the Bosnian sample came from individual graves in cemeteries. All of the child victims from the mass grave and deposition sites were aged between 10.1 and 15 years and over three quarters of them were aged between 13 and 15 years. As with Kosovo it is perhaps dangerous to draw conclusions about sex-specific mortality patterns in children when the sex of half of them could not be determined. It is believed that the situation is different from that seen in Kosovo, however, because with the exception of the female from Sarajevo, all those children whose sex could be determined were male. Taken in conjunction with the adult data where almost 100% of the victims were male, there is reason to suspect that the male bias would be maintained if the sex of the children were known.

The research showed that the demographic profiles of the child victims in Bosnia-Herzegovina and Kosovo were very different. The overwhelming male bias in those children of known sex and the greater proportion of children who were aged over 10 years strongly suggests that there was a selection process behind the killings in Bosnia-Herzegovina, and that selection process would have required discussion and planning at a high level.

In Kosovo this was less evident. A greater number of younger children had been killed, and although the largest percentage of deaths still occurred in those aged over 10 years, there was not such a pronounced contrast with the other age groups. In addition to this the strong male bias was seen only in the oldest age group. This may demonstrate a selection process in terms of sex in older children, but this does not appear to have been the case in the younger ones.

The pattern of deaths observed in the children from Kosovo and Bosnia-Herzegovina implies that different strategies were being employed in relation to child murders. In Kosovo rather than the males and older boys consistently being removed from their families and executed, entire extended families (whose members might range in age from six months to 90 years) were killed in multiple incidents across the country. This implies that the motives and intentions behind the killings were also different. In Bosnia-Herzegovina the demographic evidence indicates that there was a deliberate and systematic policy geared towards eliminating an entire section of society, i.e. males over the age of 10 years. In Kosovo the repeated examples of entire families being murdered, including the very young and the very old, suggests more personal and emotionally driven motives.

7.1.4. What were the locations and characteristics of child burial and deposition sites in Kosovo and Bosnia-Herzegovina? Were there differences between and within the two countries? Were there differences in the post-mortem treatment of children and adults?

In Kosovo, children were recovered from sites throughout the country. There was a wide variation in terms of numbers recovered from each municipality which represented a complex picture. Initial assessment of the forensic evidence in Kosovo indicated that there was an association between the numbers of people killed and the regions in which the

KLA were known to be active and predominant, i.e. a large number of bodies were exhumed from those areas. The exception to this was Pec where the Kosovo Albanian population appear to have been targeted for cultural-historical reasons. The majority of those municipalities which yielded the fewest victims were on, or close to, the Serbian border.

When analysis of the data relating to child deaths alone was undertaken, however, it could be seen that the relationship was not so straightforward, and different patterns emerged when municipalities with approximately the same numbers of victims within the same geographical regions were compared. Then it became apparent that no matter how great the overall death toll was or where the municipality was located, the percentage of child deaths was less where there was greater ethnic diversity, even in areas where KLA activity was known to be prolific. There were municipalities where this trend was less pronounced such as Suva Reka and Djakovica (which were also KLA strongholds), but a link between ethnic diversity and child deaths was nevertheless identifiable.

The types of grave and deposition sites where children were found in Kosovo varied within and between municipalities. They included individual graves in established cemeteries; individual graves in newly established 'war cemeteries'; single graves in fields and by riversides; floors of houses, farm buildings, outhouses and courtyards; the ground surface of fields, shallow pits and craters at a police firing range; small mass graves in urban and rural locations, and unspecified contexts in villages and fields.

Where data was recorded in relation to the construction of the graves, the vast majority had been dug by hand, and many of the victims had been buried by their families. The graves were almost always found within village complexes or close to them, although there was one example of victims having been moved a considerable distance from their place of execution. There was no convincing evidence in the forensic data of graves which had been pre-dug prior to victims being murdered, which might indicate forward planning in terms of how many people the perpetrators intended to kill and where they intended to bury them.

In Bosnia-Herzegovina, the burial and deposition sites excavated by ICTY were all located in the eastern and northern parts of the country and the majority were concentrated

around Srebrenica. Analysis of the data showed that the sites fell into two categories; cemeteries in towns, and mass grave and deposition sites.

The two cemeteries analysed were Pasinac, which was located in the Prijedor region of northern Bosnia, and Slap which was associated with the town of Visegrad in the east. The children who were exhumed from these cemeteries represented only a small proportion of the total number of victims buried there. Like the adults in the cemeteries, they were buried in individual graves which had been dug by family members and acquaintances.

The mass grave and deposition sites were all in the region of Srebrenica which is located in central Podrinje, eastern Bosnia. Although the dataset relating to the mass grave sites so far investigated is incomplete, over two and a half thousand of the victims from Srebrenica, recovered from sites such as Glogova, Zeleni Jadar, Kozluk, and the deposition site at Ravnice, were ultimately represented in the forensic database.

