How developments in the science and technology of searching, recovering and identifying the missing/ disappeared are positively affecting the rights of victims around the world

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Abstract
This article examines the ways in which missing persons have been dealt with, mainly in the former Yugoslavia, to show how the huge advances made in the search for, recovery and identification of those who disappeared is positively impacting on the ability of families to find their loved ones. The article surveys the advances made in dealing with the missing on a range of fronts, including the technical and forensic capacities. It examines some of the other developments that have occurred around the world with regard to the search for, recovery and identification of people and makes recommendations on how to make improvements to ensure that the rights of families around the world, as well as a range of other human rights, including truth and justice, are enhanced.

Key words: human rights, missing persons, disappeared persons, science, DNA, search, recovery, identification

Introduction
The issue of dealing with people who have gone missing or disappeared has not received much attention until recently. While there have been many jurisprudential developments since the mid-1990s in dealing with the issues relating to people who have suffered an enforced disappearance, because the issue of missing persons is seen to be an issue relating to humanitarian law, little has been done to focus on that group of people, generally and specifically, within the human rights framework. However, from a definitional point of view, people who have disappeared and those who have gone missing often overlap, and in fact the demarcations of who is a disappeared person and who is a missing person are in practice not clear, mostly misunderstood and in need of greater delineation. Regardless of how people who cannot be found are designated, the issues associated with them are important and under-emphasised. Much needs to be done to deal with a
Jeremy Sarkin

myriad of issues associated with those who have disappeared as well as with those who are missing.

The numbers of people who are missing are massive, and large numbers of missing persons cause on-going problems for many states.\(^5\) Tens of millions of cases of people who fall into the categories of the missing or the disappeared have been reported globally. These include victims of armed conflict as well as persons who cannot be found as a result of human rights violations, including human trafficking, organised crime and various acts of violence. However, people also cannot be found as a result of disasters, migration and a range of other events. Gathering detailed information on such persons is a near-impossible task. Most organisations rely on local authorities (with varying levels of accuracy), survivor interviews and local non-governmental organisation and media reports. Many disappeared and missing persons are not reported as such for a variety of reasons, including fear, the inability of family members to do so, a belief that there is nowhere to make such a report and a belief that it is a waste of time. The data on missing and disappeared persons is therefore often limited for that reason. The information is also unavailable because finding the information, where such cases are reported, is problematic. Even organisations focused specifically on missing or disappeared persons around the world, such as the International Commission on Missing Persons (ICMP) or the International Committee of the Red Cross (ICRC), do not have comprehensive statistics. Some organisations focus only on particular parts of the world and on certain categories of people. When they publish information it is often geographically specific and about a target group exclusively. Thus, finding comprehensive, systematic and detailed information is not possible.

The issue of searching for, recovering and identifying the missing/disappeared has specifically come to the fore internationally, at least in part, because of events in the former Yugoslavia and the processes that were followed there to deal with the consequences of the war, when thousands of people disappeared (although they are commonly termed missing) there. The process for dealing with such cases has seen a greater focus on dealing with such issues, as never before, and there have been remarkable developments which have aided issues connected to the missing/disappeared in general in many places around world.

The events in the former Yugoslavia in the aftermath of the conflict that occurred at the beginning of the 1990s, as well as in a number of other places, such as Argentina, Colombia, Chile, Guatemala, Mexico and Peru, are important for a variety of reasons relating to the search for, recovery and identification of people who have gone missing or disappeared. This article does not examine all of the countries where DNA and other scientific and technological processes have been used successfully. It focuses on Bosnia-Herzegovina (BiH) and examines the processes followed there to indicate how tens of thousands of people can be successfully searched for, recovered and identified, in spite of massive challenges and difficulties. The success of the process in that part of the world shows that relatively large numbers of the missing can be dealt with, particularly if there are the political will and the resources to do so. Often, however, in some states, the political will is lacking because of who was involved in the atrocities and the perceived political
Developments in the science of identification

fall-out from investigating and pursuing such cases. As a result of events specifically in BiH, but elsewhere as well, many more countries are trying to deal with their missing persons in a much more systematic way. The obstacles to dealing with such cases still remain, and political considerations are often paramount. International pressure can play a role in ensuring that these cases receive the attention they deserve.