Exhumation reports presented to the Tribunal by chief archaeologists and anthropologists (Haglund, 1996a, 1996b, 1998; Wright, 1999, 2000, 2000a, 2001) were reviewed as part of the research. Descriptions of the size and construction of the graves which included the identification of ramps created by mechanical excavators, tooth marks in the soil from their buckets, areas of the grave which had been left empty in preparation for more bodies, and graves which had never been filled, indicated that the killings and burials were planned in advance and intended to be on a massive scale. There was strong forensic evidence of the disturbance of primary graves and the removal of bodies to secondary and possibly tertiary locations, and proof of links between execution sites, primary and secondary graves. This included archaeological evidence of grave robbing, the truncation and post-mortem damage of the remains recovered from disturbed primary and secondary graves, and forensic evidence relating to criminal activity (see Sections 6.6 and 7.1.6).

The numbers of children recovered from the mass grave and deposition sites varied and although the characteristics of the graves were examined in terms of which were primary, secondary, disturbed and undisturbed, no correlation could be found between grave type and the presence of children. As such, there appeared to be no readily identifiable reason

as to why children were found in greater numbers at some sites and were totally absent at others.

Analysis of the burial data showed that in both countries there was no difference between the post mortem treatment of adults and that of children. They were found together in mass grave and deposition sites and, where they were buried in cemeteries or other village locations, they were interred in the same way, according to local tradition, in individual graves.

The research showed that the key differences between the types of burials encountered in Bosnia-Herzegovina and Kosovo related to the following:

- The location of the graves. In Kosovo the victims were almost always buried, or left lying, close to or within their own homes and villages. In Bosnia-Herzegovina because of the detention of people in prison camps and the migration of families to the 'safe haven' at Srebrenica, many people were killed and buried at a distant location from their homes.
- The sheer size and scale of the graves. Whilst the graves at the cemetery sites in both countries were broadly similar in size, the mass graves in Bosnia-Herzegovina were far larger than any observed in Kosovo.
- The numbers of individuals within the graves, and by implication the numbers of individuals killed in any single incident. In the majority of cases, the numbers of individuals recovered from the mass grave and deposition sites in Bosnia-Herzegovina far exceeded those recovered from graves and other burial contexts in Kosovo.
- Demonstration of 'intent'. In Bosnia-Herzegovina there was evidence that partially full graves and empty ones had been pre-dug to accommodate the victims of planned executions. This phenomenon was not observed in Kosovo
- The construction of the graves. The vast majority of mass graves in Bosnia were dug by machine. This was observed in a limited number of graves in Kosovo, but it was much more common for them to have been dug by hand, by family and acquaintances.

- There were more incidents in Kosovo where the victims were left unburied after they had been killed. A large number of victims were left on the ground surface at the mass deposition site in Ravnice, Bosnia, but this was unusual when compared to the care which had been taken to hide the other victims in the mass graves around Srebrenica.
- The level of subsequent disturbance to the graves. In Bosnia-Herzegovina there was extensive movement of the bodies of victims using heavy machinery between execution sites, primary, secondary and possibly even tertiary, grave sites. In Kosovo this was seen on only a very limited scale.

7.1.5. What were the causes of death in children, what types of injury patterns were seen and did this vary according to age, sex and geographical location? Did cause of death in children vary from that seen in adults?

In Bosnia-Herzegovina children were killed by gunshot wounds, blast injuries and a combination of blunt force trauma and gunshot wounds. Of these, the overwhelming majority of deaths were caused by gunshot wounds. In Kosovo, the causes of death in children were more diverse and included gunshot wounds, blast injuries, blunt force trauma, sharp force trauma, and combinations of gunshot wounds and blast, blunt and sharp force trauma. As in Bosnia-Herzegovina, the most common cause of death was gunshot wounds, but a far greater number of children in Kosovo than Bosnia-Herzegovina were killed by blast injuries. This is attributable to both the NATO bombing campaign and the frequent shelling of villages by Serb paramilitaries in Kosovo. It should be remembered however that the forensic data from Bosnia related primarily to the mass grave sites and with the exception of two death certificates it did not include information from besieged cities such as Sarajevo and Gorazde.

The majority of children in Bosnia-Herzegovina were killed by multiple, as opposed to single, gunshot wounds. Where single gunshot wounds had caused death, the torso was the region of the body most frequently affected. In Kosovo the numbers of children killed by multiple and single gunshot wounds was more evenly balanced although deaths by multiple gunshot injuries predominated. The majority of children killed by a single

gunshot wound in Kosovo had been shot in the head. The second most frequently targeted area was the chest, but this was a considerable way behind causing half as many deaths as gunshot wounds to the head.