This article examines the way in which missing persons have been dealt with, mainly in the former Yugoslavia, to show how the huge advances made in the search for, recovery and identification of those who have disappeared is positively impacting on the ability of families to find their loved ones. It surveys the advances made in dealing with the missing on a range of fronts, including the technical and forensic capacities. It examines some of the other developments that have occurred around the world with regard to the search for, recovery and identification of people and makes recommendations on how to make improvements to ensure that the rights of families around the world, as well as a range of other human rights, including truth and justice, are enhanced.

**Developments for missing persons as a result of processes in the former Yugoslavia**

Possibly 150,000 people were killed during the conflicts that occurred in the former Yugoslavia in the early 1990s. In BiH alone, about thirty-two thousand people disappeared (although they are termed the missing) in incidents, many criminal and some of which have been classified as genocide. The number that went missing in BiH was out of a total of forty thousand who disappeared in the Western Balkans as a whole. The difficult task of searching for those people was made even more so because perpetrators hid the bodies of their victims to try to avoid their crimes becoming public knowledge. They later exhumed and moved the remains under cover of darkness, once they had determined that the whereabouts of the graves were known. The culprits used large earth-moving equipment to do this, intermingling the human remains and thus making identification much more difficult than it would have been had the bodies been intact. Today, as a result of all the work done to search for, recover and identify the human remains, the remains of more than twenty-five thousand people have been individually identified in BiH. In spite of the perpetrators hiding and then disturbing the graves, scientists, including forensic archaeologists, have been able to determine when the graves were excavated, when some of them were exhumed, when some of the graves were refilled, what was used to dig the graves, when the bodies were placed in the graves and who were in the graves. This has helped to determine who the perpetrators were and why these atrocities were carried out. As a result of the work it has been easy to determine what group the victims came from, and thus genocide arguments have not been difficult to make and have been less difficult to prove in court. A variety of new and improved scientific and technological techniques have been used to identify the remains. Various items found in the graves, including clothing, papers and other objects, were used to assist the processes of human identification and of
determining when the atrocities occurred, how, by whom they were perpetrated and a variety of other questions.

Without the integrated multidisciplinary forensic and other processes, involving a range of professionals including forensic archaeologists, forensic anthropologists, pathologists, DNA experts and information technologists, the denials of perpetrators, especially in various criminal trials, would have been difficult to overcome. This was critical to determining the truth about what had occurred. It is an issue of vital significance in BiH. The truth has a variety of versions: who the victims are, how many there were, who carried out the atrocities and even whether the victims were victims of crimes or ‘usual’ casualties of war are all contested. Bosniaks, Serbs and Croats each have vastly differing views on these matters. However, as a result of the forensic and other work there is now absolute certainty in most quarters as to who the victims were, as well as when, where and by whom they were killed. The certainty about what transpired is a direct result of the use of forensic and other sciences. Obtaining certainty is critical for a variety of reasons, including as a bulwark against impunity. From a victim perspective, certainty about the disappearances and the results thereof was noted in the Inter-American Court of Human Rights in the case of Bámaca-Velásquez v. Guatemala. There it was held that:

Forced disappearance is characterized, among other matters, by creating a situation of overwhelming uncertainty about whether the victim is alive or dead; in other words, about whether he continues or has ceased to exist. This situation arises from the fact that the authors of the disappearance, not only cut off all forms of communication between the person who has disappeared and the society to which he belongs, but also eliminate any trace or information, about either the survival or death of the person in question (except for the mere passage of time as a growing sign of the probability that the victim is dead). In other words, the abductors create a state of uncertainty about the existence of the person who has disappeared.

In BiH not only have the human remains largely been identified, but the science has been used in court cases in a variety of settings, including at the International Criminal Tribunal for the former Yugoslavia (ICTY). Prosecutions and convictions have occurred as a result of these identification processes, and even civil cases have been brought to trial, such as that against the Dutch government, whose peace-keepers were alleged not to have stopped the atrocities when they were in a position to do so.

As far as concerns the enormous violations that occurred in Srebrenica in 1995, when more than eight thousand men and boys disappeared, seven thousand of these people’s human remains have been found in hidden mass graves. Most of them have been identified with a high degree of certainty, and their bodies have been returned to their families to perform their usual rituals. The relatively high numbers of identifications indicate enormous progress in the search for, recovery and identification of those missing people.

The process of dealing with the missing in BiH differs, to some degree, from
what has happened in other places around the world. Although there have been many places where large numbers of people have gone missing or disappeared, what took place in BiH to find such people has never happened elsewhere on such a scale and with such degree of certainty. That this is so is because the outside world, and particularly the United States of America, through the offices of President Bill Clinton, decided that if BiH was to move forward this was an important issue in need of attention. President Clinton therefore supported and moved strongly for the establishment of the ICMP. Thus it was that the search, recovery and identification processes were established shortly after the war. Also, through a domestic process pushed by ICMP, the BiH created a Missing Person’s Institute (MPI) and other courses of action to deal with missing people. This happened despite the political controversies that continue to plague BiH on account of identity issues. The political situation was aided to some degree by the involvement of the international community and the criminal justice system. This has significantly benefited the process of dealing with the past. The issues have further benefited from processes that are inclusive, and not specific to a particular group. A range of organisations have been involved, ensuring greater awareness and encouraging participation in these matters. The relatives of the missing have been closely involved in the identification process. They have been keen for it to bear as much fruit as possible, and have submitted more than 120,000 ante- and post-mortem materials for examination. These include genetic materials in order to match the DNA of recovered human remains to that of relatives.

It is critically important to note that the collection of human remains was dealt with as a criminal matter. The aim of all that processes that were followed was to enable the forensic evidence that was collected to be presented in criminal trials, if necessary. This would assist both local and international courts; it would ensure that high standards were attained in carrying out the work and that allegations of bias or mistakes could be easily countered. The collection of evidence was therefore done in very meticulous and methodical ways, using the very best scientific and criminology methods, so as to ensure that samples were not contaminated and chains of evidence were kept to the highest standards. All persons working in graves, as well as those doing autopsies and all other processes, were very well trained and dealt with procedures in highly skilled and controlled ways. Certainty was viewed as an absolute necessity, both for the criminal processes and for the relatives; mistakes were to be avoided. All graves were presumed to be crime scenes and were not to be contaminated in any way. Coordination between all the various agencies was a priority; nothing was to be rushed, so as to avoid making errors. The process demanded confidence in the accuracy of the outcome when remains were handed over to the families and death certificates given. Use of the latest available scientific equipment and processes was essential, both to aid identification and ensure that resources would be used well and reliable outcomes would be achieved in a cost-effective way. The processes followed also had the effect of assisting the development of human rights and rule-of-law standards in the BiH. It is important to note here that use of mass-DNA testing is possible only in some contexts, such as in the former Yugoslavia or the 9/11 event, where the circumstances allow it to
be used. It may not always be feasible in other situations, such as in an on-going conflict or in a repressive situation. When the conflict is over, as in the example of BiH, or where democracy has been restored, the use of such testing may become possible. However, mass-DNA testing is not possible for every person in cases where many people have died in a catastrophic event, such as the tsunami that occurred in Asia in 2004. In such an occurrence there are often neither the time nor the resources to test the DNA of hundreds of thousands of people. Hopefully, DNA can be collected and tests can be done later, if possible, but obviously the process will be huge and very expensive.

Developments in dealing with the missing/disappeared

Since the 1990s the ways in which the missing have been dealt with have advanced exponentially. This has come about because of a greater commitment to and interest in doing so around the world as a result of specific tragic events. One of those events was the attack on New York City on 1 September 2001. Despite the enormous difficulties, the remains of most of those killed were found, identified and given to their loved ones. Thus, the recovery and identification of human remains in challenging circumstances can be achieved.