The location of the gunshot wounds is significant. The multiple gunshot wounds to diverse parts of the body sustained by the majority of children in Bosnia-Herzegovina are typical of semi-automatic weapon fire of the type used in the mass executions. Where single shots were sustained only one of these was to the head and the rest were seemingly randomly distributed in the chest, torso and limbs. In Kosovo the cause and distribution of the multiple gunshot wounds was broadly similar, and this was particularly evident where large family groups had been killed simultaneously. The location and nature of the single gunshot injuries differed, however, suggesting that they were not random shots sustained in the cross fire of a killing spree. These execution style shots were not restricted to the older age groups. For example, a six month old baby, a three year old and a five year old child were shot in the head and two four year olds were shot in the chest. It was difficult to assess the relative percentages of males and females killed by single shots, as the sex of over half the children could not be determined. Females were however represented in both the five to 10 and 10 to 15 year age groups

Analysis of the type, number and location of injuries revealed that whilst some similarities existed in the way that children were killed in Bosnia-Herzegovina and Kosovo, there were also clear differences. As with the burial patterns, this suggests that the motives and behaviour surrounding the murders were also different in the two countries. Whilst the evidence relating to cause of death indicated that in Bosnia-Herzegovina older boys were being killed in the same style as adults in mass executions, in Kosovo babies and toddlers who obviously could not have been mistaken as adults or perceived as a threat were being deliberately targeted.

There was evidence of children having been beaten before they were killed in both Bosnia-Herzegovina and Kosovo and in both countries this was not confined to those aged over 10 years. In Bosnia-Herzegovina one victim was only five and a half years old and in Kosovo, a seven year old victim was identified. In Bosnia-Herzegovina there were no examples of children having been killed by blunt force trauma or sharp force trauma alone. This was not the case in Kosovo where a number of children had been beaten to

death and one had died from having his throat cut. These deaths were restricted to children aged over 10 years, and the majority were of unknown sex. Where sex was identifiable the victims were both male.

When the adult data was examined for the purposes of comparison, although gunshot wounds accounted for the vast majority of deaths in both countries, in Kosovo, as with the children, there were a greater number of causes of death. There were also more causes of death which involved close physical contact, for example, blunt and sharp force trauma, drowning and strangulation. Deaths caused by sharp force trauma included a case in which an axe was used and an incident where a male who was tied up was stabbed multiple times. These actions seem more personal and spontaneous than the acts of mass murder committed using semi-automatic weapons seen in Bosnia-Herzegovina.

The circumstances surrounding death and the subsequent post-mortem treatment of the remains were most similar when the victims from Kosovo and those recovered from the cemeteries at Slap and Pasinac were compared. The majority of the children exhumed from there were not only younger than those identified in the mass graves, but some also showed evidence of having been beaten before death. The individual autopsy reports of the adults were not available for comparison, but a summary by the Chief Pathologist describes how over a quarter of the victims from Pasinac had been kicked, beaten, strangled or stabbed (Clark, 2000a). A closer examination of the data from similar cemeteries and other burial contexts in Bosnia-Herzegovina would provide a more comprehensive picture of what occurred throughout the country.

The research showed that although gunshot wounds were the most common cause of death in children and adults alike, proportionally more children than adults in both countries were killed by blast injuries. It was also identified that in both countries, where victims had been killed by multiple gunshot wounds, adults had sustained more shots (per individual) than children. With the exception of these findings, there was very little difference in the causes of death seen in adults and those observed in children.

7.1.6. Were there any artefacts associated with the victims that provided evidence of criminal activity and if so, what were the implications of this?

Artefacts that provided evidence of criminal activity were associated with the victims in both countries. They included blindfolds, ligatures and multiple types of ballistics. Two firearms were also retrieved, one from Kosovo and one from Bosnia-Herzegovina.

Ligatures were found, primarily around the wrists, of victims in both countries. A far greater number were recovered from Bosnia-Herzegovina where they appeared to have been systematically applied at a large number of sites. In some cases rather than just being used to restrain individuals they were used to tie them back to back. The pathological evidence indicates that they were shot whilst in this position, with bullets from some individuals having passed through another first. Different types of ligatures were observed at different mass grave sites and it was possible to link some of the primary and secondary graves through matching the materials used. Ligatures were applied in a less systematic fashion in Kosovo where they appeared to have been made from whatever material was available: for example, cable wire and electrical tape were commonplace.

Blindfolds were found in association with only a few victims from Kosovo, and a great deal more from Bosnia-Herzegovina. The infrequent occurrence of blindfolds in Kosovo indicated that it was not a typical part of the execution process. This was not true of Bosnia-Herzegovina where, as with the ligatures, they had been applied in a systematic fashion at a number of the mass grave sites. There was also evidence that the same material had been used to make the blindfolds within and between the execution and grave sites.

Thousands of pieces of ballistic evidence were recovered from victims and their immediate environments in Kosovo and Bosnia-Herzegovina. Analysis of the data showed that slightly more items were retrieved from Bosnia-Herzegovina and they were associated with a larger percentage of the deceased. The ballistic evidence types were similar in nature in both countries and included a wide range of shrapnel, bullets, cartridge cases, shell cases, shot gun pellets and pieces of hand grenade. The most frequent type of bullets observed in both countries were copper jacketed 7.62 mm bullets of the type fired from AK47 rifles. There was a more diverse range of bullets described in

Kosovo which included 9 mm rounds from hand guns, generally used to kill people at close range. Live rounds were found on only three individuals, one from Kosovo and two from Bosnia-Herzegovina. The sheer amount of ballistic evidence associated with the deceased was testament to the amount of weaponry and level of violence directed against an almost entirely civilian population.

7.1.7. Were there any artefacts associated with the victims that provided information about their identities and lifestyles and if so, what were the implications of this?

Identity documents, money, religious items, clothing, personal effects such as watches, keys, jewellery, and items related to personal grooming, medical care and smoking, were all found with the deceased. The types of personal items observed in both countries were very similar and also recovered in broadly similar amounts. With the exception of money, some of the more expensive watches and the identity documentation which might lead to a suspect being prosecuted, these personal items would have had little or no value to anyone other than their owner and their families.

Identity documents were retrieved in a relatively low percentage of cases indicating either that the victims had not possessed or carried them in the first place, or that the perpetrators of the crimes had removed them to try to conceal the identity of the deceased. The latter interpretation would provide evidence that the offenders were making some attempt to evade capture and prosecution and it would fit with the many witness accounts of identity documents being taken from people before they were executed (see Section 7.1.9),

Money was found with slightly more of the victims in Kosovo than Bosnia-Herzegovina, but even there the percentages were low. It was surprising that in a few cases in both countries large amounts of money had been left on the person of the deceased. A number of explanations could be offered for this, including:

1. The individual who committed the crime was in a hurry to get away and therefore did not have time to search the deceased
2. The perpetrator did not care about robbery as murder was the primary motive
3. The victim had not been searched prior to the murder and his or her body was not readily accessible afterwards.

The religious items found on the deceased were all Muslim with the exception of a gold chain with a pendant and two crosses found on a man from Suva Reka, Kosovo. This could have belonged to Serb of Orthodox faith or, more likely given the burial context, a Kosovo Albanian of Catholic faith.

The clothing and surviving identity documents were useful as a supplementary means of identifying the deceased and for assigning tentative sex when this could not be determined biologically or confirmed by family members.

7.1.8. Did the artefacts found with children differ from those found with adults?

In the majority of cases children had fewer artefacts associated with them than adults. They had no religious items and very little money, but this probably reflected their situation in life. Evidence of identification was extremely limited in children from Kosovo and non-existent in children from Bosnia-Herzegovina, as with the adults it could not be determined from the forensic data alone whether this had been removed after death, or if they had never carried it. Personal items such as beads, marbles, jewellery and combs, were found in almost exactly the same percentage of cases in Kosovo and Bosnia-Herzegovina.

In both countries there was less ballistic evidence associated with children than adults suggesting that on average they had been shot fewer times. This actually reflected the pathology findings relating to numbers of injury sites observed in children and adults. Ligatures and blindfolds were not found on any of the children from Kosovo, but they were found on a small number of children from Bosnia-Herzegovina.

7.1.9. Does the forensic evidence support the witness accounts and anecdotal evidence as presented in NGO reports and literature relating to the wars?

Broadly speaking, the forensic evidence in the database did support the literary accounts of what happened in the wars (see Chapter Two, Sections 2.1, 2.3 and 2.4).

Certainly there is solid evidence to support the descriptions of the mass executions in Bosnia-Herzegovina and massacre of families in Kosovo, in the form of the bodies themselves and the burial data.

In terms of patterns of segregation and execution, there were many reports from both countries of men being separated from women and children prior to them being executed. Whether this is reflected in the data from Bosnia-Herzegovina hinges around the definition of the word 'child'. If this is interpreted in accordance with the parameters defined in the research, i.e. 15 years or younger, then the findings are contradictory to the reports as the evidence indicates that children were included in the mass executions, albeit in relatively low numbers. If however, it is accepted that the age limit for adulthood was younger in the view of the perpetrators, for e.g. 12 years, then there does appear to have been a concerted effort to exclude children from the process. That said, this does not account for the 10 and 11 year olds who it is hard to imagine resembled adults, nor the children recovered from cemeteries who were even younger.