Another example of such labours bearing results was the action taken in various Asian states to deal with the missing from the 2004 South-East Asian tsunami. That case showed how coordination, assistance and resources from a range of places can have a positive impact in the task of dealing with missing persons. These mass events have shown what is possible and that the costs can be managed.

Contemporary methods for dealing with people who have gone missing or disappeared have impacted enormously on processes that are being followed around the world. States that have large numbers of missing people as a result either of conflict or of other events such as disasters realise that they now have options that were not previously available. As a result, a number of states have seen the possibility of taking up these issues and in fact done so, to differing degrees. They include, but are not limited to, Argentina, East Timor, Guatemala, Libya, the former Yugoslavia and South Africa. Increasingly, people and states are realising that these processes can yield a variety of positive results. These societies see the gains both to the individual families and also to the community as a whole on a range of fronts.

These modern improvements in the processes for dealing with the missing must be seen in the context of states being more willing to deal with the past in a much more holistic way than has previously been the case, and of recognition that peace and stability occur only in states that have dealt sufficiently and acceptably with their contested histories. It is almost universally accepted that, in order to move forward, the past has to be come to terms with. Allowing matters to continue to fester and cause pain only ensures that a state and its people will not be reconciled and that stability will be elusive. For a new society based on democracy and human rights to emerge, or to be cemented, the problems of the past have to be confronted. This means that accountability, the rule of law and the avoidance...
of impunity are fundamental. Over time a range of rights, including the right to the truth, have emerged or become more accepted. The families of victims are now jurisprudentially entitled to know what happened to their family members. Part of this is the right to know what happened to the missing and where they are. Today there is also a belief that the state should do more to find, recover and identify the missing. In addition, more and more families of the missing are receiving justice and reparations. This process can promote healing and reconciliation. Around the world it is becoming accepted that forensic and other scientific processes can help in this regard, and that it is the state that has the duty and ability to carry out these activities in ways that promote accountability while ensuring that victims’ rights to the truth are upheld. Scientific developments allow these processes to be carried out more quickly, more cheaply and with more certainty than in the past. The massive improvements in the various scientific fields have had a dramatic effect on the legal and other processes. As a result, today more and more resources and personnel are being devoted to them, with concomitant positive results. The missing and disappeared from a range of events are being found and identified in larger numbers than at any period in the past. Search, recovery and identification processes are now becoming the norm. As a result, the rights of victims are being realised to a greater degree than ever before. While these rights existed in the past, they were often available only in theory; but today they are being realised more often in practice. More persons missing from recent conflicts or disasters have been accounted for than ever before in history. While there is much new technology that is being used to address issues relating to missing people, the extent to which these new capabilities are being applied continues to vary, depending on the circumstances and the places in which people go missing, as well as on who searches and to what end. While flexibility is necessary and variations are justifiable, the outcome must neither abrogate basic guarantees nor should it abandon overall objectives that are common to all.

However, even though there have been significant improvements on the scientific front, standards and procedures concerning the duty of states to tackle these matters are scarce. There need to be common principles and permissible procedures that those who are working in the field or are affected by circumstances can examine. This should be held to a universal or international standard. In this regard it was noted in 2014 that:

International law, when it comes to addressing the rights of victims of armed violence, is incoherent and patchy. Existing law covers some rights, for some victims, some of the time. But many victims of armed violence fall through the gaps of international law, leaving them without actionable rights … The problem lies in the fact that, currently, existing provisions are too diverse, spanning a variety of different legal frameworks … The rights of some victims are not adequately protected, and access to the services they need is impeded.