The forensic evidence clearly shows that segregation of men from women and children prior to execution did not always happen in Kosovo. There is however mention of this in witness accounts and Human Rights Watch did make the observation that "women and children in groups were more often killed together with any other family members" (Human Rights Watch, 2001: 423). This is corroborated by information in the database relating to the age, sex, and geographical location from which the children were recovered.

Accounts of the theft of identity documents from victims prior to execution, in both countries, is supported by their absence on many of the victims, although this type of negative evidence must be viewed with caution.

The age and sex of the victims recorded in the database is broadly supportive of witness accounts although a number of discrepancies were observed. These included a reported greater male bias in the victims from Kosovo than was observed in the forensic evidence (Human Rights Watch, 2001:420) and a younger minimum age in the children from Srebrenica than was previously identified (Manning, 2003: 21). Human Rights Watch did, however, observe a female bias in younger children which was supported by the research data (2001:420).

Anecdotal evidence which appeared contradictory to the findings of the research included a report to OSCE from a woman in Kosovo who described how she had heard a Serb paramilitary specify that they had to kill young boys because otherwise they would grow up and seek revenge (OSCE, 1999a: 209). The age and sex data does indeed support this, but the fact that the young females outnumbered the males suggested that there was a wider remit. In Bosnia, militia leaders allegedly instructed their armies that "they had no right to spare women, children or the aged" (Sells, 1998:75). This was not evidenced in the data from the mass graves, but it may have been the case in the towns and villages.

There were some discrepancies between the forensic evidence and the human Rights Watch report surrounding the areas least and worst affected by the war in Kosovo. Analysis of the numbers of bodies exhumed from each region proved that claims such as "Pristina was spared the large scale killing that occurred to the west in Drenica during the spring of 1999" (2001: 118) were simply incorrect. With the exception of Orahovace, more bodies were recovered from Pristina than any other municipality. Anecdotal evidence that linked the most badly affected areas to KLA strongholds (ibid: 250; Berisha *pers. comm.*) were largely correct but closer analysis of the data revealed that with specific reference to child deaths, this had a reduced impact and that the key factor was the ethnic diversity of a region.

The sheer size and scale of the executions and burials which took place in the Srebrenica region of Bosnia-Herzegovina is incontravertable and this is fully supported by the forensic data. Further work is required however, to produce comprehensive data relating to the the murders which took place elsewhere in the country.

The debate continues over the total number of people killed in both countries and this cannot be corroborated or refuted from the forensic data in this research alone. When the exhumations are complete, there will then be the opportunity to assess this.

It can be seen from the information presented in Section 7.1 that it was possible to address all of the research questions outlined in Chapter One, although the findings were less comprehensive in some areas than others. For example, the methodological problems associated with determining sex in children meant that it was difficult to analyse any patterns relating to the sex of child victims, and the sites examined in Bosnia-Herzegovina were restricted largely to the Srebrenica region. There was, however, sufficient data to make a thorough analysis of the ages of the child victims and their causes of death. The key findings relating to all the research questions are summarised in tabular form in Chapter Eight, Section 8.3.

7.2 The Integrated Forensic Database

Fundamental to the success of this research was the development of the single integrated forensic database. The data originally received from The Office of the Prosecutor at the International Criminal Tribunal for Former Yugoslavia was in many formats, including two databases which had already been created. Whilst they contained information based on investigations and examinations which had been conducted to the highest professional standards, they were not fit for purpose in terms of the requirements of this research (see Chapters One, Four and Five). This initiated the long and complicated process of generating a new single database from copies of the existing ones by modifying data fields and tables, correcting duplications, errors, inconsistencies and omissions, and removing information that was not relevant to the research. This newly created database was expanded by the addition of data from individual autopsy reports and summary reports of chief pathologists, anthropologists and archaeologists. The end result was a database that was capable of addressing all the research questions outlined in Chapter One and discussed above.

The structure of the database and the forms created as part of this research are such that new records can now be entered at any time should this opportunity arise. Further tables can also be added if future researchers wish to examine different aspects of the conflicts

within the existing dataset. For example, once the trials and appeals are complete it may be possible to include and analyse intelligence information surrounding the crimes, either from the perspective of the ICTY investigators or the witnesses themselves. It would also certainly be of value to add the data collected since 2001, to examine information relating crimes perpetrated against other ethnic groups in both Kosovo and Bosnia Herzegovinia, or even to extend the parameters of the research geographically to other countries in the Balkans.