The lack of official and universally accepted standards and the fact that there are no clear laws dealing with the issues of missing persons cause many problems.
Jeremy Sarkin

While dealing with missing persons is covered in humanitarian laws, these largely deal with the responsibility of states during and after wars. There are standards dealing with internal armed conflict, but not for missing persons as a whole. There are no well-defined domestic or international standards that set out the law relating to the responsibility to search for, recover and identify the missing, although there are various international standards that play a role as far as these matters are concerned. These include the UN Principles on the Effective Prevention and Investigation of Extra-legal, Arbitrary and Summary Executions, which were endorsed by Economic and Social Council resolution 1989/65 of 24 May 1989 and by the UN General Assembly in Resolution 44/162 of 15 December 1989. The Principles provide guidance on a range of issues and refer to ‘thorough, prompt and impartial investigation of all suspected cases of extralegal, arbitrary and summary executions, including cases where complaints by relatives or other reliable reports suggest unnatural death’. Thus, these guidelines apply where death has been caused by criminal action in the three areas covered by the Principles. In such cases, the state has a duty ‘to determine the cause, manner and time of death, the person responsible, and any pattern or practice which may have brought about that death’. Investigations must include ‘an adequate autopsy, collection and analysis of all physical and documentary evidence and statements from witnesses’ and should ‘distinguish between natural death, accidental death, suicide and homicide’. A Protocol to these Principles, which is properly entitled the UN Manual on the Effective Prevention of Extra-legal, Arbitrary and Summary Executions and has become known as the Minnesota Protocol, was drafted in 1991. The Protocol lays out and illuminates the legal obligations of states to investigate potentially unlawful deaths and is today seen as supplementing the UN Principles. The Protocol is being updated in a process initiated by the United Nations (UN). However, there are a few issues that need to be resolved, including the fact that the Principles and Protocol are largely unknown and mostly not complied with. Further, even the Principles are not binding and can be ignored, which is presently the case. A binding treaty may help to rectify these problems. However, even a treaty does not mean that these matters will be complied with. A treaty is needed, but so too is there a need for education, training, domestic implementation and processes in order to achieve accountability and compliance. Critically, there are also a very limited number of processes to deal with such cases, and the ones that exist have relatively limited resources available to them. It is really only the ICRC and the ICMP that work on these issues globally. Relatively few countries have specific processes to work on missing persons, especially where they have gone missing as a result of massive crimes or other events where many people have gone missing. As a result, in many places the families of the missing have few places to turn to and are often unable to get results.

There is therefore a need for an international instrument and institution to deal with these problems around the world. Such an institution needs to be able to coordinate such work and needs to be able to work locally as well. Coordination is needed between all institutions. The UN has not been a great intervener in matters relating to missing persons: only the Advisory Committee of the Human Rights
Developments in the science of identification
Human Remains and Violence 3/1 (2017), 71–89

Council has taken up the matter, and then only to a limited degree. More needs to be done to coordinate between the ICRC, ICMP, Interpol and the UN. More needs to be done to ensure that the processes are not separate, but linked. All missing persons need to be catered for, regardless of how they have gone missing. This is an international and local problem: missing people cross state borders; they go missing very often because they cross into places where they are less likely to get protection. The subject of missing persons needs to be a more global agenda item and to receive much more attention worldwide. A standing, systematic, sustainable process to deal with these cases needs to be established so as to avoid overlap, costly duplication and processes that do not respect where the skills are and who is best suited to deal with a particular event.

At present the procedures and methods for dealing with missing persons are still pigeonholed according to specific categories. Distinctions are made, for example, between missing persons and victims of enforced disappearances. Classifications are still made according to whether a person is a victim because of organised violence or because of human trafficking. While these distinctions are of importance in criminal trials, the mechanisms for investigating these events are remarkably similar. It is therefore necessary to determine who searches and how missing persons are located, whether they are missing because of human rights violations, organised violence or migration. These initiatives require dramatically enhanced collaboration and the provision of different types of state support. There also need to be efficient sharing of knowledge and data, and an effective and harmonised use of cutting-edge processes to communicate and share data.

Much more needs to be done to integrate the approaches of the various disciplines. It is also necessary for the disciplines to work together and, as far as possible, achieve a multidisciplinary approach.

Developments in the science and technology and the challenges associated with these advances

Dealing with forensic issues, particularly in the field of disappeared or missing people in general, has become a burgeoning and critically important field since the 1990s, especially in the human rights arena. The forensics associated with the search for, recovery and identification of human remains has progressed rapidly in the twenty-first century. This is important, as families want to find their family members; they want to know the truth about what occurred. Families’ ability to attain accountability are also increasing because the processes of justice need to be able to prove a crime, and that becomes more likely when it can be shown how a person was killed. These forensic and scientific processes have been very useful in identifying human remains with certainty and have allowed families to get very specific assurances as to where their loved ones are, and often exactly what happened to them.

However, for by far the majority of people these technologies have not been available for a variety of reasons. If the technologies were more widely available and not so costly, more families would benefit from them. As the science improves, it
is rapidly growing in its ability to do the identification more quickly and far more cost-effectively than before. For now, however, the scientific processes are more readily available in countries with more resources and greater scientific skills.

Despite the technologies not being equitably available everywhere, the rapid development of DNA methods, in particular the development of the Polymerase Chain Reaction (PCR) in the late 1980s has revolutionised various scientific processes, specifically forensics. The remarkably rapid development of forensic DNA methods to identify individuals with very high scientific certainty suggests that even more effective and efficient approaches will be developed in the future. However, with the introduction of the next generation of sophisticated systems the world will again be challenged to meet the requirements for more complex analysis instruments.

As the science grows in new ways and has the ability to affect the identification process even more, so the standards and practices must be rigorously and ethically applied. Best practices and the best scientific standards must be applied; continual oversight and standard setting will enhance the field. It is important that continual scrutiny occurs so as to avoid unscrupulous and bad practices that take advantage of vulnerable victims. At the same time, those in the field need to be continually prepared to deal with the challenges that occur, be they large-scale atrocities or disasters or attempts by some to hijack processes for political purposes. The more that those working in the field have planned for the possible eventualities, the less the likelihood that things can go wrong or that there will be an inability, because of time or resource deficiency, to respond when there is a catastrophe or other problem. As people can go missing anywhere, anytime, for multiple reasons, the ability to deploy quickly, cheaply and skilfully is needed. Much needs to be done to make this an eventuality with few obstacles.

Forensic archaeology, which is applied to human remains as well as to other evidence that is discovered, has also grown by leaps and bounds and has become a critical part of the forensic science applied today, especially in the context of mass graves. As a result of these improvements much has been done to develop processes for the discovery, recovery and identification of the missing. For example, in 2002, graves belonging to more than two thousand soldiers from different nationalities who died during Napoleon’s 1812 retreat from Moscow were discovered in a mass grave in Vilnius, Lithuania. It is believed that a further ten thousand human remains are to be found from this event. In 2013, thirteen skeletons were discovered in London during railway tunnel excavations that proved to be Black Death victims from the fourteenth century. DNA tests on the teeth of the victims revealed the plague bacterium from over six hundred years ago (the graves were dated to approximately 1348–50). Thus, capabilities and capacities have been expanded by the new methodologies and sciences. Unfortunately they are often applied in an ad hoc or piecemeal way.

One of the problems that results from the dramatic improvement and use of these scientific methods, is ethical and other difficulties relating to how and for what purpose they can be used. Thus, of critical significance are questions about when, for what purpose and by whom these processes can and should be used. Will
these technologies be equitably available, or will issues such as cost exclude their use by some? How will these resources be shared, or will there be some capacity to do the work? Will there be permanent laboratories with sufficient capacity and staff that are accessible by all?66

Employing technical and other scientific capabilities in circumstances where people have gone missing can be highly politicised, with various stakeholders having a variety of different and opposing interests. Indeed, the issue of potential politicisation remains an on-going problem. Ensuring that these scientific and technological processes can be used in the best possible, non-political way demands that protocols are established universally and are independent of specific events.

There are enormous possibilities for these sophisticated criminological and other scientific processes to be misused.67 For example, they can be used to track people and invade their privacy;68 their results can be used to expand a variety of databases that could be used for other purposes not initially envisaged, such as holding information about large numbers of people for state intelligence purposes. The right to privacy or the right to identity could be infringed.69 Such a risk could dissuade people from participating in such scientific or forensic processes. Suitable safeguards to avoid such problems are therefore needed to complement the use of these techniques. Already masses of amounts of data have been collected and much more will be collected in the future. In this regard, it has been estimated that in 2011 thirty million DNA profiles were held in government-operated databases all over the world and that this would rise to one hundred million by 2015.70 The resources allocated to forensic DNA processes in some countries are extremely large. For example, it was estimated that in North America law enforcement would spend $750 million on forensic DNA databases in 2015.71 This brings challenges, as using data for law-enforcement purposes needs to be carefully controlled and restricted so as not to violate the rights of the persons whose DNA is being held.