CHAPTER EIGHT

CONCLUSIONS

"The dead in these graves were, in the main, victims killed deliberately, brutally and systematically and, by and large, not killed in combat. They were killed not because of what they had done, but because of who they were"

Professor P. Vanezis, forensic pathologist (1999: 240)

"How do I feel about the things that I did in those three months that I spent in the Sušica camp? Only I know that. But I genuinely feel shame and disgrace. But as you heard here, on the one hand, I carried weapons in Sušica, I wore a uniform; and on the other hand, there is the fact that there were women there, aged the same as my mother, there were children there, there were people who used to be friends of mine, whom I used to see over the years in cafes, on sports fields, and playgrounds, with whom I spent summer vacations. And when I think about all of this, it turned into a nightmare that is pursuing me these days and that I see over and over again in my sleep. The question arises why did I do all that?"

D. Nikolic, convicted war criminal (2003)

8.1 The Value of the Research

The excerpts above represent the perspectives of a pathologist who was involved in investigating war crimes in both Kosovo and Bosnia-Herzegovina, and a war criminal convicted of crimes against humanity, which included murder, sexual violence and torture, in Bosnia-Herzegovina. The latter is taken from the guilt statement of Dragan Nikolic, issued at the ICTY court. In it he goes on to say that, although he has had 11 years to think about about it, he doesn't really know the answer to his question.

It is difficult to comprehend the events which led to the outbreak of the wars in the 1990s and even more difficult to understand how, in many cases, people who had previously lived together in harmony were able to commit some of the crimes described in the ICTY indictments and other literature. The subject is an extremely emotive one, particularly with regard to the child deaths, and part of the value of this research is that it has enabled some of the forensic evidence to be evaluated objectively. This has resulted in the

production of this thesis which, in itself, serves as a document of extreme human rights violations perpetrated against children in Kosovo and Bosnia-Herzegovina during the conflicts of the 1990s.

In relation to the data collected by ICTY experts between 1996 and 2001, it provides an accurate record of the numbers of children killed and detailed information on the cause of their deaths and subsequent treatment of their remains. It provides an analysis of the socio-political circumstances surrounding the killings and a comparison between the situation in Kosovo and Bosnia-Herzegovina.

In its current form, the research can be used as a historical and scientific resource by those wishing to study both the events surrounding the wars in Kosovo and Bosnia-Herzegovina and the scientific methods used by experts in the field to investigate the crimes. The methodology employed during the research, including the creation of the database, is described in detail and it is directly transferrable to other studies of a similar nature.

8.2 Summary of Findings

The detailed discussion in Chapter Seven of the findings from the key research questions showed that differences were identified between Bosnia-Herzegovina and Kosovo in terms of the demographic profile of the child victims, their causes of death and burial locations. Placed within a wider context, these findings appear to reflect different motives, behaviour patterns, levels of organisation and planning in the two countries. The mass detentions, executions, burials and subsequent movement of bodies observed in Bosnia-Herzegovina would have presented considerable logistical challenges. These must have been thought out well in advance of the crimes, and the precision with which the tasks were carried out suggests that those involved had received some kind of training. With regard to children within the mass graves, there certainly appeared to have been a selection process: where sex could be determined, all the victims were male, all were aged over 10 years and the majority were aged over 13 years. The motive for some of the murders has already been proven by the International Criminal Tribunal for Former Yugoslavia to be genocide (ICTY, 2001f), and this verdict is strongly supported by the forensic evidence.

The situation in Kosovo also followed a pattern but one which appeared to be less centralised, consisting of widespread, repeated sporadic outbursts of violence directed at entire families. The location of the killings, the families who were targeted and the nature of the crimes suggest a motive which was part hatred, part revenge, and part terrorism. The attacks were designed not just to kill citizens but to create a climate of fear which would force Kosovo Albanian families to leave the country. This was, therefore, a form of ethnic cleanising, albeit a less organised one than that seen in Bosnia-Herzegovina. When child deaths alone were analysed it could be seen that children as young as six months were deliberately murdered, for example, by a single gunshot wound to the head, and in those aged less than 10 years there were more female than male victims. The pattern which emerged in the forensic evidence from Kosovo is one of extreme violence, frequent disregard for the age and sex of the victims, and an apparent lack of concern that the crimes would be discovered and prosecution and punishment might ensue.

Table 45 summarises the key differences between the two countries identified from the forensic evidence.

Table 45: Summary of differences between child deaths and burials in Bosnia-Herzegovina and Kosovo

Data Analysed	**Kosovo**	**Bosnia-Herzegovina**
Condition of remains	Overall in better condition than Bosnia, more complete bodies and fewer skeletonised remains	Overall in worse condition than Kosovo, more incomplete bodies and more skeletonised remains
Numbers of children killed	199 (6.3% of victims of known age)	50 (2.6% of victims of known age)
Demographic profile of child victims	More female children in Kosovo than Bosnia and greater percentage of young children aged < 10 years	Only one female child identified and majority of child victims aged > 10 years
Demographic profile of adult victims	Greatest number and percentage of deaths seen in 30 to 65 years age group. More victims aged over 65 years than seen in Bosnia	Greatest number and percentage of deaths seen in 30 to 65 years age group. Fewer victims aged over 65 years than any other age group in Bosnia including children.