The rights to privacy of those persons whose DNA has been collected need to be protected. This means that their DNA should be used only for the purpose for which they consented. Other purposes should be disallowed, specifically, other criminal justice purposes. Thus, methods need to be found to protect such data from being used for other reasons. In 2009 the Organization of American States held that member states must ‘ensure adequate protection of the personal data gathered in connection with missing persons, in accordance with the law’.72

While developments in forensic technology have occurred quickly, the law at all levels has not kept up with these advances. This needs to be dealt with. Nonetheless, important standards are to be found in ‘Human Rights and Forensic Science’, adopted by the UN Commission on Human Rights on 19 April 2005, resolution 10/26, and in ‘Forensic Genetics and Human Rights’, adopted by the UN Human Rights Council on 27 March 2009 in terms of Human Rights Council Resolution 10/26. These standards should be adhered to. Cognisance also needs to be taken of the UN Guidelines for the Regulation of Computerized Personal Data Files (1990), the Council of Europe Convention for the Protection of Individuals with regard to Automatic Processing of Personal Data (1981) and the Organisation for Economic

Databanks need to be established that are able to share information on these matters. They need to be able to link together the different data that is collected. However, they do need to be protected against misuse. The protection of information needs to be done in a way that still permits access to those who absolutely need the information.

A variety of institutions can either perform these roles collectively or designate one of them to do so. The processes adopted need to be sustainable, and methods to ensure that this occurs need to be found. A collective means to respond to this issue will ensure that as much of the world as possible is covered. Resources need to be shared, and people need to be trained all over the world to be capable to respond to whatever crisis occurs whenever the need arises.

Conclusion

As a result of the new and improved scientific and technological processes to deal with the missing or disappeared, particularly in the countries that made up the former Yugoslavia, there have been remarkable advances in finding, recovering and identifying missing people. Of the estimated forty thousand persons who went missing as a consequence of the conflicts in the former Yugoslavia over 70 per cent have been accounted for today. In BiH specifically, where an estimated thirty-two thousand persons went missing, more than 75 per cent have been accounted for. Unfortunately, this happens in too few places; it is rarely that so much is known and so much of the data is publicly available. Finding, collecting, analysing and disseminating such information is vital to ensuring that the issues relating to missing people are dealt with sufficiently and comprehensively. Much more needs to be done, and having the necessary information and data is the first step to ensuring that the extent of the problem is sufficiently understood. More resources and the new technology need to be equitably available to all countries. More families need to have their rights made available to them in practice, by states ensuring that they have access to the science which enhances their ability to achieve certainty about the fate of their loved ones. The fact that the technology is being made more widely available is a boon to victims’ rights. The continuing reduction in cost, as well as quicker, more effective processes, will ensure that more victims will benefit – although cost is still a barrier and will remain so in poorer communities. However, using low-cost technology, like a short message service (SMS), certain processes would be easy and cost-effective, and poor people and people in rural or remote areas would have access to a system for reporting missing persons.

The enhancement of processes to search for, recover and specifically identify missing persons is, arguably, the most important development for victims since the mid-1990s. Victims’ needs are being given greater importance as a result of these processes, at least in theory. However, much more needs to be done to ensure that the practice mirrors the theory. It is true to say that developments in the science are spurring on the practical advancement of the rights of victims, whose needs
are often overlooked, or at least given little priority. Today, victims who see what has happened elsewhere are demanding more access to these new processes. They know that searching for, recovery and identification of people is happening all over the world and are demanding that their needs, too, be catered for. Obviously, not all states have the capacity, skill or resource to provide such services. However, the growth of organisations working in this area that and are willing to share their capacity has seen many processes happen in places that were previously unable to undertake them. Thus, forensic teams from Argentina, Guatemala and elsewhere have enabled these processes in under-resourced places. Families’ uncertainty about what happened to their loved ones has been replaced by a scientific means to recover and identify human remains with a great deal of certainty, and identification of human remains that was previously not possible is now more common.

Certainty in the identification process is for many what the right to the truth is now about. People want the truth, and with positive identification of human remains the truth is more attainable. Dealing with the missing has dramatic effects in many places. Without processes to deal with the missing, reconciliation processes can falter and people can doubt the intentions and commitment of the state and others to move forward in positive ways. In places where people have gone missing, particularly because crimes have been committed, today the relatives are more often likely to expect recovery and identification.77 Victims are therefore more likely to obtain their rights78 to truth, justice79 and reparations.80 There is now a right to a remedy, which includes the right to an effective investigation, verification of the facts and the disclosure of the truth.81 States have a duty to investigate human rights violations and what happened to the victims. The right to the truth82 requires a state to carry out a rigorous investigation to disclose ‘what really happened, why it happened, and who is directly and indirectly responsible’.83 The search for, recovery and the identification of people helps to give meaning to the rights that have come to the fore and from which victims want practical results.

Various organisations at the international, regional, sub-regional and domestic levels have an important role to play in regard to these issues. Coordinating bodies, like Interpol, Europol and others, need to play a vital role in facilitating these processes.

Notes

4 J. Sarkin, “The Need to Deal with All Missing Persons Including Those Missing as a Result of Armed Conflict, Disasters, Migration, Human Trafficking, and...


10 See generally on their work I. Hanson, ‘Forensic Archaeology: Approaches to International Investigations’, in M. Oxenham (ed.), *Forensic Approaches to Death, Disaster And Abuse* (Queensland, Australian Academic Press, 2008), p. 17.


14 See further D. Hartmana, O. Drummera, C. Eckhoffb, J. W. Schefferc and
Developments in the science of identification

Human Remains and Violence 3/1 (2017), 71–89


26 The effect of the process is, however, enormous for other parts of the world where greater efforts are now being made in a number of countries to deal with the missing.
Jeremy Sarkin


29 Wagner, *To Know Where He Lies*.


42 See B. Budowle, F. R. Bieber, A. J. Eisenberg, ‘Forensic Aspects of Mass Disasters:
Strategic Considerations for DNA-Based Human Identification’, *Legal Medical (Tokyo)*, 7 (2005), 230–43.


52 There are lots of new or newly enhanced sciences being used. One new methodology, called photogrammetric reconstruction, uses lasers, photos, videos etc. to reconstruct the crime scene and thus makes an important contribution to determining what occurred. Others include enhanced satellite imagery observation and remote sensing.


60 See P. Sant Cassia, Bodies of Evidence: Burial, Memory and the Recovery of Missing Persons in Cyprus (New York, Berghahn, 2005).


64 Ibid.


72 Organization of American States resolution AG/RES. 2513 (XXXIX-O/09) on Persons Who have Disappeared and Assistance to Members of their Families (2009), para. 15.


75 On the numbers of casualties in the Bosnian war see the estimate done by the International Criminal Tribunal for the former Yugoslavia in 2010, using a multiple systems estimate (MSE), see J. Zwierzchowski and E. Tabeau, ‘The 1992–1995 War in Bosnia and Herzegovina: Census-based Multiple Systems Estimation of Casualties Undercount’, International Research Workshop on ‘The Global Costs
of Conflict’ the Households in Conflict Network (HiCN) and the German Institute for Economic Research, 1 February 2010. There were 42,106 civilians and 62,626 soldiers killed between 1992 and 1995. See also the Bosnian Book of the Dead compiled by the Research and Documentation Center (RDC) in Sarajevo. See P. Ball, E. Tabeau and P. Vermip, ‘Bosnian Book of the Dead: Assessment of the Database’, HiCN Research Note, 17 June 2007. On MSE generally, see the work of the Benetech Initiative’s Human Rights Data Analysis Group (HRDAG).