Cause of death in children	Most common cause of death gunshot wounds. More children killed by other means, including blast injuries, than seen in Bosnia. More deaths caused by violence which required personal contact. More single gunshot wounds to the head than seen in Bosnia	Vast majority of children killed by gunshot wounds. Fewer deaths caused by violence which required personal contact than seen in Kosovo. Fewer examples of single gunshot wounds to head. No examples of deaths caused by blunt or sharp force trauma alone
Type and Location of burial sites of children	Predominantly single graves located across the country. Victims often buried by families. Greater number of sites where children left unburied than Bosnia. Little disturbance and movement between graves. Fewer numbers of child deaths in ethnically diverse municipalities even where KLA were active	Limited largely to mass grave and deposition sites around Srebrenica region. Youngest victims found in individual graves in cemeteries associated with towns in north and east of country. Extensive evidence of disturbance to mass graves and movement of bodies between sites. No pattern identified between numbers of children killed and grave location
Personal effects associated with children	Few documents which could be used to identify children. Very little money and no religious items. Few personal effects, approximately same type and quantity as seen in Bosnia	No documents which could be used to identify children. Very little money and no religious items. Few personal effects, approximately same type and quantity as seen in Kosovo.
Forensic evidence with children	No ligatures or blindfolds found on children. Similar amount of ballistic evidence to Bosnia, but type more varied and smaller percentage of bullets than seen in Bosnia	Ligatures and blindfolds found on children. Similar amount of ballistic evidence to Kosovo, but greater percentage were bullets
Forensic evidence compared to witness and anecdotal accounts	Forensic evidence broadly supports witness and anecdotal accounts	Forensic evidence broadly supports witness and anecdotal accounts

8.3 Recommendations for Future Research

The research highlighted a number of issues that need to be addressed and generated several ideas for future projects. These are summarised below:

- Since 2001, work has continued in Kosovo and Bosnia-Herzegovina, searching for the remainder of the victims from the conflicts who are presumed dead, exhuming graves which have been located, and identifying those bodies which have been recovered (ICMP, 2010, 2008; Krasniqi, 2009). With permission from the relevant authorities, the information collected from these exhumations can be entered directly into the newly created integrated forensic database. That data could be analysed using the same methodology developed in the research and any patterns and trends identified can be examined and compared to the findings from this research.

- A closer examination of the data from burial contexts other than the mass grave sites in Bosnia-Herzegovina is required. Ideally this would include not just the information derived from ICMP and MPI exhumations, but that from besieged cities and towns such as Mostar, Sarajevo and Gorazde. This data could be obtained from local hospital autopsy reports if they were available. Analysis of this data would enable a more comprehensive assessment to be made of the scale and nature of juvenile fatalities in Bosnia-Herzegovina.

- It was not possible to analyse sex specific mortality patterns in a large number of cases due to the difficulties associated with determining sex in child remains. This could be undertaken in the future using new information based on the results of DNA analysis and the identification of victims since 2001 (ICMP, 2008; 2010).

- Forensic data relating to the killing of non-Muslim citizens in both Kosovo and Bosnia-Herzegovina needs to be collated and reviewed. In Kosovo these deaths are largely attributable to KLA activity before the war and retribution attacks after it (ICTY, 2004; OSCE, 1999a, 1999b). In Bosnia-Herzegovina there were conflicts which ran parallel to the Serb campaign against the Bosniaks, the most prolonged and devastating being the Croat-Muslim war in which thousands of people died (Malcolm,

1996: 249; ICMP, 2008). A lot of data relating to these crimes is already available and, with permission, could be entered into the forensic database for analysis.

- The methods employed in the construction and refinement of the database can be applied to other large currently unmanageable datasets relating to fatalities resulting from war crimes. In addition to extending the parameters of the research to include other countries in the Balkans such as Croatia, the same methodology could be applied to countries outside Europe where wars have taken place and large numbers of people were killed or are still missing, presumed dead.

- Although greater stability has been brought to the Balkans since the end of the conflicts in 1999, due to the complex nature of the problems in the region there is still the potential for violence to erupt. This research is particularly important for those governments and non-governmental organisations involved in the protection of children, such as Human Rights Watch, Amnesty International, and the International Committee of the Red Cross (ICRC), as the trends and patterns identified could be used to predict serious human rights violations against children in the future. This has implications for the planning of future operations at every level, from the timing of military intervention to the setting up of criminal investigations in the field.

- The findings can be used to create a predictive model for ongoing and future investigations, both in terms of quantifying the actual or potential scale of crimes, and with regard to specific issues such as locating graves. It could be of value to such initiatives as the ICRC's "The Missing" (ICRC, 2003), which aims to resolve the problem of people unaccounted for as a result of armed conflict or internal violence. Aspects of this initiative include locating and facilitating the recovery of the deceased as well as reuniting the survivors of war, many of whom are children. The identification and recovery of the deceased from conflicts such as those in Bosnia-Herzegovina and Kosovo is vital not just to ensure that all aspects of a criminal investigation are complete, but for humanitarian reasons so that survivors can embark upon the grieving process (Miranda, 2003).

- The research could be used as a foundation for further studies into the social and economic consequences of the crimes committed against children in Kosovo and Bosnia-Herzegovina. This might encompass a study of the impact that the deaths and population displacement had upon the local economy, social infrastructure and psychological profile of the affected communities. This is an important consideration in terms of the potential for hostilities to be perpetuated between the different ethnic, political and religious groups involved and the role that government policy plays in dealing with such issues.

8.4 Concluding Statement

There is perhaps still a remnant of disbelief amongst the general public and politicians that such atrocities could be perpetrated against children in Europe in the last decade of the 20th century. It is easier to accept these unpalatable facts if the killings are thought to be coincidental or even accidental. The research has shown that this was not the case.

Although the patterns of child murders and subsequent post-mortem treatment of remains were very different in Kosovo and Bosnia-Herzegovina, in both countries deliberate acts of violence were perpetrated against children with the specific purpose of ending their lives.

Accurate analysis of information from the past is extremely important in order to ensure the safety and protection of children in the future. The power of such research is fundamental to the construction of policies and strategies for future governmental implementation.

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APPENDIX ONE

Mapping of categories used to describe condition of remains (Chapter Six, Section 6.1)

Terms used in original descriptions	*Category assigned in final integrated database*
Skeletonised	Largely or Totally skeletonised
Largely or totally skeletonised	
Skeletonised and disarticulated	
Virtually skeletonised	
Partly skeletonised	Partially Skeletonised
Severe decomposition/severely decomposed	Advanced Decomposition
Grossly decomposed	
Advanced decomposition	
Almost liquefied	
Badly decayed	
Badly decomposed	
Putrefied/advanced decomposition	
Extensively decomposed	
Severely decomposed adipocere	
Highly decomposed	
Very decomposed	
Markedly putrefied	
Very putrefied	

Terms used in original descriptions	*Category assigned in final integrated database*
Early state of putrefaction	Moderate Decomposition
Early adipocere formation	
Moderately decomposed	
Moderately well preserved	
Moderately preserved	
Moderately putrefied	
Slightly putrefied	
Putrefied	Decomposed
Reasonable state of decomposition	
Decomposed	
Decomposition and fragmentation	
Partially skeletonised and mummified	Mummified
Mummified	
Partially mummified	
Decomposed and slight mummification	
Well preserved perhaps with skin and soft tissue	Well preserved with skin and soft tissue
Relatively well preserved	
Good state of preservation	
Fairly well preserved	
Well preserved substantial amount of soft tissue	

Terms used in original descriptions	*Category assigned in final integrated database*
Heavily Burnt	Burnt
Heavily burnt and charred	
Evidence of heat	
Heavily carbonised	
Completely burnt	
Burnt	
White blue calcined	
Burnt calcined	
Burnt and incinerated	
Burnt and skeletonised	

Descriptions which could only be categorised with reference to information in *DESCRIPTION OF REMAINS* field:

Disarticulated

Moderate to severe decomposition

Degree of preservation between the two

APPENDIX TWO

Tables

i) Age at Death

Numbers of children in each age group in Bosnia-Herzegovina and Kosovo

Age Range	**Number of children**
0 to 5 years	33
5.1 to 10 years	63
10.1 to 15 years	153
Total	249

Numbers of children within each age category in Bosnia-Herzegovina

Age Range	**Number of children**
0 to 5 years	1
5.1 to 10 years	5
10.1 to 15 years	44
Total	50

Numbers of children within each age category in Kosovo

Age Range	**Number of children**
0 to 5 years	32
5.1 to 10 years	58
10.1 to 15 years	109
Total	199

ii) Cause of Death

Cause of death in 15 to 18 year olds and adults over 18 years in Bosnia-Herzegovina

Age	No. killed by gunshot	No. killed by blast injuries	No. unascertained
15-18 years	69	5	31
Adult	823	49	885

Cause of death in 15 to 18 year olds and adults over 18 years in Kosovo

Age	No. killed by Blast	No. killed by Gunshot	No. killed by Blunt Force	No. killed by Sharp Force	No. unascertained
15-18 years	10	85	1	3	23
Adult	106	1707	44	38	758